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[1] A: Occasionally you find a trace amount, but
[2] for the most part, you get nothing.
[3] Q: Are there any lawsuits or claims pending
[4] concerning your operations down there that suggest
[5] that the vermiculite being mined in South Carolina
[6] is somehow dangerous?
[7] A: I don't know if that's the case.
[8] Q: Do you know of any?
[9] A: I don't know of any.
[10] Q: That facility down there is still
[11] operating?
[12] A: That's correct.
[13] Q: Still producing vermiculite?
[14] A: Yes.
[15] Q: But the one in Libby is not operating and
[16] not producing vermiculite; correct?
[17] A: That's correct.
[18] Q: So if I understand correctly, you're
[19] saying that the reason that the Libby operation is
[20] not commercially feasible is because Grace's
[21] competitors were able to suggest in the marketplace
[22] that Grace's vermiculite coming from Libby had
[23] asbestos in it and that their products were free of
[24] asbestos and that gave them a competitive

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[1] advantage; something to that effect?
[2] A: Their products were free of vermiculite
[3] and that it wasn't worth the potential for lawsuits
[4] or anything else to use the vermiculite from Libby.
[5] Q: So it would be fair, then, to say, at
[6] least indirectly, the asbestos or tremolite
[7] contamination of the vermiculite at the mine and at
[8] the facility in Libby contributed to its being shut
[9] down; is that true?
[10] MR. MURPHY: Objection to the form.
[11] Lack of foundation.
[12] A: I think it would be fairer to say that
[13] the perception of contamination of the Libby
[14] vermiculite was part of the cause of the shutdown
[15] of the facility.
[16] Q: Well, now, the – is this just a
[17] perception of hazard associated with this
[18] vermiculite operation, or was there, in fact, a
[19] hazard? What is it?
[20] MR. MURPHY: Objection to the form.
[21] Vague and ambiguous.
[22] A: In the past ten or fifteen years the
[23] process in Libby had become more and more
[24] sophisticated so that, in fact, there was little or

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[1] no potential hazard from the vermiculite. The
[2] amount was insignificant and it was further reduced
[3] by the expanding process.
[4] Q: When did the Libby facility shut down?
[5] A: The Libby facility, I believe, shut down
[6] in 1991. They stopped production in 1991. They
[7] continued to ship vermiculite for a couple of years
[8] while they were dismantling the facility.
[9] Q: When do you contend that they had cleaned
[10] up their operation to the extent that it did not
[11] create a hazard for any of the employees there?
[12] A: You're talking about two different things
[13] here. You were talking about the product leaving
[14] it and now you're talking about employees.
[15] Q: Okay.
[16] A: My feeling is that this facility created
[17] no significant hazard for employees if they
[18] followed appropriate work practices and in some
[19] jobs wore respirators as required and that kind of
[20] thing. But if they followed the appropriate
[21] practices from the mid-seventies on.
[22] Q: How did Darrell Lockwood get mesothelioma
[23] when he went to work there in about – if you're
[24] correct, how did employees get mesothelioma from

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[1] working there after that time?
[2] MR. MURPHY: Objection to the form.
[3] Lack of foundation. Argumentative.
[4] MR. LEWIS: I'll rephrase the
[5] question.
[6] Q: I would like you to assume for the sake
[7] of this question, that my client, Darrell Lockwood,
[8] died of mesothelioma and that he worked for W.R.
[9] Grace for about nine or ten years ending in 1984.
[10] And that his only exposure to asbestos was at the
[11] Libby facility. Do you know how he could have
[12] contracted mesothelioma during that time frame?
[13] MR. MURPHY: Objection to the form.
[14] Lack of foundation. Hypothetical.
[15] A: I believe that it's extremely rare for
[16] someone to get mesothelioma in less than
[17] twenty-five or thirty years. It happens, but it's
[18] rare. I don't know what Darrell Lockwood's
[19] exposures were prior to his joining Grace. I do
[20] know from looking through the files for some
[21] medical records which were supplied to you that he
[22] did have exposure to arsenic and other materials,
[23] but I don't know that that causes mesothelioma.
[24] But I do also know that there are a certain amount

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[1] of mesotheliomas that do not seem to have an
[2] asbestos cause. I don't think that anybody can say
[3] whether it was Libby exposure – exposure at Libby
[4] or other exposures or not related at all. I don't
[5] think that's possible in this kind of disease.
[6] Q: Well, we know that mesothelioma, the most
[7] likely cause of mesothelioma is exposure to
[8] asbestos. Do you agree with that?
[9] A: I believe if you take a cohort of many
[10] people that that is the case. In an individual
[11] case, I don't believe that you can tell.
[12] Q: Do you know of other causes of
[13] mesothelioma? Are you qualified to give testimony
[14] on that?
[15] A: I don't believe – I'm not a doctor, as
[16] you said before. I don't believe that anyone knows
[17] precisely what the other causes are, but it's
[18] believed that somewhere between fifteen and thirty
[19] percent are spontaneous in the population – of the
[20] mesotheliomas, are spontaneous and of no known
[21] cause and have no known asbestos exposure.
[22] Q: And you're not a doctor but you claim
[23] that to be true? What literature supports that?
[24] A: I don't claim that to be true. What I'm

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[1] saying is my reading of various documents through
[2] the years. I can't give you the precise document
[3] at this point, but that's commonly accepted
[4] knowledge.
[5] Q: What if he had asbestos fibers in his
[6] lungs and mesothelioma was present?
[7] A: We all have asbestos fibers in our lungs.
[8] Some people living in cities have 400 million
[9] fibers in their lungs quite commonly.
[10] Q: Is it possible that the Libby facility of
[11] W.R. Grace let asbestos fibers get out of its
[12] facility and into the ecosystem surrounding Libby?
[13] A: You'll have to explain that question. I
[14] don't know precisely what you mean.
[15] Q: Have you ever read any of Earl Lovick's
[16] testimony where he indicated they were dumping tons
[17] and tons of asbestos over the side of the mountain
[18] into the creek and down into the river for years?
[19] MR. MURPHY: Objection to the form.
[20] If you have such testimony, please
[21] show it to him. I don't think you can.
[22] MR. LEWIS: I can show it to you. I
[23] took the trial testimony.
[24] MR. MURPHY: Tons and tons of

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[1] asbestos?
[2] MR. LEWIS: Tons and tons of
[3] asbestos.
[4] A: I don't know anything about that. I
[5] don't know anything about that testimony.
[6] Q: Do you know what was done with waste
[7] asbestos over the years?
[8] A: Materials that weren't used in the mine,
[9] that weren't usable that were mined, were dumped
[10] over the side of the mountain, that's correct. But
[11] into a creek? I don't know that to be the case.
[12] Q: You don't know anything about that?
[13] A: I know about Rainy Creek which was, in
[14] fact, put in a culvert so that it wouldn't be –
[15] pick up materials of any kind from the mining
[16] operation. But as far as dumping stuff into the
[17] creek and into the river, I don't know – I don't
[18] know anything about that.
[19] Q: Does Rainy Creek run into Kootnai River?
[20] A: Yes.
[21] Q: Did Kootnai River run toward Troy?
[22] A: Yes.
[23] Q: Have you ever done any air testing in
[24] Troy?

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[1] A: No.
[2] Q: How about at various spots in Libby other
[3] than at its physical plant?
[4] A: Yes. We tested downtown.
[5] Q: Did you find any asbestos down there?
[6] A: No. We found nothing that you could
[7] identify as asbestos, and there are things that
[8] look like they might be fibers, but nothing that
[9] was clearly – bug wings and that kind of thing.
[10] But no significant amount. We tested for long
[11] periods of time.
[12] Q: Where was the bulk vermiculite loaded
[13] onto the train cars?
[14] A: That was done just north of the Kootnai
[15] River on a rail siding.
[16] Q: How far from the river itself?
[17] A: Maybe three or four hundred yards.
[18] Q: Do you know whether the workers and their
[19] families at the W.R. Grace facility were encouraged
[20] to take vermiculite home with them and put it in
[21] their gardens by W.R. Grace management from time to
[22] time?
[23] A: I don't know.
[24] Q: Have you ever heard of that?

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[1] A: I wouldn't be surprised if some of them
[2] did, although I'm not sure that unexpanded
[3] vermiculite had any horticultural value. If they
[4] had expanded vermiculite there, and I think many,
[5] many years ago in the fifties, perhaps, or early
[6] sixties they did some expansion, they might have
[7] taken that home. But the regular vermiculite, I
[8] don't think has – there is any reason you would
[9] put it in your garden.
[10] Q: You said you were in the dry mill;
[11] correct?
[12] A: Yes.
[13] Q: Did you ever look at the rafters in the
[14] dry mill?
[15] A: Yes.
[16] Q: Have you ever seen photographs of those
[17] rafters?
[18] A: I don't recall I've seen photographs.
[19] I've seen the rafters.
[20] Q: Were they coated with vermiculite fibers?
[21] A: They were coated with dust from the
[22] operations, no matter what that contained.
[23] Q: All of the rafters were covered with a
[24] gray dust; is that correct; when you were there?

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[1] A: No. It was a tan dust.
[2] Q: A tan dust, then. How much accumulation
[3] of the tan dust was there on the rafters, if you
[4] noticed it?
[5] A: It all depended on the size of the rafter
[6] and the operation of the plant. If you build up
[7] dust on a rafter and it – the plant is vibrating,
[8] it falls off.
[9] Q: Did the plant vibrate?
[10] A: Yes, it did.
[11] Q: And that kept the dust circulating;
[12] correct?
[13] MR. MURPHY: Objection to the form.
[14] Lack of foundation.
[15] A: The plant vibrated, so dust would fall
[16] off the rafters. However, that place was pretty
[17] much open and the dust just sort of dispersed in
[18] some cases.
[19] Q: Where did the dust go?
[20] A: Out on the ground, I guess.
[21] Q: Was the dust contaminated with tremolite
[22] asbestos fibers in the old dry mill?
[23] A: Yes, it was.
[24] Q: And as part of the process of cleaning up

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[1] the operation there, was an effort made by W.R.
[2] Grace to produce vermiculite that had less and less
[3] of the tremolite contamination in the product that
[4] was being shipped?
[5] A: Yes.
[6] Q: But would you agree with me that the ore,
[7] the percentage of tremolite in the ore remained at
[8] approximately the same over the years?
[9] MR. MURPHY: Objection to the form.
[10] Lack of foundation.
[11] A: I believe that the percentage of
[12] tremolite was approximately the same in the ore
[13] body. However, by careful mining practices through
[14] the years they reduced the amount that they sent to
[15] the mill.
[16] Q: How do you know that? Did you see that?
[17] A: I –
[18] Q: Did you observe it?
[19] A: I don't know if I observed it. I knew it
[20] through discussions with Oliverio and Bill McCaig
[21] and with the mine manager and the mill manager.
[22] Q: Would it be fair to say that an attempt
[23] was made by W.R. Grace to leave more and more of
[24] the tremolite back at the mine or in the mill than

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[1] was the case in the fifties?
[2] MR. MURPHY: Objection to the form.
[3] Q: Do you understand the question?
[4] A: I think if you put it the positive way,
[5] an attempt was made to mine higher grade
[6] vermiculite ore with less tremolite and send that
[7] to the mill and then to do a better refining job so
[8] that the vermiculite concentrate leaving the mill
[9] had less asbestos contamination. That would be the
[10] case, yes, through the years.
[11] Q: You're sure about that? Who mined it?
[12] Who mined the vermiculite?
[13] MR. MURPHY: Objection.
[14] Which question do you want him to
[15] answer?
[16] A: I don't understand your question. What
[17] company?
[18] Q: No; what persons mined it?
[19] A: The miners.
[20] Q: What machinery did they use to mine it?
[21] A: They used, I guess in the old days, they
[22] used something – it was called a steam shovel, if
[23] you will, but in more modern times they used a big
[24] payloader.

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[1] Q: But they mined it in big chunks; right?
[2] A: They mined it in big chunks, but the
[3] nature of the ore body is such that you would have
[4] big pockets of vermiculite and you would have a
[5] pocket of virtually poor tremolite. And what they
[6] did was take the vermiculite out and not mine that
[7] heavy tremolite.
[8] Q: And you observed that?
[9] A: Yes, I observed that.
[10] Q: Were there any efforts made at the mills
[11] to screen out a higher amount of tremolite?
[12] A: Yes. That was an ongoing process to
[13] refine it to get out more and more of the tremolite
[14] from the vermiculite.
[15] Q: So would it be fair to say that in this
[16] process, more and more tremolite remained at the
[17] mill to expose the workers than would have been the
[18] case if you used the old mining practices?
[19] MR. MURPHY: Objection to the form.
[20] Argumentative.
[21] A: No. It wouldn't be fair to say that. It
[22] was more and more tremolite was removed from the
[23] material and disposed of, but worker exposures
[24] continued to decline through the years because of

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[1] the improved processing.
[2] Q: And what kind of improved processing;
[3] through the new wet mill?
[4] A: The new wet mill, but constant tinkering
[5] in the wet mill to improve the processing in the
[6] mill.
[7] Q: Where did that tremolite go that was in
[8] the product? What did you do with it?
[9] A: It was put in dumps. It went into the
[10] clarifiers, the water clarifiers, and was disposed
[11] of in the tailings.
[12] Q: So it went to the dumps. What dumps are
[13] we talking about?
[14] A: Well, I think more of it in – some of it
[15] was taken back to the mine and disposed of there,
[16] the big pieces of tremolite that somehow got into
[17] the process. The other material removed during the
[18] processing was, in fact, disposed of in the
[19] tailings.
[20] Q: And left in the tailing pond?
[21] A: Yes. Put in the tailings, yes.
[22] Q: How long had that tailing pond – was it
[23] there before you came?
[24] A: Yes.

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[1] Q: Was it there before the new mill was put
[2] in – the wet mill was put in?
[3] A: I believe there had been a tailings pond
[4] for many years. I don't know whether, in fact, the
[5] new mill was put in, whether they changed that or
[6] upgraded it or what, but I believe there were some
[7] changes made.
[8] Q: You claim you got a pure form of
[9] vermiculite that you shipped out; right? That was
[10] the goal, so that your consumers had a less
[11] contaminated product; right?
[12] A: There was less tremolite in the product
[13] leaving Libby, yes.
[14] Q: And, in fact, you claimed in earlier
[15] testimony here today, that really, it was a
[16] negligible tremolite contamination and, in fact,
[17] the reason that the Libby mill failed was not
[18] tremolite contamination but what your competitors
[19] were able to argue about or suggest to the
[20] purchasing public concerning tremolite in the
[21] vermiculite?
[22] MR. MURPHY: Objection to the form.
[23] A: No. That's not quite correct. What I
[24] said was that it ranged from trace amounts to a

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[1] small percentage, but that was further removed in
[2] the expanding process so that in many cases you
[3] couldn't find any in the product coming from those
[4] locations.
[5] Q: In the bulk product?
[6] A: In the expanded product and products made
[7] from the expanded product.
[8] Q: Then is it your testimony that in
[9] actuality the product that was produced in Libby,
[10] the final product that left Libby either in bulk or
[11] in sacks, had about the same amount of tremolite
[12] contamination at the time the mill closed as it did
[13] all along?
[14] A: No. That's not my testimony.
[15] Q: Your testimony is that there was some
[16] improvement; right?
[17] A: There was significant improvement through
[18] the years, yes.
[19] Q: But can we agree that the tremolite had
[20] to go somewhere between the time it was mined and
[21] the time it was loaded on those railcars or put in
[22] sacks in Libby; if there was less tremolite at the
[23] time the plant closed in 1990 or '91, than there
[24] was, say, in 1972, the tremolite had to go

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[1] somewhere; right?
[2] MR. MURPHY: Objection to the form.
[3] Argumentative.
[4] A: No, that's not correct. What I said was
[5] among the first steps was the heavy
[6] tremolite-containing ore was no longer mined, so
[7] that the feed reaching the mill had less tremolite.
[8] But the mill did an ever-improving job of removing
[9] the ever-lessening amount of tremolite in the mill
[10] feed and that for the most part – or almost a
[11] hundred percent of that went to the tailings pond.
[12] Q: What was that, the tailings pond; to keep
[13] that tremolite from going into the environment in
[14] general?
[15] A: The material was wet and there was a dam
[16] at the end of the tailings pond, and the water, the
[17] heavy water – when it went in, it was almost like
[18] soup. The water filtered through the dam and came
[19] to a pond where water was taken from that pond and
[20] reused in the process.
[21] Q: Would that pond – would water constantly
[22] be evaporating from that pond?
[23] A: I guess water would be constantly
[24] evaporating from any pond.

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[1] Q: What was to keep the tremolite from going
[2] out of there with the water that ran through the
[3] pond?
[4] MR. MURPHY: Objection. Lack of
[5] foundation.
[6] A: There was no significant tremolite in the
[7] water coming through the dam.
[8] Q: You measured – you checked that?
[9] A: I didn't check it, but it was checked
[10] frequently.
[11] Q: The water itself was checked?
[12] A: Yes.
[13] Q: For tremolite asbestos fibers?
[14] A: The water was checked for a variety of
[15] potential contaminants.
[16] Q: Who checked it?
[17] A: The maintenance or engineering people at
[18] Libby.
[19] Q: Were there recognized tests to check the
[20] water for tremolite or asbestos contamination?
[21] A: I –
[22] Q: Do you know?
[23] A: I know that you can check water for
[24] asbestos contamination. You've been able to do

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[1] that for many years.
[2] Q: Do you know if that was, in fact, done?
[3] A: I believe that was done. I don't know
[4] who did it.
[5] Q: Do you know how frequently that was done?
[6] A: I don't know.
[7] Q: So is it your theory that all of the
[8] tremolite that was removed from the vermiculite
[9] during the milling process remained in the tailings
[10] pond?
[11] MR. MURPHY: Objection to the form.
[12] Argumentative.
[13] A: I'm saying that to all intents and
[14] purposes, yes, most of it.
[15] Q: Did you find that question argumentative?
[16] Was that a clear question to you?
[17] MR. MURPHY: Theory.
[18] A: I – I don't know.
[19] Q: So if your counsel is right, you don't
[20] know where that – it's just theory; you theorize
[21] that's where it remained?
[22] MR. MURPHY: That's the basis of my
[23] objection. You used the word theory.
[24] A: My belief is to all intents and purposes

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[1] there was no significant tremolite escaping in the
[2] air and the water from the mining/milling
[3] operation.
[4] Q: From the time you hired on for W.R. Grace
[5] in August of 1971 up until the time the mill
[6] closed?
[7] A: I believe that there was no – by
[8] significant, I mean nothing that would violate any
[9] air purity rules or regulations or water purity
[10] rules or regulations.
[11] Q: So now your testimony is that constantly
[12] they were trying to mine purer forms of
[13] vermiculite?
[14] A: That's correct.
[15] Q: And what did they do with the more
[16] contaminated vermiculite that had a great deal of
[17] tremolite in it?
[18] A: You'd move that over, use it to replace
[19] materials when you were finished mining at a level,
[20] to – you would bury it, in essence.
[21] Q: Isn't it true that they threw it over the
[22] side of the mountain?
[23] A: That was certainly pure amounts of pure
[24] tremolite. I think that the term threw – it was

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[1] dumped on a pile on the side of the mountain.
[2] Q: And exposed to all the elements? Exposed
[3] to snow conditions?
[4] A: There was exposure to rain and snow, yes.
[5] Q: Was any of that tremolite fibrous?
[6] MR. MURPHY: Objection to the form.
[7] Lack of foundation.
[8] A: Yes.
[9] Q: It was fibrous; correct?
[10] A: Yes.
[11] Q: Let's talk about your suggestion there.
[12] When it was in the mountain before it was mined it
[13] was covered by vegetation in most parts; right?
[14] A: No, not necessarily. There were many
[15] places where it wasn't covered by vegetation.
[16] There was vegetation, yes, in many areas, but there
[17] were also places where it wasn't.
[18] Q: Did you ever stay at the Venture Motel?
[19] A: I've stayed at the Venture Inn, too.
[20] Q: Did you ever look up at the side of the
[21] mountain and see the gash in the mountain that was
[22] the vermiculite mine? Could you see it from the
[23] Venture Hotel?
[24] A: I could see sometimes the steam from the

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[1] operation, and occasionally a building. But I
[2] don't know that I was ever there where the weather
[3] was clear enough to see, quote, a gash. I don't
[4] know that to be the case. I have seen aerial
[5] photographs and it was a surface mine. So you
[6] had – you removed the material.
[7] Q: But by the mining process, the tremolite
[8] was exposed – much tremolite, thousands of tons of
[9] tremolite, maybe even hundreds or millions of tons
[10] of tremolite was exposed to the air that would not
[11] have been exposed had there not been a surface
[12] mine. Do you agree with that?
[13] MR. MURPHY: Objection to the form.
[14] Lack of foundation. Hypothetical, argumentative.
[15] A: I don't know what quantity of tremolite
[16] was exposed to the air. I don't know precisely
[17] what amounts of tremolite there was in tons.
[18] Q: Do you know how much tremolite was mined
[19] each day up there?
[20] A: I don't know offhand, no.
[21] Q: Would Earl Lovick know how many tons of
[22] vermiculite concentrate was produced at this mill
[23] over the years he was there? Would that be part of
[24] his job?

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[1] A: I don't know that that was part of his
[2] job. I don't know how precisely he could give you
[3] those figures. I assume he has some general idea,
[4] but I don't know that to be the case.
[5] Q: Do you know what percentage of the mined
[6] material was discarded because it had too much
[7] tremolite in the ore?
[8] A: I don't.
[9] Q: And you do agree that it was discarded
[10] over the side of the mountain; correct?
[11] A: Some of it was, yes.
[12] Q: Can you estimate when you were last there
[13] the square area, the area of that discarded
[14] tremolite that went over the side of the mountain?
[15] MR. MURPHY: Objection to the form.
[16] Q: That's the surface area, I'm talking
[17] about; not the depth.
[18] MR. MURPHY: Same objection.
[19] A: I don't recall precisely. A wild
[20] ballpark number would be maybe a couple of a
[21] hundred yards by four hundred yards, but I can't
[22] recall precisely.
[23] Q: Was that side of the mountain exposed –
[24] would the water run off of that mountain into the

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[1] Kootnai River?
[2] A: I know of no streams there.
[3] Q: What about snow melt? Would it run off
[4] there into the Kootnai River?
[5] MR. MURPHY: Objection to the form.
[6] Lack of foundation. Hypothetical.
[7] A: I don't know – well, snow melt, you
[8] would – it would eventually have to go to a
[9] stream. I don't know of any stream there. I know
[10] of no significant run-off into the Kootnai River.
[11] Q: At any time that you were there; never
[12] happened?
[13] A: I'm not saying that. I don't know of any
[14] upsets that could have happened, but I don't know
[15] of any run-off into the Kootnai River of
[16] significant amounts of tremolite fiber.
[17] MR. MURPHY: It's 12:20.
[18] MR. LEWIS: Let's take a break.
[19] (Discussion off the record).
[20] (Whereupon, a luncheon recess was
[21] taken).
[22]
[23]
[24]

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[1] AFTERNOON SESSION
[2] EXAMINATION BY MR. LEWIS:
[3] Q: Sir, I have before me a copy of a
[4] transcript of a jury trial proceeding in the
[5] trial Mildred Johnson versus W.R. Grace tried in
[6] the Missoula Division of the United States District
[7] Court for the District of Montana, and at that
[8] trial, I represent to you that Mr. Earl Lovick
[9] testified that at the time he retired in 1983, the
[10] mill was discarding approximately 630 tons of
[11] asbestos per day, which was out of 21,000 tons
[12] per day of overall waste material from its
[13] operations. Do you have any reason to question
[14] those numbers?
[15] A: I have no reason to question or verify
[16] them. I just don't know.
[17] Q: In other words, he testified that to
[18] produce a thousand tons per day of concentrated
[19] vermiculite, which is about what they were
[20] producing, they had to have 22,000 tons of ore, of
[21] which 21,000 would be discarded, and of that 21,000
[22] tons, the percentage of asbestos – tremolite
[23] asbestos in that amount would be 630 tons. And he
[24] said in his testimony that this asbestos would be

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[1] discarded in one of two ways – actually, three
[2] places, he said. One, it would be discarded in
[3] tailings, as you suggested. Two, it would be
[4] discarded in a mine dump over the side of the
[5] mountain. And three, would be whatever is left in
[6] the vermiculite concentrate.
[7] Does that make sense to you –
[8] MR. MURPHY: Objection to the form.
[9] A: Well –
[10] Q: – based on your observation?
[11] A: Although I think there are three possible
[12] places that the tremolite could go, and that's what
[13] he listed, yes.
[14] Q: And he also testified that some of this
[15] was discarded into a creek called Rainy Creek which
[16] ran into the Kootnai River about five miles above
[17] Libby. Can you verify that?
[18] A: I don't believe –
[19] MR. MURPHY: Objection to the form.
[20] And I object to your reading Mr. Lovick's
[21] testimony to him. I don't see the purpose of
[22] asking Mr. Eschenbach, who has already told you
[23] that he cannot answer questions as to amount per
[24] day. That wasn't his job; or what the waste may

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[1] have been. I don't understand –
[2] MR. LEWIS: He also testified that he
[3] said there was no creek there and Mr. Lovick is
[4] saying that some of this went into Rainy Creek and
[5] into the Kootnai River.
[6] Q: Do you contest Mr. Lovick's testimony in
[7] that regard?
[8] A: To the best of my knowledge, nothing went
[9] into Rainy Creek. No significant amount of
[10] tremolite went into Rainy Creek.
[11] Q: Did you go up and look at Rainy Creek to
[12] see if any asbestos was getting into it?
[13] A: I've walked along Rainy Creek many times.
[14] Rainy Creek was in an enclosed thing where it
[15] passed near the operations to prevent any
[16] contamination. I don't know of any contamination
[17] that went into Rainy Creek, at least during my
[18] time.
[19] Q: When did you look at Rainy Creek and look
[20] at this culvert?
[21] A: It was there all the time that I
[22] visited.
[23] Q: So you would not defer to Mr. Earl
[24] Lovick's understanding of the situation here?

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[1] MR. MURPHY: Objection to the form.
[2] A: You're reading me testimony. I don't
[3] know the circumstances. I don't know whether he
[4] understood the question. All I'm saying is, to the
[5] best of my knowledge during my time with Grace, we
[6] did not dump anything into Rainy Creek.
[7] Q: Where was Rainy Creek located in relation
[8] to the dump site where all of the asbestos or
[9] tremolite that did not end up in the product and
[10] did not end up in the tailings pond was deposited?
[11] A: It's on the other side of the mountain.
[12] It wasn't near that site, to the best of my
[13] knowledge.
[14] Q: Was there more than one dump site?
[15] A: Not during my time.
[16] Q: Did you know Darrell Lockwood?
[17] A: I believe that at one time or another I
[18] gave Darrell Lockwood lung function tests and sat
[19] down and asked him questions on a questionnaire. I
[20] can't place the face. I know the name, but I can't
[21] place the face.
[22] Q: You don't know what he looked like as you
[23] sit here now?
[24] A: As I sit here now, no.

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[1] Q: You don't know if he was a big man or a
[2] little man?
[3] A: There were at one time five hundred
[4] employees at Libby and even when they scaled down
[5] through the years, there were at least a couple
[6] hundred. I know the name Darrell Lockwood. I know
[7] the name is familiar. I know I knew the man, but I
[8] just can't place the face with a name.
[9] Q: Can you recall any conversations with
[10] Mr. Lockwood?
[11] A: No. As I said, I gave him a lung
[12] function test, I know, in 1981 or something like
[13] that. I may have done that before. I'm sure I
[14] spoke to him several times because the name sticks
[15] in my mind, but I just can't place him.
[16] Q: You performed lung function tests for
[17] W.R. Grace?
[18] A: We did some of our own, yes.
[19] Q: Was that part of your usual duties?
[20] A: Sometimes we would do – I would help,
[21] yes.
[22] Q: Who taught you how to do that?
[23] A: The manufacturer of the lung function
[24] testing equipment. This was before there were

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[1] standards concerning that kind of thing or before
[2] there was any requirement. We did our own.
[3] Q: Isn't that something that is ordinarily
[4] done by medical doctors?
[5] A: It can be. It's done by technicians.
[6] However, we – we had some training and I think we
[7] did the test as well, if not better, than many
[8] technicians who do it once or twice a year.
[9] Q: Let me ask you this. Were most lung
[10] function tests done by W.R. Grace management level
[11] personnel like yourself?
[12] A: They were done by industrial hygienists
[13] and basically by industrial hygienists as a
[14] screening tool.
[15] Q: But were these industrial hygienists
[16] employed by W.R. Grace?
[17] A: Yes.
[18] Q: Did you ever have independent lung
[19] function testing done on employees?
[20] A: Let me explain, if you will. We did this
[21] as a screening tool. If, in fact, the lung
[22] function test was below or indicated any
[23] significant impairment, then we sent that person to
[24] a doctor for follow-up. The beauty of this is, if

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[1] you will, there is no way to cheat so that you
[2] are – you look good when you're not. However, if,
[3] in fact, you're not doing the test properly, the
[4] numbers would come out low so that person would be
[5] sent to a physician. So our purpose was a
[6] screening tool to see if there was a problem, to
[7] see if there was a change since the previous year,
[8] and if there was, we would ship that person out for
[9] further testing.
[10] Q: So in the ordinary course of things, the
[11] only lung function tests that were performed were
[12] performed by Grace employees; right?
[13] MR. MURPHY: Objection to the form.
[14] A: As a screening, yes. If there was, in
[15] fact, any indication of a problem of any kind, then
[16] the person was sent to a physician for further
[17] testing.
[18] Q: What if the operator – the person
[19] administering the test didn't find anything wrong
[20] or reported that there was nothing wrong? What
[21] would happen then?
[22] A: Then that information was given to the
[23] employee. By the very nature of the test –
[24] Q: What if the test –

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[1] A: Excuse me.
[2] By the very nature of the test, it
[3] was fail-safe. If, in fact, the test was not
[4] properly done, if there was a problem, it would
[5] indicate low volume of the amount of air out in one
[6] second, in which case the person would get to go to
[7] a doctor. There was no way to make it come out
[8] higher than normal.
[9] MR. MURPHY: Excuse me.
[10] (Discussion off the record).
[11] EXAMINATION BY MR. LEWIS:
[12] Q: Who interpreted the tests?
[13] A: The tests were run on a machine that made
[14] graphs. And you simply used a measuring device
[15] that came with it which told you what the numbers
[16] were.
[17] Q: Who calibrated the machine?
[18] A: We did. The calibrators came with it and
[19] we calibrated it because we did it up on the hill
[20] and you have different altitudes than you would and
[21] a different temperature than you would at sea
[22] level.
[23] Q: Who trained you to calibrate it?
[24] A: The supplier, the manufacturer.

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[1] Q: Did they send somebody out to teach
[2] you?
[3] A: I believe, yes, they did send somebody
[4] out. Then one time we went to their place. I
[5] don't remember where.
[6] Q: Who else besides yourself gave these lung
[7] function tests?
[8] A: Tom Hamilton, who is an industrial
[9] hygienist, and Paul Connor, who is also an
[10] industrial hygienist.
[11] Q: Are they still at W.R. Grace?
[12] A: No.
[13] Q: Where are they?
[14] A: Tom Hamilton runs a consulting company in
[15] Massachusetts and Paul Connor is the director of
[16] health and safety for Shipley Chemical Company.
[17] Q: In the 1970s, '75, '76, '77, you were
[18] with W.R. Grace?
[19] A: Yes.
[20] Q: Was the thrust of the solution of the
[21] so-called tremolite problem aimed at removing the
[22] tremolite from the product for the consumers or
[23] directed toward safety of Grace employees
[24] processing the vermiculite?

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[1] MR. MURPHY: Objection. When did you
[2] stop beating your wife? Objection to the form of
[3] the question.
[4] A: Both.
[5] Q: You can answer.
[6] MR. LEWIS: I like the form of the
[7] question and no judge in Montana is going to
[8] sustain that objection.
[9] A: Both.
[10] Q: Was there any written criticism by W.R.
[11] Grace employees that there were not enough efforts
[12] being made on behalf of Grace employees and that
[13] there was too much effort directed toward cleaning
[14] up the product for the consumer?
[15] A: I don't know that to be the case. There
[16] could have been, but I don't know yes or no. I
[17] don't recall seeing such criticism, and we were
[18] doing what we could in both areas.
[19] Q: Have you testified in any trials?
[20] A: Yes.
[21] Q: What cases?
[22] A: In property damage cases.
[23] Q: Do you recall the case or cases that
[24] you've testified in?

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[1] A: MDU; that was Montana-Dakota Utilities in
[2] Bismarck. I testified in one in Springfield,
[3] Illinois. I don't remember what the name of that
[4] was. One in Minnesota, and one in West Virginia.
[5] Q: All of them were property damage cases?
[6] A: Yes.
[7] Q: You've given depositions in cases?
[8] A: Yes, I have.
[9] Q: In those cases, the four cases you talked
[10] about, did you actually go to trial and testify in
[11] those cases?
[12] A: Yes.
[13] Q: Have you ever testified in a personal
[14] injury case involving lung disease claimed to have
[15] been caused by asbestos exposure?
[16] A: I've been deposed once or twice, but I've
[17] never testified at a trial.
[18] Q: Have you ever testified at trial words to
[19] the effect that the exposures at the Libby facility
[20] were so great as to be many times greater than
[21] anything that could result in a property damage
[22] exposure-type case?
[23] A: I would say that I don't remember if I've
[24] testified to that or not, but the exposure levels

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[1] in the fifties and perhaps some of the early
[2] sixties were such that that, in fact, would be the
[3] case.
[4] Q: And, in fact, in the seventies and
[5] eighties there were still higher levels of exposure
[6] to asbestos at the Libby facility than one would
[7] ordinarily expect in a property damage-type case
[8] where there is exposure to asbestos in a
[9] constructed product? Is that true?
[10] A: There were levels that were within the
[11] permissible exposure limits indicated by the United
[12] States government, but, yes, they were higher than
[13] one would expect in a building environment.
[14] Q: Are you talking about threshold limit
[15] values there?
[16] A: No; permissible exposure limits.
[17] Q: Explain the difference between threshold
[18] limit value and permissible exposure limit.
[19] A: Threshold limit value was a number, an
[20] exposure level established by the American
[21] Conference of Governmental Industrial Hygienists
[22] and was commonly used before there was an OSHA or
[23] other organization. In 1972 with – in '70 the
[24] OSHA act was signed and in '71 they started to

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[1] promulgate standards. In their situation, it
[2] wasn't called threshold limit value. It was called
[3] permissible exposure limit, because it had to be a
[4] number against which they could enforce the law.
[5] So they changed the term for their usage.
[6] Q: Are you aware of any attempts by W.R.
[7] Grace to resist lowering the permissible -
[8] A: Permissible exposure limit.
[9] Q: Are you aware of any attempts by W.R.
[10] Grace or any of its personnel to discourage any
[11] reduction in the permissible exposure limits
[12] imposed by OSHA?
[13] A: I don't know of any significant effort at
[14] any time. Someone may have written a letter at
[15] some time, but I don't know that to be the case.
[16] But that would have been in the eighties or during
[17] that time frame - much later.
[18] Q: Are you aware of any letters written by
[19] any W.R. Grace personnel where they were attempting
[20] to convince OSHA that asbestos was not a
[21] carcinogen?
[22] A: I know of no such letters.
[23] Q: Not in the eighties?
[24] A: No.

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[1] Q: Not in the seventies?
[2] A: No.
[3] Q: Do you recall giving a deposition in the
[4] Corporation of Mercer University versus National
[5] Gypsum Company, et al. case in the Macon Division
[6] of the Middle District - United States District
[7] Court for the Middle District of Georgia?
[8] A: I may have. I think that was a long.
[9] long time ago, that case, and I don't recall. I
[10] may well have.
[11] Q: The deposition was given on January 17,
[12] 1986?
[13] A: That may well be, yes.
[14] Q: Do you recall testifying that the Libby,
[15] Montana facility was an area where there was an
[16] existing problem with high level exposures to
[17] asbestos at the time of that deposition?
[18] A: I don't recall precisely what I said.
[19] I'm somewhat confused by the time frame of what
[20] you're referring to.
[21] Q: You don't recall that?
[22] A: I don't know whether you were quoting
[23] directly or just what was said. If you let me look
[24] at it, I would be happy to verify it.

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[1] Q: Is there any absolute number of exposures
[2] or amounts of exposures that you would consider
[3] safe or unsafe when it comes to asbestos?
[4] MR. MURPHY: I take it you're not
[5] going to show him the deposition to see whether he
[6] can see whether that is in context?
[7] MR. LEWIS: No, I'm not.
[8] MR. MURPHY: That's a bit unfair.
[9] Go ahead.
[10] A: Your question is so open, I can't
[11] understand what you're asking. Are you asking
[12] whether I think there is a safe level of exposure
[13] to asbestos?
[14] Q: I'm asking you, is there any absolutely
[15] safe level of exposure to asbestos above zero
[16] exposures?
[17] MR. MURPHY: Objection to the form.
[18] Vague and ambiguous.
[19] A: I think there are a couple of things
[20] here. What is safe? A hundred percent guaranteed?
[21] I believe that the standard wisdom has been, and I
[22] believe I think this is true, that we haven't been
[23] able to determine precisely what the safe level to
[24] asbestos is. I believe that perhaps somewhere

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[1] between 2 and 0.2 is a level that is protective.
[2] However, we haven't had exposures at that level for
[3] long enough to determine that.
[4] Q: Has W.R. Grace removed asbestos or
[5] conducted asbestos abatement in its own facilities
[6] at any time?
[7] A: We have removed asbestos from some
[8] facilities where specific conditions indicated that
[9] that was necessary. We also have many facilities
[10] with asbestos-containing material that we haven't
[11] removed.
[12] Q: Have you sold facilities to any other
[13] entity that had asbestos in them without conducting
[14] asbestos abatement in the last ten years?
[15] MR. MURPHY: Could I hear that again,
[16] please?
[17] (Whereupon, the court reporter read a
[18] portion of the record)
[19] MR. LEWIS: I'll rephrase the
[20] question.
[21] Q: Have you sold any properties - by you, I
[22] mean, W.R. Grace; has W.R. Grace sold any
[23] properties with asbestos in the properties to any
[24] other entity without conducting asbestos abatement

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[1] on those properties within the last ten years?
[2] A: Yes.
[3] Q: What companies have you sold properties
[4] to that had asbestos in the buildings?
[5] A: We sold our Hampshire Chemical Division,
[6] which have all sorts of asbestos-containing
[7] material in them. We've sold other facilities,
[8] manufacturing facilities, that have
[9] asbestos-containing materials.
[10] Q: Have you represented that you'll
[11] retain liability for asbestos exposure in those
[12] buildings?
[13] MR. MURPHY: Objection.
[14] Q: If you know?
[15] A: I don't know.
[16] Q: Now, when W.R. Grace conducts asbestos
[17] abatement in its own facilities, may we assume that
[18] the individuals, whether they be employees or
[19] contracted persons, wear appropriate protective
[20] equipment during the abatement process?
[21] A: We do whatever is appropriate to comply
[22] with rules and regulations and laws.
[23] Q: Have you observed asbestos abatement
[24] being done at any W.R. Grace facilities?

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[1] A: Yes.
[2] Q: Would you describe the type of protective
[3] equipment worn by those individuals doing the
[4] abatement?
[5] A: It all depends on the job they're doing.
[6] Q: Just give me an example. Which job?
[7] A: For instance, if you're removing pipe
[8] wrap, it's simply a matter of respiratory
[9] protection and a bag device that goes around the
[10] pipe wrap you're removing and not much else is
[11] needed.
[12] If you're doing significant removals
[13] you may wear a Tyvec suit or a respirator or
[14] provide a plastic enclosure. It depends what the
[15] task is and what you're doing.
[16] Q: During the abatement process the
[17] individual performing the abatement is isolated
[18] from any asbestos fibers; is that true?
[19] A: An attempt – well, the hope is to
[20] minimize the exposure to asbestos fibers, and the
[21] way it is being done is because you can't use
[22] ventilation or other things that you use in plants
[23] so you have to use work practices which include
[24] those kind of steps.

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[1] Q: Why can't you use ventilation?
[2] A: Because it's a temporary short-term job
[3] and by the time you built the ventilation and did
[4] what you had to do you could do the job ten times.
[5] So you use personal protective equipment and other
[6] means, work practices, perhaps mini-enclosures so
[7] you can do it efficiently, quickly and get it done.
[8] In a factory or mill or that kind of thing where
[9] you're doing a job again and again and again, you
[10] can then ventilate and do other techniques for
[11] minimizing exposures.
[12] Q: I want to get back to the situation where
[13] you're removing wrapping from pipe. You wrap the
[14] pipe with plastic before you disturb the wrapping?
[15] A: There is a plastic bag device. It's like
[16] a glove box that goes around a section of pipe and
[17] you use that for short sections of pipe.
[18] Q: And the worker also wears a mask; right?
[19] A: A respirator, yes.
[20] Q: Now, if you couldn't isolate that pipe,
[21] the wrapping on the pipe, then you're saying you
[22] would wear a suit?
[23] A: It depends how much pipe there is to do
[24] and what the situation is. You could – if it's a

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[1] minimal amount you could wet it and wear a
[2] respirator and wear gloves and that kind of thing.
[3] As long as you catch the material appropriately,
[4] that's fine.
[5] Q: Would the concentrations of asbestos in
[6] the abatement efforts you've observed be as high as
[7] the concentrations in the old dry mill at W.R.
[8] Grace?
[9] A: Oh, no. Well – are you talking about
[10] what the person is exposed to with the respirator
[11] and that kind of thing?
[12] Q: Yes.
[13] A: No, not in the same – a couple of
[14] magnitudes of difference.
[15] Q: At the old dry mill it was much worse?
[16] A: It was much higher, yes.
[17] Q: Did they wear respirators in the old dry
[18] mill?
[19] A: During my time they were supposed to.
[20] That was mandatory. No, I can't guarantee that
[21] everybody wore them when the supervisor wasn't
[22] around. Yes, it was mandatory that you wear a
[23] respirator in that facility.
[24] Q: Do you know whether the respirators

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[1] worked?
[2] A: They were approved by the Bureau of Mines
[3] for exposures like the one they were in. And that
[4] was what one used as the seal of approval, if you
[5] will.
[6] Q: Do you know if the respirators would
[7] function properly for an eight-hour shift?
[8] A: It all depends upon the amount of dust in
[9] the air. If they wouldn't, the filters should have
[10] been changed or new respirators issued for the
[11] appropriate time.
[12] Q: Was there a problem with – a known
[13] problem at the Libby facility with workers not, for
[14] whatever reason, not wearing their respirators
[15] during their work periods?
[16] A: I think that there are varying degrees of
[17] problems in any facility where you wear respirators
[18] and enforcing that. It's not easy to enforce and
[19] it requires work. It was worked on at Libby but
[20] once again I can't guarantee that everybody
[21] observed that a hundred percent of the time.
[22] Q: Did you folks at Grace conduct medical
[23] surveillance of the workers at Libby?
[24] MR. MURPHY: Objection.

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[1] A: Yes.
[2] Q: How was that done?
[3] A: There were three things that were done.
[4] Early on we did chest x-rays annually. We then
[5] added pulmonary function testing and finally annual
[6] questionnaires concerning their status of health.
[7] And we integrated those and had them looked at by a
[8] physician.
[9] Q: You had them looked at by a physician?
[10] A: Yes, we did.
[11] Q: The x-rays, that is?
[12] A: Yes.
[13] Q: And you selected the physician to look at
[14] the x-rays?
[15] A: We had – originally it was done by a
[16] radiologist in Kalispell, who was the radiologist
[17] at the Libby Hospital where the x-rays were taken,
[18] and then we added a B-reader, so that they were
[19] read by two people.
[20] Q: You differentiated from time to time
[21] during this deposition concerning what you knew
[22] about the danger of asbestos as a cause of
[23] interstitial fibrosis or asbestos –
[24] differentiating between when you learned that

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[1] asbestos might be a carcinogen. Do you recall
[2] generally making that differentiation?
[3] A: Yes, I did.
[4] Q: I think you did testify at least by the
[5] mid-seventies you, personally, and W.R. Grace
[6] recognized that there was a cause and effect
[7] relationship between asbestos exposure and higher
[8] incidence of cancer in asbestos workers. Is that
[9] correct?
[10] A: We had begun to gather death certificates
[11] in the early seventies for employees who died –
[12] ex-employees who died, and Libby, being a small
[13] town, if someone worked there or lived there for a
[14] while, there were always relatives and people who
[15] knew, so we would learn when people died and we
[16] would get the death certificates for those people.
[17] Until about 1977, there was no
[18] indication that there was an excess or any more
[19] lung cancer deaths than one would expect in a
[20] normal population, especially a population where
[21] seventy-eight percent of the folks are heavy
[22] smokers. So we kept following that. In the late
[23] seventies we started to see an increase in the
[24] number of lung cancer deaths proportionately. We

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[1] then talked to the people at Harvard about an
[2] epidemiology study.
[3] Q: Did you consider that lung cancer was
[4] virtually always fatal, making that a more serious
[5] health consideration than asbestosis?
[6] MR. MURPHY: Objection to the form.
[7] A: I think that lung cancer is a disease
[8] that is almost always, but not totally always,
[9] fatal, but it is a fatal disease, and certainly
[10] that is a concern, as is any cancer, because we
[11] don't really have controls or cures or anything, as
[12] we don't have for asbestosis either, as such.
[13] Q: Did you consider mesothelioma as a form
[14] of tumor or cancer that was more closely connected
[15] or more closely identified with asbestos exposure
[16] than other forms of lung cancer?
[17] A: I think that – there are a couple of
[18] distinctions. Mesothelioma is a rather specific
[19] lung cancer. In other lung cancers you can have
[20] small cell, non-small cell, oat cell and different
[21] varieties, so that because of the specificity of
[22] the term, mesothelioma, that is more closely
[23] connected with asbestos exposure, yes.
[24] Q: That's because the tumors in mesothelioma

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[1] are in the pleura; is that correct?
[2] A: Yes, between the lung and the pleural
[3] sack.
[4] Q: Which is the area where asbestos disease
[5] is quite common – other forms of asbestos disease?
[6] MR. MURPHY: Objection to the form.
[7] A: You can have pleural fibrosis and you can
[8] have plaque. So there are other manifestations of
[9] asbestos exposure in the pleura, yes.
[10] Q: How did you obtain the information
[11] concerning the higher incidence of cancer in Libby
[12] asbestos workers than one would expect in the
[13] normal population?
[14] A: We collected death certificates and
[15] analyzed the data on the death certificates.
[16] Q: Who did that?
[17] A: I did, and in '77, we had a few
[18] consultants look at that.
[19] Q: Did Earl Lovick ever provide you any
[20] information?
[21] A: Earl was the one who gathered the death
[22] certificates.
[23] Q: Are you aware of any studies that – with
[24] animals that indicate that tremolite causes

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[1] mesothelioma?
[2] A: There was a study that indicated in
[3] hamsters, when tremolite was injected into their
[4] pleural cavity, that they developed a mesothelioma.
[5] Q: And when were those studies done?
[6] A: I believe about '76, I don't recall
[7] precisely.
[8] Q: When did you learn of those studies
[9] demonstrating that tremolite would cause
[10] mesothelioma in hamsters?
[11] A: Shortly after the time that the studies
[12] were completed.
[13] Q: Did you or anybody else from W.R. Grace
[14] communicate in writing with the workers that you
[15] had learned that exposure to tremolite could cause
[16] mesothelioma in hamsters?
[17] MR. MURPHY: Objection to the form.
[18] A: I did not communicate with anybody in
[19] writing. I don't know if anybody did. I haven't
[20] seen anything in writing. I didn't communicate
[21] that with the people – to the people in the – the
[22] workers in Libby myself. I don't know if anybody
[23] did.
[24] Q: Did you communicate to the workers at

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[1] Libby that amphibole forms of asbestos like
[2] tremolite were more dangerous than chrysotile forms
[3] of asbestos?
[4] A: Well, I told you about the seventies –
[5] early seventies when we would report to the
[6] employees on their chest x-ray results on a
[7] one-on-one basis and we had some sessions with them
[8] concerning asbestos in general. It wasn't apparent
[9] in those days that there was any significant
[10] difference between tremolite and chrysotile. In
[11] fact, the only information we had based upon human
[12] populations and studies, which were very few, and
[13] our own experience in Libby was that while it
[14] appeared that chrysotile caused lung cancer and
[15] mesothelioma, we had no indication of that yet in
[16] Libby. But we were taking every step we could to
[17] reduce the exposures because it was prudent.
[18] Q: Have you ever testified that amphiboles
[19] are more dangerous than chrysotile?
[20] A: I think I may have, but that was data
[21] that was learned later.
[22] Q: So you state that you didn't have that
[23] data in the early seventies?
[24] A: What I'm saying is the only amphibole

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[1] that was characterized significantly then was
[2] crocidolite and crocidolite appeared to be more
[3] dangerous than chrysotile. As far as the other
[4] amphiboles at that time, that wasn't clear.
[5] Q: In any event, later studies indicated
[6] that tremolite, like crocidolite, is similar with
[7] respect to causing mesothelioma; is that right?
[8] MR. MURPHY: Would you read that
[9] back, please.
[10] (Whereupon, the court reporter read a
[11] portion of the record).
[12] A: I think the study done by the McDonalds
[13] and NIOSH at Libby confirmed what we began to
[14] suspect in 1977, '78, that tremolite caused lung
[15] cancer and, in fact, at the onset of that study in
[16] 1981 or early '82, we learned of the first
[17] mesothelioma that we learned about. Consequently,
[18] we discovered mesotheliomas which happened
[19] subsequent to the early eighties and that confirmed
[20] that, in fact, tremolite would cause mesothelioma.
[21] Q: You don't know of any other mesothelioma
[22] that occurred before the 1980s?
[23] A: The first –
[24] Q: – with Libby W.R. Grace asbestos

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[1] workers?
[2] A: The first mesothelioma that we learned
[3] about was in 1981 or 1982 when we were meeting with
[4] the physicians in Libby to talk about the McDonald
[5] study and how they could participate and we
[6] commented that we hadn't seen any mesothelioma.
[7] And at that time one of the local Libby physicians
[8] said, gee, I heard of a fellow who died in
[9] Kalispell, a mesothelioma, and I believe he might
[10] have worked for you, and that was the first case we
[11] ever found.
[12] Q: And subsequently have there been a number
[13] of other mesotheliomas that have been identified?
[14] A: I think there have been four or five.
[15] Q: Were you aware of the information
[16] compiled by Mr. Lovick in 1959 concerning lung
[17] disease and Zonolite workers?
[18] A: I was aware of information compiled by
[19] Earl Lovick. I'm not sure to what you refer.
[20] Q: In 1959 at the request of management he
[21] compiled, I guess it was Mr. Bleich – he compiled
[22] some information and he said there were 130 persons
[23] examined. Forty-eight had abnormal chest x-rays,
[24] including eight pleural thickening. Three defects

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[1] of the diaphragm. Twenty-six with interstitial
[2] fibrosis. One with a metallic object. Three with
[3] calcified densities. Seven – I can't tell if that
[4] is seven or one. In one place it says eight and
[5] another place it says seven with pneumoconiosis or
[6] possible asbestos. There were some other things –
[7] eleven with emphysema, and emphysema is not related
[8] to asbestos exposure; right?
[9] A: Yes.
[10] Q: That's obstructive as opposed to
[11] restrictive disease?
[12] A: Generally speaking, yes.
[13] Q: Then one malignant lesion.
[14] Were you aware of those – that data
[15] compiled in 1959 within a few months after coming
[16] to work for W.R. Grace?
[17] A: Except for the malignant lesion was not a
[18] malignant lesion.
[19] Q: How did you determine that?
[20] A: Because I asked about it, and –
[21] obviously when you get that kind of report on a
[22] chest x-ray, the person is re-examined immediately
[23] and it proved to be nothing.
[24] Q: Did you learn whether or not this

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[1] 130-person sampling was done scientifically or not?
[2] Did you inquire?
[3] A: It was my belief that almost everybody
[4] that worked there was involved. So it was – as
[5] far as selection of the cohort, it was virtually a
[6] hundred percent.
[7] Q: Have you talked to Mr. Lovick about that
[8] at any time?
[9] MR. MURPHY: About the study?
[10] MR. LEWIS: About this study.
[11] A: I'm sure I have, yes.
[12] Q: Were you aware that Mr. Lovick only
[13] checked for individuals within a certain
[14] circumference of Libby, Montana when he compiled
[15] those numbers?
[16] A: I think you're wrong. I don't think
[17] you're talking about – we're talking about
[18] something else.
[19] Q: Your understanding is that all 130 people
[20] working at the Libby facility in 1959 were checked?
[21] A: Virtually all the people at Libby at that
[22] time – employed at Libby were checked. I don't
[23] know about the office people downtown. I don't
[24] even know if there was a downtown office. But

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[1] virtually all of them were checked.
[2] Q: I'm going to hand you a document prepared
[3] on March 29, 1966 by John F. Murphy. I would like
[4] you to just review that briefly and I'll ask you a
[5] few questions (handing).
[6] A: (Witness peruses document).
[7] Q: Have you seen that document before today?
[8] A: I have seen this document, yes. I
[9] haven't had a chance to review it all.
[10] Q: I didn't want you to review it all. If
[11] you hadn't seen it, I wasn't going to ask you
[12] questions.
[13] A: I've seen it in litigation. I don't
[14] recall that I saw it before that.
[15] Just a clarification, before I said
[16] to you that John F. Murphy was the chief financial
[17] officer. There were two John F. Murphys. I
[18] believe this John F. Murphy was the chief engineer
[19] for Dewey & Almy before it split up, and Peter
[20] Kostic worked for him. Usually his name is J.F.
[21] Murphy, Jr., and John F. Murphy referred to the
[22] financial guy, but this is the engineering John F.
[23] Murphy, as was that other document that you asked
[24] me about a couple of hours ago. I don't know that

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[1] it makes any difference, but just to clarify that.
[2] (Witness peruses document).
[3] I've skimmed it.
[4] Q: I'm not going to ask very many detailed
[5] questions about it.
[6] Just generally does this seem to be a
[7] chronological summary of various correspondence
[8] concerning asbestos-related or claimed
[9] asbestos-related disease of employees of W.R.
[10] Grace?
[11] A: I think it refers to some disease claims
[12] as well as information about exposure levels,
[13] inspections, and a study that Maryland Casualty did
[14] for Grace based upon the x-rays and that kind of
[15] thing. It's a variety of documents all pertaining
[16] to Libby, in essence.
[17] Q: Do you have any knowledge of why this
[18] summary was prepared by Mr. Kostic?
[19] A: I think he refers to on the first page,
[20] that Jack-somebody asked him to do this.
[21] Q: Jack Stover?
[22] A: Jack Stover. I knew Jack Stover and he
[23] was a financial analyst so I don't know why in the
[24] world he asked Peter to do this, but Peter did it,

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[1] and sent it to John Murphy.
[2] Now, I just - I just don't
[3] understand other than a talking document, a
[4] document from which to base discussions, why it was
[5] done.
[6] Q: Do you know about the elaborate studies
[7] and tests recommended by Dr. Spicer he refers to in
[8] the letter?
[9] A: I believe that Spicer made some
[10] recommendations but I don't know that I would
[11] characterize them as elaborate. I think there were
[12] ongoing chest x-rays and reviews of the Libby data,
[13] but I don't remember that Spicer recommended
[14] anything that we didn't do. I don't recall
[15] precisely -
[16] Q: I just used the word elaborate because
[17] that's the word Mr. Kostic used.
[18] A: I don't recall specifically the Spicer
[19] document but I don't think there was anything there
[20] that we didn't do.
[21] Q: Did this summary tend to document or
[22] provide early documentation of a problem with
[23] asbestos exposure in the workplace at the facility
[24] in Libby?

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[1] A: I think what this document was saying
[2] was, here is a history of the situation in Libby
[3] and we still may have some significant exposures
[4] and problems which need attention.
[5] Q: By exposures, what do you mean?
[6] A: That in some areas the levels might be
[7] too high - above the TLV at the time and that work
[8] needed to be done at Libby.
[9] Q: It acknowledges that lung diseases can be
[10] caused by asbestos; correct?
[11] A: I don't think there was any question of
[12] that. It was the late sixties. It doesn't say
[13] what lung diseases, but it certainly indicates that
[14] lung diseases can be caused by asbestos.
[15] Q: Do you know if this information was
[16] provided to employees and their families?
[17] A: I don't think the purpose of the document
[18] was to provide information for employees and
[19] families. I think it was for management people as
[20] a discussion document.
[21] Q: Was there any reason why it couldn't have
[22] been disclosed to employees and their families?
[23] A: I don't know that there would have been
[24] any value in disclosing it. The -

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[1] Q: Are you - go ahead.
[2] A: The union at Libby, the health and safety
[3] committee was aware of the concerns and discussed
[4] those concerns frequently and it was just a matter
[5] of galvanizing appropriate people and resources to
[6] do what had to be done, and eventually that was
[7] done with a new mill.
[8] Q: You knew for a fact that in 1966 when
[9] this document was prepared by Mr. Kostic that the
[10] union official knew about the nature and extent of
[11] the danger or hazard associated with asbestos
[12] exposure at that mill?
[13] A: I believe that the union officials were
[14] informed of things and the health and safety
[15] committee discussed concerns about dust exposure
[16] and were given copies of the documents when the
[17] state and other people came in - they saw those
[18] documents.
[19] Q: What union officials?
[20] A: The union officials at the Libby
[21] facility, the health and safety committee, and I
[22] guess the shop steward, the president and what have
[23] you.
[24] Q: Do you think that Libby management

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[1] fulfilled its duty to its employees by informing
[2] union officials of the problem? Was that all that
[3] was required; to bring the problem home to the
[4] employees in your opinion?
[5] **MR. MURPHY:** Objection.
[6] Argumentative.
[7] **A:** It all depends what time frame you're
[8] talking about. Certainly, that was the
[9] communication channel that the union preferred.
[10] And in those times the standard communication. You
[11] didn't go around the union officials. You went
[12] through the union officials.
[13] **Q:** On matters of work performance –
[14] **A:** It went through the union official with
[15] anything to do with the workers.
[16] **Q:** Really?
[17] **A:** Basically, yes. And that's why there was
[18] a health and safety committee, also, to participate
[19] with management in the discussions and what have
[20] you.
[21] **Q:** Who was on the health and safety
[22] committee in 1966 when that document was
[23] originated?
[24] **A:** I don't know precisely.

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[1] **Q:** When you were there, who were the union
[2] leaders? What were their names?
[3] **A:** Good grief. I know there was Bob Beagle
[4] at one point.
[5] **Q:** How do you spell his last name?
[6] **A:** B-e-a-g-l-e, I believe. And I think
[7] Shrewsberry at one point was a union official, but
[8] I don't recall when. That was Hal Shrewsberry, I
[9] think – the father.
[10] **Q:** Have you ever heard of right-to-know
[11] laws?
[12] **A:** In the past ten years, yes, I've heard of
[13] those – that term.
[14] **Q:** What are right-to-know laws?
[15] **A:** The right-to-know laws are laws that say
[16] you must provide certain information to people –
[17] workers or customers concerning certain materials
[18] and certain situations.
[19] **Q:** Certain toxic substances?
[20] **A:** In some cases, yes. There are
[21] right-to-know laws about a lot of things.
[22] **Q:** Did right-to-know laws trigger any
[23] obligations on W.R. Grace management to contact
[24] employees directly concerning the toxicity of the

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[1] workplace or the hazards in the workplace related
[2] to asbestos exposure?
[3] **A:** There were no right-to-know laws until
[4] the early mid-eighties, to the best of my
[5] knowledge. However, it was always my policy and
[6] the policy of Earl Lovick and the others to talk
[7] openly and freely with the employees from 1971 on
[8] when I went there, concerning any of these issues.
[9] **Q:** Was it ever reported to you by any
[10] management level or industrial hygiene level
[11] employee that, in fact, Earl Lovick had not been
[12] candid with the employees and suggested that
[13] exposure to vermiculite dust or the industrial dust
[14] in this workplace was completely harmless and not
[15] to worry about it?
[16] **A:** It was never suggested to me that Earl
[17] ever said that. I don't believe during my
[18] twenty-five years with Grace – or, well, while he
[19] was still there, before he retired, that Earl said
[20] anything like that. I just don't know that to be
[21] the case. I know that it was always my policy and
[22] it was Oliverio's policy when somebody asked a
[23] question, you tell them the truth. If there is
[24] something they should know, we'll tell them.

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[1] **Q:** What if they didn't ask the question?
[2] **A:** If there was something important that
[3] they needed to know we would tell them.
[4] **Q:** And you can give me some specific names
[5] of people who you told about the nature and extent
[6] of harm that could or did result from asbestos
[7] exposure at the Libby facility?
[8] **A:** I can tell you – I don't remember
[9] whether we started it in '73 or '74, but every
[10] year, Earl Lovick and I spoke to every employee and
[11] handed them a copy of their chest x-ray and
[12] discussed the situation at Libby with respect to
[13] tremolite, dust, exposure, smoking, et cetera, as
[14] well as having training classes conducted by people
[15] internally and the Bureau of Mines.
[16] **Q:** I want to get this straight. You said
[17] that you and Earl Lovick together talked to every
[18] individual when you gave them their x-ray and
[19] explained to them the hazards of asbestos exposure
[20] in the mines? Is that what your testimony is?
[21] **A:** Not Earl Lovick and I together. Earl did
[22] some and I did some. And I'm telling you what I
[23] did was say, look, here is your chest x-ray. Here
[24] is what it says. You understand – as I said

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[1] before, we had a problem with heavy smoking.
[2] Smoking isn't helping. You have to wear your
[3] respirator when you're in dust. And what I believe
[4] I did was say, I will send you a copy or give you a
[5] copy, but I won't give you this copy, because we
[6] kept those. And we gave every employee the word on
[7] their x-rays annually.
[8] Q: That's not the question I'm asking.
[9] Let's assume that you've got the x-rays – I don't
[10] care if the x-ray is negative or positive. Is it
[11] your testimony under oath that when you gave – if
[12] you gave the x-ray result out, you told the
[13] employee at that time that the asbestos – the dust
[14] that you're inhaling in this workplace is
[15] dangerous?
[16] A: Yes.
[17] Q: You told them that?
[18] A: Yes.
[19] Q: And you told them that it could cause
[20] cancer each time in those x-rays, you told them
[21] that?
[22] A: Once again, I told them that asbestos
[23] exposure in general is known to cause cancer. We
[24] have no indication at Libby that there is an excess

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[1] of cancer until the time when we had an indication.
[2] It changed as the situation changed.
[3] Q: Did you tell them that asbestos exposure
[4] can cause mesothelioma?
[5] A: I told them that. I don't know whether I
[6] used the term mesothelioma or a pleural cancer
[7] because generally speaking these were lay people
[8] and the term mesothelioma didn't mean much. But
[9] caused another incurable cancer, and I told them
[10] that lung cancer is almost always fatal and not
[11] something you want to mess with. Consequently, we
[12] have to take appropriate precautions.
[13] Until the late seventies I told them
[14] we had not seen any significant increase in lung
[15] cancer at Libby, which was the truth.
[16] Q: Did you tell them that Mr. Wake told
[17] Mr. Bleich way back in the sixties that there were
[18] studies that demonstrated or indicated that
[19] asbestos exposure caused mesothelioma? Did you
[20] tell them that?
[21] A: I didn't – I don't believe I mentioned
[22] Benjamin Wake.
[23] Q: Did you conduct any pre-employment
[24] interviews with any of the employees?

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[1] A: Did I?
[2] Q: Yes.
[3] A: Well, obviously employees were
[4] interviewed pre-employment and filled out an
[5] application and interviewed.
[6] Q: By whom?
[7] A: By whoever was doing the hiring – Lovick
[8] and the person that they would be working for.
[9] Q: I've reviewed thousands of documents. I
[10] can't find a single document that – or writing of
[11] any kind that would document the fact that these
[12] men were told before they were hired about the
[13] dangers of exposure to the dust at that plant. Can
[14] you point to a single document that would show that
[15] they were told that?
[16] A: I don't know there was an employee
[17] orientation in which this was explained to them. I
[18] don't know what documents exist. This was in my
[19] time. That may have started in '73 or so, but I
[20] know that that was done with employees.
[21] Q: You witnessed pre-employment –
[22] A: I –
[23] Q: Let me finish.
[24] You're testifying under oath that you

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[1] witnessed pre-employment interviews or orientation
[2] during which the men were told that this workplace
[3] involves exposure to asbestos that could be
[4] dangerous to your health?
[5] MR. MURPHY: Objection to the form.
[6] It mischaracterizes his testimony and in your
[7] question just now you included both pre-employment
[8] and orientation. These are two different time
[9] periods in there.
[10] Q: I was assuming that the orientation
[11] occurred before the hiring. Is that wrong?
[12] A: No. You wouldn't orient somebody until
[13] after they were hired.
[14] MR. LEWIS: I appreciate the
[15] objection. I'll break it down.
[16] Q: Is it your testimony that the men – that
[17] you know for a fact, you observed men being told
[18] before they were hired that there was asbestos
[19] exposure in this workplace that was, in fact,
[20] harmful to their health?
[21] A: I don't know about pre-employment.
[22] Q: All right.
[23] Now after employment, you say there
[24] was orientation?

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[1] A: Yes.
[2] Q: And when did that orientation occur?
[3] A: I think it occurred during the first week
[4] or two weeks of employment.
[5] Q: And would that orientation have occurred
[6] at a time when the old dry mill was still in
[7] operation?
[8] A: It would have occurred during the time
[9] that it was tailing off, but yes, I believe it was
[10] still in operation.
[11] Q: And is it your testimony that you
[12] observed this orientation being given?
[13] A: I observed an orientation from time to
[14] time. Never in its entirety, but would pop in and
[15] that kind of thing.
[16] Q: Now, you said that there was very little
[17] turnover at this plant. How frequently did they
[18] hire individuals?
[19] A: Well, they hired through the early
[20] seventies with some frequency because they were
[21] building. There was a lot of construction and
[22] other work going on. After that there was very
[23] infrequent hiring. I guess if there was an
[24] orientation, it would sometimes be one on one

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[1] because it was specific jobs that they needed
[2] somebody before – a welder or something. So you
[3] didn't have an influx of employees. You had a
[4] paring down gradually to the people with seniority
[5] who had been there for many years.
[6] Q: In any event, you observed some
[7] orientation on more than one occasion after
[8] employees were hired; right?
[9] A: Yes.
[10] Q: Who conducted that orientation?
[11] A: I think Lovick did at times, and also the
[12] local safety guy; whether that was Randy Geiger or
[13] Bill Melcher or some of the other folks.
[14] Q: You observed Mr. Lovick or Mr. Geiger
[15] tell these men that by working in this facility,
[16] they would be exposed to asbestos fibers that could
[17] or would be harmful to their health?
[18] A: I believe, and this is a long time ago,
[19] but I believe what they were told was that there
[20] was a material present that had a potential for
[21] harming your lungs and that there were certain
[22] rules concerning respiratory protection and other
[23] things that had to be followed to minimize the
[24] potential.

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[1] MR. MURPHY: Would this be a good
[2] time for a break?
[3] (Discussion off the record).
[4] (Whereupon, a brief recess was
[5] taken).
[6] EXAMINATION BY MR. LEWIS:
[7] Q: Do you know a man named H.C. Duecker,
[8] D-u-e-c-k-e-r?
[9] A: Yes, Duke Duecker.
[10] Q: Where is he now?
[11] A: He's retired.
[12] Q: Do you know when he retired?
[13] A: About four years ago, I believe.
[14] Q: What was his position with the company?
[15] A: He was director of research for the
[16] Construction Products Division.
[17] Q: Do you know O.M. Favorito,
[18] F-a-v-o-r-i-t-o?
[19] A: Yes.
[20] Q: And what was his position with the
[21] company?
[22] A: He is a counsel.
[23] Q: Was he employed counsel or –
[24] A: Employed counsel.

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[1] Q: Where is his office?
[2] A: In Cambridge.
[3] Q: It appears that in 1976 he was retained
[4] to make an appeal of proposed OSHA asbestos
[5] standards. Were you aware of that?
[6] A: Favorito was employed by Grace full time.
[7] He wasn't just retained. I don't believe that we
[8] ever said anything about OSHA standards.
[9] Q: You recall I asked you earlier if you
[10] knew of any attempts by W.R. Grace to resist
[11] changes or to lessen the standard imposed by OSHA?
[12] Some questions about that?
[13] A: Yes.
[14] Q: You were not aware of that at that time?
[15] A: No. And I don't know that we ever did.
[16] Q: I have some documents here and I don't
[17] even know where I got them, but there is a document
[18] here I'll show you dated January 12, 1976.
[19] MR. LEWIS: And for purposes of
[20] identification, Counsel, it's from H.A. Brown to
[21] J.W. Wolter and H.C. Duecker. Subject: OSHA
[22] Asbestos Standard. It's got a list of routings to
[23] various people. And it has an attachment.
[24] Q: I'll just show that to you quickly here

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[1] and I don't think there is any need for you to read
[2] the whole thing. I'm not going to ask you any
[3] detailed questions except for one area (handing).
[4] A: (Witness peruses document).
[5] Okay. Why don't you ask the
[6] question?
[7] Q: Have you ever seen that document before?
[8] A: I don't recall seeing it at the time or
[9] in litigation, either. There was a copy to Kostic
[10] there. And I may have seen it, but I don't recall.
[11] Q: Do you recall whose handwriting is on the
[12] copies of those documents?
[13] A: It looks like there are several. I don't
[14] recall – the handwriting is not familiar to me.
[15] Q: There is like a signature or a name F.
[16] Swanson?
[17] A: Fred Swanson.
[18] Q: Do you know who he is?
[19] A: Fred Swanson was a technical person who
[20] developed the Libby process and then he – I think
[21] he might have come back to Cambridge for a short
[22] period of time and then he left the company.
[23] Q: Do you know where he is now?
[24] A: No.

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[1] Q: By a technical person who developed the
[2] process, do you mean developed – helped change the
[3] process to make it more efficient?
[4] A: No. He invented the process designed for
[5] the Libby mill.
[6] Q: The wet mill?
[7] A: Yes. He was a mining engineer, I
[8] believe.
[9] Q: It appears that there is proposed
[10] asbestos standard responsibility assignments and
[11] information to be provided. Do you see that?
[12] A: I didn't look at it.
[13] (Witness peruses document).
[14] Yes.
[15] Q: It appears that one of the things
[16] assigned to Mr. Duecker was to present necessary
[17] documentation to show that no information is
[18] available that establishes tremolite as a
[19] carcinogenic substance and, in fact, there is
[20] evidence to support that it is not. Did you see
[21] that there?
[22] A: I didn't look at it that carefully, but
[23] if you're reading it, I have no reason to believe
[24] that it's not there.

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[1] Q: But you were not aware that this was
[2] being done while you were employed by W.R. Grace?
[3] Is that your testimony?
[4] A: My testimony is that, in fact, I had no
[5] involvement nor did Peter Kostic in trying to
[6] change OSHA's mind about a standard or to affect
[7] that standard. In fact, OSHA withdrew that
[8] proposal and I don't – that's perhaps why I have
[9] no recollection of ever being – a letter being
[10] sent or anything.
[11] Q: Do you know if OSHA withdrew the proposal
[12] in response to this action by Mr. Favorito and W.R.
[13] Grace?
[14] A: I know OSHA did not withdraw – as far as
[15] asbestos went, we were such a small player, that
[16] our tremolite was such a small issue that it was
[17] inconsequential. The OSHA standard was basically
[18] aimed at chrysotile manufacturing.
[19] Q: What was the proposed OSHA standard that
[20] they were going to appeal here?
[21] A: I don't recall. It was the lowering of
[22] the PEL, but I don't recall what it was.
[23] Q: Was the PEL ultimately lowered after
[24] 1976?

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[1] A: The PEL was 2 from 1976 until – because
[2] it had been set at 2 in 1972. It was 5 from '72 to
[3] '76 and then they said we'll set it from '76 on at
[4] 2. And I believe there was discussion of 0.2 or
[5] 1 – not 0.1, but somewhere in that range was the
[6] proposed change, and it just died on the vine. It
[7] was withdrawn.
[8] Q: And what is it now?
[9] A: Now it is 0.1 for manufacturing, but
[10] since there is no manufacturing it's strictly a
[11] work practice standard.
[12] Q: A work practice standard; what does that
[13] mean?
[14] A: That means that they don't give a PEL, as
[15] such. They say if you're doing this kind of job,
[16] here is the way you do the job, and it's assumed
[17] based upon research that the exposure levels will
[18] be insignificant in doing the job that way.
[19] Q: They give you precise direction as to how
[20] to do the job?
[21] A: Precise is probably a little too loose.
[22] They give you directions, but it is sort of a –
[23] you have a chance to work within certain
[24] parameters.

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[1] Q: These are directions that are primarily
[2] associated with asbestos abatement?
[3] A: Abatement, working around
[4] asbestos-containing materials and that kind of
[5] thing.
[6] Q: If you had the Libby plant in operation
[7] now, would those standards be imposed on the Grace
[8] Libby plant?
[9] A: No, for one significant reason. Libby is
[10] subject to the Mine Health and Safety
[11] Administration and these are OSHA standards. The
[12] mine standards, if they were 0.2 or 0.1 would –
[13] Libby had gotten to the point where that wouldn't
[14] have been a problem.
[15] Q: And when did Libby achieve that point?
[16] A: I think Libby achieved that point
[17] sometime in the mid-eighties. While the standard
[18] was still 2, they got it down real low.
[19] Q: Now, let me ask you this. Do you know a
[20] man named Dan Schnetter?
[21] A: I knew a couple Schnetters. I'm not
[22] sure – there was the father and a son that worked
[23] at Libby and one of them was a wood carver, and he
[24] left and I remember he had a little shop on Route 2

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[1] where he sold his wood carvings. I think that was
[2] the son, and I think his father continued to work
[3] for us until he retired. But I think Dan was the
[4] son, and I just knew him faintly.
[5] Q: Did you ever give him any briefings or
[6] conduct any testing of him while he worked at W.R.
[7] Grace?
[8] A: I didn't – I haven't checked the
[9] records. I don't know.
[10] Q: Would you recognize him if you saw him?
[11] A: Probably not. I'm sure I would recognize
[12] a lot of these people – recognize their face if I
[13] saw them, but placing a name with the face would be
[14] difficult.
[15] Q: I asked you earlier about how many times
[16] you went out there every year and you thought
[17] ordinarily it was about four times a year, but
[18] sometimes you might not have got out there more
[19] than three times a year. How long would you stay
[20] out there each time you would go?
[21] A: Oh, a week or two. It's not an easy trip
[22] from here so you tried to maximize the time that
[23] you were there.
[24] Q: And during an ordinary time that you were

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[1] there, who would you spend most of your time with?
[2] A: Most of the time would be spent with
[3] Lovick, Randy Geiger, the fellow that was doing the
[4] sampling, some time with the manager; whether that
[5] was Oliverio or McCaig, and then the safety person,
[6] if it was Bill Melcher or whoever it was, and then
[7] maybe a third of the time out and around in the
[8] plant and in the mine – I shouldn't say plant –
[9] in the mine or the mill.
[10] Now, if, in fact, we were going there
[11] to do pulmonary function screening, then that would
[12] take most of the time and you would be up on the
[13] hill every day and there were three shifts, so you
[14] would be there morning, noon, and night.
[15] Q: Where would you do the pulmonary function
[16] testing on the hill?
[17] A: We would do it in a conference facility
[18] in the mill building or whenever – wherever it was
[19] convenient.
[20] Q: Did you prepare periodic reports for your
[21] supervisors concerning the asbestos exposure
[22] problem at the Libby facility?
[23] A: Periodic reports were prepared on
[24] exposure levels by the people doing the air

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[1] sampling out there. Those were circulated.
[2] Q: I understand that; but how about you, did
[3] you –
[4] A: I did a summary report of disease, et
[5] cetera, in about 1976.
[6] Q: 1976?
[7] A: Yes.
[8] Q: Who did you submit that to?
[9] A: Whoever – I don't remember whether it
[10] was Chip Wood or Harry Brown or whoever was in
[11] charge of Construction Products at that time – in
[12] charge of the Zonolite facility at that time.
[13] Q: You think it was '76 that you gave a
[14] report to someone above you, and you think it was
[15] either Chip Wood or who?
[16] A: Harry Brown. It wasn't someone above me.
[17] It was – it might have been even addressed to
[18] Oliverio. But I didn't work for Construction
[19] Products. I worked for the parent unit.
[20] Q: Who was your immediate supervisor then?
[21] A: My immediate supervisor was a fellow
[22] named Ralph Kulberg, who was vice president of
[23] industrial relations for the – at that time for
[24] the Industrial Chemicals Group, of which

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[1] Construction Products was one division.
[2] Q: Do you remember the contents generally of
[3] your report to whoever it was that you gave the
[4] report to in '76?
[5] A: It was a listing of disease – of – sort
[6] of a summary of chest x-ray results, a listing of
[7] people who appeared to have significant disease,
[8] and just my general impressions from the medical
[9] data.
[10] Q: Did you work with Mr. Kostic in preparing
[11] that report?
[12] A: No.
[13] Q: Did you work with Mr. Kostic very closely
[14] at all?
[15] A: Yes. We were good friends, as well as
[16] co-workers, but his area of interest was different
[17] than mine. He was more safety than health.
[18] Q: So you were more closely involved with
[19] the asbestos problem because that, for corporate
[20] purposes, was considered generally a health problem
[21] as opposed to a safety?
[22] A: My concern was asbestos issues. I
[23] concerned myself with asbestos issues.
[24] Q: After you came aboard, did Mr. Kostic

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[1] have much to do with that?
[2] A: Occasionally, but usually not much. I
[3] took the lead there.
[4] Q: I don't think I have a copy of that
[5] report. It's probably in those documents.
[6] A: You may be the only plaintiff's attorney
[7] in the country who doesn't.
[8] Q: I'm sure it's in those documents.
[9] (Discussion off the record).
[10] EXAMINATION BY MR. LEWIS:
[11] Q: Is it a lengthy report?
[12] A: Three or four pages.
[13] Q: Can you recall generally the contents of
[14] the report?
[15] A: Just what I stated a few moments ago.
[16] Q: Just a summary?
[17] A: Yes.
[18] Q: Did you reach any opinions or conclusions
[19] in that report?
[20] A: I haven't seen it in a while. I don't
[21] remember.
[22] Q: Do you recall any written notice that you
[23] ever gave any of the employees at the Libby
[24] facility that told them about the dangers

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[1] associated with asbestos exposure at the Libby
[2] facility?
[3] A: In the late seventies, we designed a more
[4] formal training program with a slide show and with
[5] booklets concerning tremolite as well as other
[6] issues.
[7] Q: In the late seventies?
[8] A: Yes. And that was given to every
[9] employee.
[10] Q: Are you sure that was given or did
[11] management forbid you from giving that to the
[12] employees?
[13] A: The management in Cambridge was not hot
[14] about this idea – wasn't sure that it was the
[15] right thing to do or the way to go. Bob Oliverio
[16] in Libby said, they'll never know what goes on in
[17] Libby, and I want to do it, and he did it.
[18] Q: I've seen some documents in those
[19] thousands of pages of documents that I read and I'm
[20] doing this from memory, but I can recall seeing a
[21] document where someone from Cambridge told you
[22] folks to take some of the – some information out
[23] of that slide show or whatever it was.
[24] A: Well, there were – there were about five

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[1] iterations of that and it was changed and changed
[2] and re-changed and eventually Oliverio went back to
[3] the original and that is what was used in Libby and
[4] he just went ahead and did it.
[5] Q: And how was it given to the employees?
[6] A: In a classroom setting, sit down, here
[7] is – here's the slide show, here are the booklets.
[8] Do you have any questions?
[9] Q: Are you sure that all the employees got
[10] the slide show?
[11] A: This also involved a very significant
[12] issue. We at this time banned smoking on all
[13] property. And so it was something that every
[14] employee had a very strong – or most employees had
[15] a very strong vested interest. It was such a major
[16] issue because of the smoking that, in fact, the
[17] union went to arbitration over the smoking ban, so
[18] every employee at Libby was well aware of what was
[19] going on and what the situation was.
[20] Now –
[21] Q: This is Oliverio that did this?
[22] A: Yes. Oliverio was still the manager at
[23] this time and he made the decision.
[24] Q: He's the one that implemented the

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[1] no-smoking policy at the same time?
[2] A: Yes.
[3] Q: Are you sure?
[4] A: That it was Oliverio? I'm virtually
[5] certain, yes.
[6] Q: So at the time that Oliverio instituted
[7] the no-smoking policy, the slide show or pamphlet
[8] or whatever was prepared was disseminated at the
[9] same time?
[10] A: Yes.
[11] Q: And who did that? Who conducted that?
[12] A: Lovick might have done some of it or
[13] Oliverio. I don't recall. I don't recall.
[14] Q: Do you know where Oliverio is now? Is he
[15] in the Denver area?
[16] A: I don't know. The last I heard, he was
[17] in Florida, but I heard that he went somewhere
[18] else, but I don't know where.
[19] Q: Have you talked to Oliverio in the last
[20] five years?
[21] A: No. I've heard people running into him,
[22] but I've not spoken to him as such.
[23] Q: And McCaig is retired?
[24] A: Yes.

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[1] Q: Have you talked to him in the last five
[2] years?
[3] A: I talked to Bill maybe a year ago, but
[4] not since then.
[5] Q: Did you talk to him about
[6] asbestos-related problems or asbestos litigation?
[7] A: No.
[8] Q: And you're certain that this slide show
[9] or whatever it was – was it a slide show?
[10] A: Yes, there were slides.
[11] Q: You're certain this slide show was
[12] disseminated at the same time that Oliverio enacted
[13] the no-smoking policy?
[14] A: It was part of the whole package, I
[15] believe.
[16] Q: When was that? Your closest estimate as
[17] to when that occurred?
[18] A: '78 or '79. That's my closest guess. I
[19] really don't recall.
[20] Q: Did McCaig take over for Oliverio?
[21] A: Yes, he did.
[22] Q: Before he took over for Oliverio, was he
[23] Oliverio's assistant or did he come from another
[24] place?

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[1] A: Before he took over for Oliverio, he was
[2] the engineering manager for Libby.
[3] Q: So he was at Libby before?
[4] A: He was at Libby – he joined Grace about
[5] the time I did – either a year or so before or a
[6] year or so after; in that general time frame.
[7] Q: Did you prepare safety data sheets on
[8] asbestos at the Libby facility?
[9] A: No. That was the function of the
[10] Construction Products Division. And they had
[11] somebody to do that in Cambridge who did that for
[12] them.
[13] Q: Did you ever see those?
[14] A: Yes.
[15] Q: When were they first adopted?
[16] A: Sometime in the seventies. I don't
[17] recall offhand.
[18] Q: Did any of your safety data sheets in the
[19] seventies indicate that asbestos was a
[20] cancer-causing substance?
[21] A: As I recall, the safety data sheets
[22] mentioned tremolite and said that tremolite was
[23] categorized as a form of asbestos and that – but I
[24] don't recall the precise wording of the

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[1] information.
[2] Q: When you did your dust sampling, what did
[3] you search for?
[4] A: Our dust sampling was mainly for
[5] tremolite fiber, but I think from time to time we
[6] did total dust.
[7] Q: Was fiber length a determining factor in
[8] your sampling?
[9] A: The counting of the samples had you count
[10] fibers greater than 5 microns in length.
[11] Q: What about tremolite fibers? Are they
[12] long or short fibers?
[13] A: The tremolite fibers at Libby were
[14] generally long fibers.
[15] Q: And how long were they ordinarily?
[16] A: In the neighborhood of 5 to 100 microns,
[17] generally speaking.
[18] Q: Was there any significant amount of
[19] tremolite that would be below 5 microns in length
[20] at the Libby facility?
[21] MR. MURPHY: Would you read the
[22] question back, please.
[23] (Whereupon, the court reporter read a
[24] portion of the record).

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[1] Q: I'm talking about tremolite fibers.
[2] A: While I don't have direct knowledge of
[3] that, when the MSHA people came they did fiber
[4] counting both ways. One with a phase contrast
[5] microscope and one with the electron microscope.
[6] So they looked at the same sample twice and it was
[7] their conclusion that using the electron microscope
[8] they came up with – which is more precise,
[9] obviously they came up with lower counts than they
[10] did with the phase contrast, because with phase
[11] contrast, if you got a piece of vermiculite on edge
[12] it looked like a fiber because it was thin and
[13] straight. So that was their conclusion. I never
[14] did that work. This was secondhand knowledge.
[15] Q: Do you know if they attempted to measure
[16] fibers shorter than 5 microns?
[17] A: They looked for all fibers and then they
[18] looked for fibers greater than 5 microns in length.
[19] Q: Do you know if data was provided for all
[20] fibers as opposed to 5 microns or greater?
[21] A: I don't recall those reports.
[22] Q: When were they done?
[23] A: At various times through the years.
[24] Through the seventies and eighties.

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[1] Q: Did you ever do some reports of –
[2] prepare any documents entitled, Industrial Hygiene
[3] Surveys, Zonolite Dust Control Program?
[4] A: I may have.
[5] Q: Do you recognize that form (handing)?
[6] A: (Witness peruses document).
[7] Yes, I did that. I did that
[8] sampling.
[9] Q: Just reviewing these, and I'm not trying
[10] to trick you or anything, it looks like this
[11] sampling comes from different locations – like
[12] Pompano Beach, Jacksonville, Florida; different
[13] places like that. Did you do any sampling like
[14] that at the Libby facility?
[15] A: Yes, I did.
[16] Q: And those were the kinds of forms you
[17] used at the Libby facility?
[18] A: Initially, yes, but shortly thereafter we
[19] changed the forms so you could put several samples
[20] on one sheet so you listed all the pertinent data
[21] at the top and you could list fifteen different
[22] samples there. More of a grid-like form, but these
[23] were the initial forms we used.
[24] Q: I notice that – in these samplings, all

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[1] but one of them indicate no respirator was used.
[2] Is there any reason for that?
[3] MR. MURPHY: You mean at the –
[4] Q: None of them are at Libby?
[5] A: It may be that the exposures were
[6] below – consistently below. What we did is go in
[7] and take a sample when somebody was working with –
[8] if they didn't work with a respirator, that's the
[9] way we took the sample. If they were wearing a
[10] respirator, then we indicated that.
[11] Q: Are respirators ordinarily required in
[12] all expanding operations?
[13] A: No. Respirators were required only in
[14] areas where you might exceed the PEL in those
[15] expanding operations where that might happen.
[16] There are PELs for fiber and there are PELs for
[17] total dust and that kind of thing. If it was an
[18] operation where you couldn't control the dust any
[19] other way, you might use a respirator for certain
[20] situations.
[21] Q: Now, I was talking about the Material
[22] Data Safety Sheets and the kinds of warnings that
[23] were given. What is your recollection as to the
[24] earliest time that W.R. Grace or the Zonolite

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[1] Division gave a written warning to anyone
[2] concerning the relationship between asbestos
[3] exposure and cancer?
[4] MR. MURPHY: Objection to the form.
[5] Lack of foundation.
[6] A: I don't know about written – your term
[7] written warnings. I just don't know. I know I've
[8] seen letters written to expanding plants or
[9] customers in the sixties, I think, that talked
[10] about asbestos exposure or asbestos material. I
[11] know that, for example, in the very early – in the
[12] early seventies I went to a customer, O.M. Scott in
[13] Ohio, and did air sampling for them, and that that
[14] was done occasionally. However, while sending them
[15] reports of this air sampling, I don't know that I
[16] would call that a written warning.
[17] Q: Who did you send that to?
[18] A: I did air sampling for O.M. Scott.
[19] Q: But that wasn't for W.R. Grace employees?
[20] A: No. You said anyone, and I'm telling
[21] you, that was a customer.
[22] Q: When did you do – you did that when for
[23] O.M. Scott?
[24] A: In the early seventies. I don't recall

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[1] precisely.
[2] Q: In that communication with O.M. Scott,
[3] did you tell them that there was evidence for a
[4] relationship between asbestos exposure and cancer?
[5] A: They knew that. That is why we were
[6] there air sampling.
[7] You just asked about employees. When
[8] we air sampled –
[9] Q: I'll get to the employees. You said in
[10] the early seventies you told Scott this?
[11] A: Scott was aware of – everybody was aware
[12] of the associations being made between asbestos and
[13] lung disease.
[14] Q: I'm talking about cancer now, not lung
[15] disease. My question particularly related to when
[16] you first communicated in writing with anyone that
[17] there was a relationship between asbestos exposure
[18] and cancer?
[19] A: I don't know the answer to that question.
[20] Q: When did you first communicate to W.R.
[21] Grace personnel that there was a relationship
[22] between asbestos exposure and cancer in writing?
[23] A: What do you mean, W.R. Grace personnel?
[24] You mean anybody in Grace?

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[1] Q: Anybody.
[2] A: In the late sixties and 1970, certainly,
[3] and '71, there were all sorts of internal documents
[4] talking about Selikoff and his studies and the
[5] relationship and what he's pointing out and that
[6] kind of thing, so this information was being passed
[7] around –
[8] Q: Between management level people?
[9] A: Management level people.
[10] Q: When did you first report to workers at
[11] the Libby facility that there was a relationship
[12] between asbestos exposure and cancer in writing?
[13] A: In writing; I don't know that I
[14] corresponded directly with the Libby employees. I
[15] don't know when it was done in writing. As I
[16] indicated to you, it was done verbally on several
[17] occasions and at least annually because of the
[18] chest x-ray program.
[19] Q: I'm talking about in writing. When was
[20] there a written warning or written communication of
[21] any kind given by W.R. Grace to employees in Libby
[22] relating to the dangers associated with asbestos
[23] exposure for cancer? And if there wasn't such
[24] written communication, so state.

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[1] A: There were signs in Libby at the new
[2] mill, certainly, concerning asbestos exposure.
[3] Whether it used the word cancer, I don't know. I
[4] think that the signs posted used the OSHA warning
[5] and those were posted in the new mill, and perhaps
[6] in some other areas I don't recall, outside the bag
[7] house room, for example, where that was there.
[8] Q: Where was the bag house?
[9] A: In the mill.
[10] Q: In the new wet mill?
[11] A: Yes.
[12] Q: And you saw that sign there?
[13] A: Yes.
[14] Q: And do you know when it was put up?
[15] A: It was put up in approximately 1972.
[16] Q: Did it mention cancer?
[17] A: That's what I said; I don't recall. I
[18] know it says asbestos exposure or asbestos hazard
[19] and several other things. I don't recall the
[20] precise wording.
[21] Q: Precisely where was that sign put up, if
[22] you recall?
[23] A: I believe it was on the wall – one of
[24] them was on the wall next to the door that you

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[1] entered the bag house area. There were others
[2] around but I don't recall precisely where they
[3] were.
[4] Q: Who worked in the bag house?
[5] A: Maintenance employees and others would go
[6] in there from time to time to do things and they
[7] would be appropriately costumed with respirators
[8] and that kind of thing.
[9] Q: At that time was the old dry mill still
[10] in operation in '72?
[11] A: Part of the time, yes.
[12] Q: Were there any such signs put in the old
[13] dry mill?
[14] A: I believe that there were – there was a
[15] sign somewhere around the skip shack which was part
[16] of the old dry mill but I don't recall precisely.
[17] Q: You're sure –
[18] A: I believe so. I don't recall precisely.
[19] Q: Who put those signs up, if you know?
[20] A: Grace put those signs up. The management
[21] there put the signs up.
[22] Q: Mr. Lovick?
[23] A: I don't think he personally put them up,
[24] but somebody from maintenance or somewhere put them

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[1] up.
[2] Q: Anyplace else on the W.R. Grace facility
[3] grounds in Libby, was there a sign besides those
[4] two places?
[5] A: I think there might have been one
[6] downtown at the bagging facility, but I don't
[7] recall offhand.
[8] MR. LEWIS: Give me about three
[9] minutes. Then I'll be done.
[10] (Whereupon, a brief recess was
[11] taken).
[12] MR. LEWIS: Mr. Eschenbach, I think
[13] I'm going to conclude the deposition here with just
[14] a few more questions. I want to tell you that I'll
[15] probably have to look at those more recent
[16] documents and talk to you again in some fashion.
[17] If Counsel can't stipulate to that today, he
[18] indicates that he's not trial counsel in this case,
[19] and I understand the situation. I'll have to take
[20] that matter up with the court or trial counsel.
[21] Lead counsel is Mr. Graham?
[22] MR. MURPHY: Yes.
[23] I have indicated that I think it's
[24] reasonable to – for Mr. Lewis to be able to ask

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[1] new questions based on the documents that he has
[2] only recently received and I have no objection to
[3] that. I believe Mr. Graham will not have an
[4] objection to it, either, but I just want to touch
[5] base with him.
[6] EXAMINATION BY MR. LEWIS:
[7] Q: Have you ever reviewed any media coverage
[8] concerning the Libby vermiculite plant?
[9] A: I don't know that there was, in fact, any
[10] media coverage, as such. There may have been, but
[11] I don't recall that.
[12] Q: If you haven't seen it, you haven't seen
[13] it?
[14] A: Oh, wait a minute. Wait a minute. I
[15] think at some point that some organization –
[16] whether it was Public Citizen or something like
[17] that, wrote something concerning Libby or was going
[18] to. But I don't recall anything about that.
[19] Q: There is a media report indicating that
[20] Mr. McCaig was interviewed, and according to the
[21] media report he says he recalled no general meeting
[22] of employees to discuss asbestos and no written
[23] notice given to all employees about asbestos. Do
[24] you agree with that or disagree with that?

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[1] A: I don't know when he gave that – what
[2] time period he was talking about or what he was
[3] talking about. Obviously, in my testimony I have
[4] disagreed with him about what we did with
[5] employees. Now, I don't know what he means by
[6] general meeting or that kind of thing.
[7] Q: Do you recall ever having a general
[8] meeting where W.R. Grace stopped operations or got
[9] all the employees together and said, we have a
[10] significant health problem associated with asbestos
[11] exposure at this facility? Anything like that?
[12] A: I think – well, number one, as I
[13] mentioned, the meetings with – the slide show
[14] meetings in the late seventies.
[15] Q: Did you attend those?
[16] A: I attended parts of one or maybe a whole
[17] one. I don't recall. But I don't think I attended
[18] the first one but I attended a later one.
[19] Then when the Libby study – McDonald
[20] NIOSH Libby study was to be done, we met with the
[21] union to discuss the study. I don't recall whether
[22] there was an employee meeting before, but there was
[23] an employee meeting afterwards to discuss the
[24] results of that study with all employees, which I

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[1] attended. It was held in the VFW or something in
[2] Libby and that was in '83, I think.
[3] Q: The union leadership claims that the
[4] workers were never told that the dust up at the
[5] mine was hazardous to their lives. Do you agree
[6] with that or disagree with it?
[7] A: I disagree. I believe that the union was
[8] told – was supplied reports from the public health
[9] service, from the Montana people, and were told
[10] just what the story was. I know I told people,
[11] union members and others, just what the potential
[12] health hazards were.
[13] Q: There are some reports that employees
[14] were interviewed and they indicated that they were
[15] told by management level officials that the dust
[16] was no more harmful than, "farm dust."
[17] Do you have any knowledge of that?
[18] A: No.
[19] Q: And there are other reports that
[20] employees were told by a company official that the
[21] dust at the Libby facility was, "a nuisance dust."
[22] Do you have any knowledge of that?
[23] A: The – someone may have said that
[24] vermiculite was a nuisance dust, but certainly not

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[1] tremolite and certainly not the general dust which
[2] contained tremolite.
[3] Q: Some of the employees and union officials
[4] recalled the company telling employees, "We don't
[5] have asbestos. We have tremolite," leaving the
[6] workers with the impression that they were not
[7] exposed to asbestos.
[8] Do you know anything about that?
[9] A: No.
[10] MR. MURPHY: Do you have a time?
[11] Q: Prior to the 1980s.
[12] MR. MURPHY: He said he didn't know
[13] it, anyway.
[14] A: I don't know anything about that. I know
[15] we made the statement that we don't have commercial
[16] asbestos, the chrysotile, but we have tremolite.
[17] Q: Many of the workers indicated that they
[18] didn't receive any real explanation as to the true
[19] hazards to their health until the late seventies or
[20] early eighties. Does that make any sense to you,
[21] or does that – do you agree with that?
[22] A: Well, I disagree for the reason that I
[23] know I explained to many employees – I can't say
[24] all – but to many employees while reviewing their

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[1] chest x-ray records or chest x-ray reports what the
[2] problems were, and, in fact, as I recall, I wrote
[3] on those the date that I discussed it with them.
[4] But I don't have copies of those. I don't know
[5] where those medical records are.
[6] Q: Do you know what happened to them?
[7] A: I don't know.
[8] Q: Does W.R. Grace still have them?
[9] A: I don't know. They were at Libby. I
[10] don't know where they are. These were medical –
[11] they're medical records.
[12] Q: If employees said that when they got
[13] their x-ray reports, nobody told them anything
[14] about the meaning of those reports and that they
[15] were just told to see their own doctor if they had
[16] any questions, would they – do you challenge that?
[17] A: Yes, I do.
[18] Q: Wasn't that the program? Wasn't the
[19] program set up so that chest x-rays – you folks
[20] were not allowed to comment on the chest x-rays
[21] because you're not doctors and they were supposed
[22] to see their own doctor if they had any questions?
[23] A: In the early days – I think in '59 to
[24] '64 to '72 or '73, they were told the doctor has

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[1] the chest x-ray report and see them for an
[2] interpretation.
[3] In 1973 or '74, Lovick and I, because
[4] of his discussions with employees, became convinced
[5] that the doctors weren't doing an adequate job and
[6] felt we had to assure that they knew what the
[7] results said. And so we decided to – we continued
[8] to send the reports to the doctors, but we went to
[9] each employee with their reports and said, here is
[10] what your report says. Here are the words. This
[11] means – if it says fibrosis it means you have some
[12] scarring on your lung, or if it – whatever it
[13] said, try to put it in general terms. This can
[14] result from exposure to tremolite, et cetera; go
[15] see your doctor.
[16] Q: Of course, if that were the case, then it
[17] was already too little, too late?
[18] A: Yes; but the other people were shown
[19] their x-rays and they were told, your x-ray report
[20] shows no indication of any lung disease. You may
[21] wish to check this with your doctor. Remember, you
[22] should be wearing your respirator when appropriate,
[23] and that kind of thing. So that they were aware.
[24] They were also aware of the people who had disease.

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[1] who had problems. Tom Craver, who couldn't...
[2] Q: So if the worker indicated they were not
[3] told this by you and/or Mr. Lovick, they're not
[4] telling the truth? Is that –
[5] A: I don't know where that came from.
[6] MR. MURPHY: Objection to the form.
[7] A: Who are you talking about? Who was
[8] interviewed? I'm saying that is contrary to my
[9] knowledge.
[10] Q: Well, if nine out of ten of W.R. Grace
[11] employees interviewed said that they were not
[12] informed of any asbestos health hazard until late
[13] 1970s, you would say that that would not – they
[14] were not telling the truth?
[15] A: I would say I don't know who made that
[16] statement, who surveyed those people, and I don't
[17] believe that's correct.
[18] MR. LEWIS: I'll reserve the rest of
[19] my questions until I see those other documents. I
[20] understand you're not stipulating to that
[21] reservation and I'll take that up with Mr. Graham
[22] and the Court as appropriate.
[23] MR. MURPHY: I will talk to
[24] Mr. Graham today or tomorrow as I can and one of us

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[1] will get back to you promptly. To the extent I
[2] have any questions I'll ask them when you complete
[3] your examination.
[4] (Discussion off the record).
[5] (Whereupon, the deposition was
[6] adjourned at 3:59 p.m.).
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[1] CERTIFICATE
[2] I, HARRY ESCHENBACH, do hereby certify
[3] that I have read the foregoing transcript of my
[4] testimony, and further certify that it is a true
[5] and accurate record of my testimony (with the
[6] exception of the corrections listed below):
[7] Page Line Correction
[8]
[9]
[10]
[11]
[12]
[13]
[14]
[15]
[16]
[17]
[18]
[19] HARRY ESCHENBACH
[20] Sworn and subscribed to before me this _____
[21] day of _____, 1996.
[22]
[23] Notary Public
[24] My Commission expires:

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[1] CERTIFICATE OF NOTARY PUBLIC
[2] Commonwealth of Massachusetts
[3] Suffolk ss.
[4] I, Deborah L. Fitzpatrick, Registered Merit
[5] Reporter and Notary Public in and for the
[6] Commonwealth of Massachusetts do hereby certify
[7] that HARRY ESCHENBACH, the witness whose deposition
[8] is hereinbefore set forth, was duly sworn by me and
[9] that such deposition is a true record of the
[10] testimony given by the witness.
[11] I further certify that I am neither related to
[12] or employed by any of the parties in or counsel to
[13] this action, nor am I financially interested in the
[14] outcome of this action.
[15] In witness whereof, I have hereunto set my
[16] hand and seal this _____ day of ,
[17] 1996.
[18]
[19]
[20] Deborah L. Fitzpatrick
[21] Notary Public
[22]
[23] My commission expires:
[24] January 18, 2002

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Lawyer's Notes

ASBESTOS LITIGATION
DEPOSITION/F.W. EATON

In The

United States District Court
Southern District of New York

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY, et al.,

Plaintiffs,

-vs-

ALLIED CORPORATION, et al.,

Defendants.

91 CIV. 0310(CLB)(MDF)

DEPOSITION
OF
FREDERICK W. EATON
September 19, 1996

TRAVELING TRANSCRIPT™

A W R

PROFESSIONALS SERVING PROFESSIONALS

A. WILLIAM ROBERTS, JR. & ASSOCIATES

CHARLESTON 722-8414 COLUMBIA 731-5224

1-800-743-DEPO

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

91 Civ. 0310(CLB)(MDF)

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY (formerly known as "The Port of New York Authority") and PORT AUTHORITY TRANS-HUDSON CORPORATION,
Plaintiffs,

vs.

ALLIED CORPORATION (individually and as a subsidiary of "Allied-Signal Inc."), et al.,
Defendants.

DEPOSITION OF: FREDERICK W. EATON

DATE: Thursday, September 19, 1996

TIME: 10:00 a.m.

LOCATION: Casner & Edwards
One Federal Street
Boston, Massachusetts

TAKEN BY: Counsel for the Plaintiffs

REPORTED BY: CAROL H. KUSINITZ
Registered Professional Reporter

Computer-Aided Transcription By:

A. WILLIAM ROBERTS, JR., & ASSOCIATES

Charleston, SC (803) 722-8414 Columbia, SC (803) 731-05224 Charlotte, NC (704) 573-3919

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(INDEX AT REAR OF TRANSCRIPT)

PROCEEDINGS

FREDERICK W. EATON

a witness called for examination by counsel for the Plaintiffs, being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HUGHES:

Q. Good morning, Mr. Eaton.

A. Good morning.

Q. My name is Jim Hughes. I'm with the law firm of Ness, Motley. We're cocounsel in the action, the Port Authority of New York and New Jersey versus Allied Corporation, et al., and I'm here to take your deposition today.

If you don't understand a question that I ask, please let me know. I'll try to rephrase it or reword it to make it more understandable. Sometimes I don't ask the most artfully phrased questions. If that's the case, just let me know.

Of course, when I ask you a question, I ask that you answer only if you know; that is, I'm not asking you to speculate or guess. If you don't know, let me know. If you do, then just answer the question.

Is there any reason why you would be

unable to understand questions or answer questions today; that is, are --

A. No, sir.

Q. -- are you under any medication?

A. No, sir.

Q. Could you give me your name and address for the record, please.

A. Frederick W. Eaton, E-a-t-o-n. Street address?

Q. Yes, please.

A. 127 Authors, A-u-t-h-o-r-s, Road, Concord, Massachusetts 01742.

Q. Mr. Eaton, could you give me a brief rundown of your educational history from high school.

A. Graduated from the Maine Maritime Academy in 1946, and then -- in marine engineering, and then the University of Maine, 1951, in mechanical engineering.

Q. Was there any specialization in the mechanical engineering degree?

A. No.

Q. And any postgraduate work?

A. No.

Q. Any seminars or classes that would aid you in keeping up with developments in the industry

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1 or field?
2 A. Let me see. In the late '50s I took a
3 course, a mini Harvard Business School course that
4 was sponsored by the company that I was working for
5 at that time.
6 Q. And could I also get a brief rundown on
7 your occupational history from the time of graduation
8 from high school.
9 A. After graduating from high school, I
10 entered the Maine Maritime Academy and then sailed
11 for the War Shipping Administration from '46 to '47,
12 13 months. Then after the University of Maine I
13 worked for Allis Chalmers in West Allis, Wisconsin,
14 from '51 until '54, and was called into the Navy for
15 two years, '54 to '56.
16 Then from '56 to '65 Simplex Wire and
17 Cable Company in Cambridge, Mass., and then '65 to
18 '88 Construction Products Division, W.R. Grace &
19 Company. When I first went with W.R. Grace, it was
20 the Dewey and Almy Chemical Division: That was from
21 '65 to '69. And then the Dewey and Almy Chemical
22 Division of Grace reorganized, and the Construction
23 Products Division was formed of two other divisions.
24 Q. Were your responsibilities at the
25 Construction Products Division at Grace between '65

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1 and '88 the same throughout that period of time?
2 MS. HESSION: Objection to the form. I
3 think he just testified he wasn't at Construction
4 Products Division for the whole time.
5 Q. Well, from '65 to '88, could you detail
6 what your job titles were.
7 A. From '65 to '69 I was facilities engineer
8 with Dewey and Almy Chemical Company -- Dewey and
9 Almy Chemical Division of Grace.
10 Q. And then how about from --
11 A. And then '69 to '88 I was the
12 environmental coordinator for the Construction
13 Products Division.
14 Q. What were your responsibilities as the
15 environmental coordinator for the Construction
16 Products Division?
17 A. I also did in that period some project
18 engineering work, but as coordinator of the division,
19 I was responsible for implementing controls on
20 process equipment to comply with regulatory
21 standards.
22 Q. While you were environmental coordinator
23 for the Construction Products Division, were you the
24 one that was in charge of implementing the controls
25 on the process equipment to comply with regulatory

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1 standards? What I'm asking is, was there somebody
2 else above you, or were you the person that made
3 those decisions?
4 A. No, there was someone above me.
5 Q. And who was that person, if there was
6 just one person?
7 A. I think -- you know, it would be a
8 management decision, and that would involve several
9 people.
10 Q. Was there any -- in the organization of
11 Grace at that time, was there a particular committee
12 or group of people who would make the ultimate
13 decisions?
14 A. No. I mean, it would be -- as I stated
15 before, it's a management decision, and that decision
16 would be based on the scope of the work. I mean, if
17 it was a small job, then a lower management decision
18 could be made.
19 Q. So the bigger the decision, the higher up
20 the management ladder the decision would ultimately
21 be made?
22 A. That's correct.
23 Q. Are you aware that exposure to asbestos
24 is harmful to human health?
25 MS. HESSION: Objection to the form.

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1 Q. You can answer the question.
2 A. Yes, I am.
3 Q. When did you first become aware of that
4 fact?
5 A. I can't be specific on dates, but it
6 would be in that period of time when asbestos was
7 regulated either by U.S. Public Health or OSHA and
8 EPA standards.
9 Q. Do you know what year that was?
10 A. The Public Health standards were in
11 existence when I went with CPD. The OSHA standards
12 and EPA standards came out in the early '70s.
13 Q. So am I correct in understanding your
14 testimony that the Public Health standards came out
15 when you went with CPD, and that would have been in
16 1969?
17 A. They were in existence.
18 MR. HUGHES: Could you mark that as
19 Exhibit 1.
20 (Document marked as Eaton Exhibit 1
21 for identification)
22 Q. Mr. Eaton, I've had marked as Exhibit 1
23 this memo dated March 3, 1969, from R.E. Schneider,
24 S-c-h-n-e-i-d-e-r, to R.N. Vining, V-i-n-i-n-g. On
25 the cc list you're listed as someone apparently to

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1 have received this copy. Do you recognize this
2 memo? Please take as much time as you want to look
3 it over.
4 MS. HESSION: Excuse me. Are you
5 referring just to Page 1 of the exhibit, Counsel?
6 MR. HUGHES: Well, that's what I'm
7 reading from, and I represent that this is all of one
8 piece.
9 A. Could you repeat your question to me,
10 please.
11 Q. I didn't ask you a question; I just said
12 that you could look that over.
13 MR. HUGHES: I'll give a brief
14 description for the record. Eaton Exhibit No. 1, the
15 front page is a memo dated March 3, 1969, from
16 Schneider to Vining. Mr. Eaton is listed as one of
17 the recipients. The second page seems to be an
18 identical copy of it, with a type slightly larger.
19 And attached to it is, I would guess,
20 approximately -- the pages are numbered -- a 15-page
21 report entitled "In Situ and Environmental Dust
22 Controls for Vermiculite Mining and Expanding
23 Operations," and the authors are listed as F.W.
24 Eaton, R.J. Kujawa, K-u-j-a-w-a, and P. Kostic,
25 K-o-s-t-i-c. This report is referenced in the first

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1 paragraph of the memo on the first page.
2 Q. Who was R.E. Schneider?
3 A. He was the chief engineering of the
4 Construction Products -- excuse me. Prior to '69 he
5 was assistant chief engineer, Dewey and Almy Chemical
6 Division. From '69 on until his retirement, he was
7 chief engineer, Construction Products Division.
8 Q. And who was R.M. Vining? Am I
9 pronouncing that correctly?
10 A. Yes. He was president of the
11 Construction Products Division.
12 Q. Do you recall having received this memo?
13 A. Yes.
14 Q. In the first paragraph, it refers to
15 studies that you apparently did with two other
16 people. It says, "...Eaton, Kujawa and Kostic is the
17 result of their initial studies of the dust control
18 problems of the Zonolite operations."
19 What were the Zonolite operations?
20 A. Zonolite was a miner of vermiculite ore
21 in Libby, Montana, and counties around Enoree, South
22 Carolina. They had a beneficiating process at Libby
23 and at Enoree, South Carolina. They also had
24 vermiculite exfoliating plants throughout the
25 country. I can't remember the exact number.

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1 Q. What does "exfoliating" mean?
2 A. Expand.
3 Q. So the vermiculite would be mined, and
4 then when it was exfoliated, it would puff up?
5 A. Yes.
6 Q. Did you know what Mr. Schneider was
7 talking about -- did you know what you were talking
8 about in the report, as mentioned here in this first
9 paragraph of the memo, "the dust control problems of
10 the Zonolite operations"?
11 MS. HESSION: Objection to form.
12 A. Would you repeat the question.
13 Q. What did you mean by "dust control
14 problems of the Zonolite operations"?
15 MS. HESSION: Objection, Counsel. This
16 memo was not written by Mr. Eaton.
17 Q. We'll go to the report. On Page 1 of the
18 attached report of which you are one of the
19 authors --
20 MS. HESSION: Sorry, Counsel, we have a
21 bad -- is that the page headed "Introduction"?
22 MR. HUGHES: Yes.
23 Q. First of all, as one of the authors of
24 the report, in the first paragraph you state, "showed
25 tremolite content of the dust to range between 12

Page 12

1 percent and 23 percent." 12 percent and 23 percent
2 of what?
3 MS. HESSION: Objection to the form. No
4 foundation.
5 Q. Answer the question.
6 MS. HESSION: You can answer.
7 A. I didn't hear you.
8 Q. Read the first paragraph, if you will.
9 MS. HESSION: If you can.
10 Q. And if you can't, I'll read it for you.
11 A. (Reviewing document) All right. I've
12 read it.
13 Q. Okay. What is tremolite?
14 A. Tremolite in the mined vermiculite is a
15 tramp mineral.
16 Q. Is tremolite a form of asbestos?
17 A. Since the early '70s, it has been
18 included in the definition of asbestos.
19 Q. Do you know what physical characteristics
20 tremolite shares with, say, chrysotile?
21 MS. HESSION: Objection to form. No
22 foundation.
23 Q. You can answer the question.
24 A. Did you say answer the question?
25 Q. Yes.

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1 MS. HESSION: Yes, you may answer.
2 Q. She can just object, and then you...
3 A. Counsel, let me just say one thing off
4 the record.
5 MS. HESSION: Excuse me, Mr. Eaton,
6 nothing is off the record here. If you can answer
7 Mr. Hughes's question, please do so. If you are
8 unable to, let him know that, and he will rephrase
9 the question.
10 A. What I am going to state is I am a little
11 hard of hearing.
12 Q. Okay.
13 A. There are times that --
14 Q. Sure. Okay. We were talking about
15 before -- I asked whether tremolite was a form of
16 asbestos, and you said that since the early '70s it
17 has been included in the definition of asbestos; is
18 that a fair characterization?
19 A. That is correct.
20 Q. Do you know whether or not tremolite has
21 any characteristics that are found uniquely among
22 other types of asbestos fibers?
23 A. Yes.
24 Q. Do you know what the differences are
25 between tremolite and chrysotile?

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1 A. No.
2 Q. Do you know if there are any
3 differences?
4 A. Yes.
5 Q. Do you know what the differences are?
6 A. Yes.
7 Q. Could you tell me what the differences
8 are.
9 A. They are -- there is a difference in the
10 type of fiber.
11 Q. Do you know how types of tremolite fibers
12 differ from types of chrysotile fibers?
13 A. Tremolite fibers tend to be shorter.
14 Q. On Page 2 of the report of which you were
15 one of the authors, the very last sentence reads,
16 "Since the same ore," referring to vermiculite ore,
17 "mined and processed at Libby is expanded at most of
18 our vermiculite expanding plants, employees at these
19 plants are exposed to the same toxic dust."
20 Did you know at the time what made that
21 dust toxic?
22 MS. HESSION: Objection to the form. No
23 foundation.
24 A. No.
25 Q. How did you know that the dust was

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1 toxic?
2 MS. HESSION: Objection to the form.
3 There is a predicate in all of your questions,
4 Counsel, that Mr. Eaton wrote particular sentences
5 that you have picked from this report. I don't think
6 that's been established, and I object to questions
7 which presume that he did write particular sentences
8 in the report.
9 MR. HUGHES: He is listed as one of the
10 authors of the report.
11 Q. Do you know why, in the report, the dust
12 was referred to as toxic?
13 A. No, I don't.
14 Q. Your testimony is that you don't know --
15 you didn't know at the time this report was written,
16 of which you were one of the authors, the reason why
17 the dust at the Libby mine was toxic?
18 A. I think at that time I personally
19 considered all dust toxic.
20 Q. Do you know why, in the first paragraph
21 on the first page of the report, particular attention
22 is paid to tremolite content of the dust?
23 A. Yes.
24 Q. Why is that?
25 A. I think what they've established here is

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1 that the vermiculite ore contains about 3 percent
2 tremolite. The waste dust contains 12 to 23 percent
3 tremolite. Now, this is dust that is collected in
4 the screening operation.
5 Q. Why would they even be checking for
6 tremolite?
7 MS. HESSION: Objection to the form.
8 A. In doing studies on dust, we did analysis
9 on other parts of the dust, the silica content, free
10 silica.
11 Q. On Page 2 of the report, the last
12 paragraph, starting with "Because," the first phrase
13 of that paragraph reads, "Because our primary concern
14 is tremolite and the membrane filter membrane enables
15 one to identify asbestos fibers, we should change
16 over to this method of sampling."
17 There the report says that the primary
18 concern is tremolite; is that correct?
19 A. Yes.
20 Q. Was your primary concern tremolite at
21 this time in investigating the dust problem?
22 A. Yes.
23 Q. And why is that?
24 A. This report -- excuse me. We knew that
25 tremolite was a tramp mineral found in vermiculite

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1 ore. At the time, this period, there were no studies
2 on tremolite, and it was not classified as any -- in
3 any other group of minerals. It was just classified
4 as a waste mineral.
5 We conducted this study after visiting
6 the people at Johns-Manville, and one of their -- I
7 believe it was the Celite operation, that mineral
8 contained tremolite.
9 Q. But my question was, why was your primary
10 concern tremolite?
11 MS. HESSION: I believe the witness just
12 answered.
13 MR. HUGHES: It is completely
14 unresponsive. I mean --
15 MS. HESSION: He just testified they went
16 to see the JM Celite operation where there was
17 tremolite contamination.
18 A. And JM had taken certain precautions.
19 Q. Do you know why JM took certain
20 precautions to reduce the amount of tremolite in the
21 dust?
22 MS. HESSION: Objection to the form.
23 A. JM had determined that tremolite could be
24 in fibrous form.
25 Q. Again, on Page 2, that same first

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1 sentence of the last paragraph, in fact isn't
2 tremolite grouped with asbestos fibers here?
3 I mean, it says, "Because our primary
4 concern is tremolite and the membrane filter membrane
5 enables one to identify asbestos fibers, we should
6 change over to this method of sampling." Isn't the
7 reasonable implication that tremolite is an asbestos
8 fiber?
9 MS. HESSION: Objection to form. You may
10 answer.
11 THE WITNESS: You say I may answer?
12 MS. HESSION: Yes. I was just making --
13 A. It does not state that tremolite is an
14 asbestos fiber.
15 Q. Would you -- go ahead.
16 A. All it states is that the membrane filter
17 method is a method of identifying asbestos fibers.
18 Q. Well, doesn't it actually say three
19 things? First of all, it says that your primary
20 concern is tremolite, correct?
21 A. Yes.
22 Q. The second thing it says is that the
23 membrane filter method enables one to identify
24 asbestos fibers?
25 A. That is correct.

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1 Q. And the third is that "we should change
2 over to this method of sampling"; is that correct?
3 A. So stated.
4 Q. Right. From that you can make no
5 inference that tremolite is an asbestos fiber; is
6 that your position?
7 A. I think I stated earlier that we had been
8 informed that tremolite could be in fibrous form.
9 Not all tremolite is fibrous.
10 Q. On Page 11 of the report, under the
11 Subheading 2, "Type Test and Equipment," if you could
12 just read that first paragraph.
13 A. (Reviewing document)
14 Q. In the last sentence, which reads, "No
15 differentiation is made between harmful asbestos
16 fibers and the so-called nuisance dust particles,"
17 the harmful asbestos that is being referred to there,
18 is that tremolite?
19 A. I don't know.
20 Q. Do you know if in this report any other
21 type of asbestos is referred to?
22 MS. HESSION: Do you want to give him
23 time to sit and read through the whole report? I
24 don't think that's a fair question to ask him a
25 question like that about a 15-page report. If you

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1 want, we can stop and he'll read the whole thing.
2 MR. HUGHES: Then let me -- I'll make it
3 easier.
4 MS. HESSION: Thanks.
5 Q. Do you recall at this period of time,
6 when investigating the dust problem, being concerned
7 with any other fibrous mineral other than tremolite?
8 MS. HESSION: I'm sorry, just so we're
9 clear, are you referring to this report concerning
10 the work done at Libby?
11 MR. HUGHES: Yes.
12 A. No.
13 Q. But you don't know what is being referred
14 to when this report, of which you are one of the
15 authors, says "harmful asbestos fibers"?
16 MS. HESSION: I believe he answered that
17 question already, Counsel.
18 A. To the best of my recollection, I do not
19 remember referring to tremolite as -- in this report
20 as tremolite asbestos.
21 Q. But we can agree that this report refers
22 to harmful asbestos fibers?
23 A. This report --
24 MS. HESSION: We'll stipulate, Counsel,
25 that at Page 11 there is a reference to the term

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1 "harmful asbestos fibers."
2 Q. But you don't remember writing that?
3 A. No.
4 Q. Do you remember reading this when you
5 issued the report?
6 A. Yes.
7 Q. Did you -- do you remember urging the
8 other authors to change this language so that it
9 would refer only to tremolite?
10 MS. HESSION: Objection to the form.
11 A. No.
12 Q. If we could go back to the first page of
13 the exhibit, which is the March 3, 1969, memorandum,
14 in the second paragraph, the very last sentence, the
15 author of the memo, Mr. Schneider, says that workers
16 are performing their services under working
17 conditions, quote, which we have good reason to
18 believe are hazardous, unquote.
19 Did you agree with that description of
20 the working conditions at the time?
21 MS. HESSION: Objection to form and to
22 counsel's characterization of that sentence.
23 A. Yes.
24 Q. You did agree with that sentence?
25 A. Yes.

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1 Q. On the second to the last paragraph, the
2 author of the memo, Mr. Schneider, suggests the
3 readers of the memo, quote, read the attached copy of
4 an article from the October 12, 1968, issue of The
5 New Yorker Magazine, unquote. Did you read that
6 copy?
7 A. I do not remember.
8 Q. Do you know if it was attached to the
9 memo?
10 A. I don't remember.
11 Q. In the middle of that paragraph, Mr.
12 Schneider says that he does not believe, quote, we
13 should ignore the possibility we may be subjected to
14 substantial financial liability over the next two --
15 I'm sorry, the next few years, close quote. Do you
16 know to what he was referring?
17 A. I think he was referring to the general
18 condition of the Libby mill and the numerous
19 expanding plants throughout the country.
20 Q. And where would this substantial
21 financial liability -- from what would that result?
22 A. Primarily the total dust exposure to
23 employees.
24 Q. Mr. Eaton, do you recall when the
25 Construction Products Division first considered the

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1 use of respirators by workers?
2 MS. HESSION: I'm sorry, could I hear the
3 question again.
4 (Question read)
5 A. I don't know the exact dates. At Libby
6 they were in use, I believe, prior to 1969.
7 Q. Did you personally play any role in
8 implementing a dust control program at Grace's CPD
9 Zonolite facilities?
10 A. Yes.
11 Q. What was your role in implementing a dust
12 control program at the Zonolite facilities?
13 A. I think that comes in two parts. Do you
14 want me to --
15 Q. You can give me -- I mean, can you just
16 give me a brief description of what --
17 A. One part would be the implementation of
18 equipment to control dust, and the other was the
19 implementation of a sampling test program which would
20 monitor the effectiveness of our controls.
21 Q. Did one of them come before the other?
22 A. Yes.
23 Q. Would the sampling come before the --
24 A. No. It was the installation of the
25 equipment.

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1 Q. So --
2 A. And...
3 Q. What was the impetus for implementing
4 methods to control dust?
5 A. Compliance with emission standards.
6 Q. When did you take the first step in
7 implementing methods to control dust?
8 A. It was one facility, and that was late
9 '68, early '69.
10 Q. What facility was that?
11 A. The plant in Trenton, New Jersey.
12 Q. Was the implementation of processes to
13 control dust at Trenton the direct result of a desire
14 to comply with regulatory laws or statements or
15 ordinances?
16 THE WITNESS: Could I hear that again.
17 (Question read)
18 A. Yes.
19 Q. Do you know what laws or statements or
20 ordinances those were?
21 A. I don't remember the name of the agency.
22 It was like the New Jersey Air Pollution Control
23 District or Environmental Protection Agency. It was
24 a state environmental agency.
25 Q. Did they come out to the plant and say,

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1 "You've got to control the dust here"?
2 A. Prior to 1969, the Trenton plant was
3 cited for exceeding the emission standards at that
4 time.
5 Q. How long had the Trenton plant been in
6 operation?
7 A. I have no idea.
8 Q. So the second part of your work in
9 controlling the dust was to do a sampling test
10 program to monitor the dust; is that correct?
11 A. To monitor employee exposure to dust.
12 Q. So was all the monitoring done by
13 samplers that were placed on or near the workers?
14 A. That is correct.
15 Q. In the report I noticed that you talked
16 about membrane fiber sampling.
17 A. Yes.
18 Q. Could you explain what that is.
19 MS. HESSION: Excuse me, are you
20 referring to the report that's attached to Exhibit
21 1?
22 MR. HUGHES: That's the only report we
23 have talked about, I believe.
24 MS. HESSION: Okay.
25 Q. Could you just tell me what membrane

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1 fiber sampling is.
2 A. This was a new procedure that Johns-
3 Manville had adopted. The U.S. Public Health was in
4 the process of evaluating it. It was an English test
5 method, and the monitors were attached to a pump with
6 a volume similar to the respiratory rate of an
7 individual. The monitors were held in the position
8 in the breathing zone from personnel monitors. We
9 took area samples, and they were placed any place
10 that we wanted to.
11 After the sample was taken, they were
12 sent to a laboratory where they were analyzed by
13 phase contrast microscopy, and this method counts
14 fibers longer than 5 microns in length with an aspect
15 ratio of 3 to 1. Excuse me, that is the definition
16 of a fiber. So, in the analysis of the filter, those
17 were the only fibers that were counted.
18 Q. Was the membrane fiber sampling method,
19 as the name might imply, particularly good at
20 measuring the number of fibers in a sample?
21 MS. HESSION: Objection to the form of
22 the question.
23 Q. What I'm trying to get at is, this
24 membrane fiber sampling method, was it used to count
25 particles of dust?

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1 A. No.
2 Q. It was used to count numbers of fibers?
3 A. Correct.
4 MS. HESSION: If you are about to go to a
5 new exhibit, could we just take a short break.
6 MR. HUGHES: Sure.
7 (Recess)
8 (Document marked as Eaton Exhibit 2
9 for identification)
10 MR. HUGHES: I'm having marked as Eaton
11 Exhibit No. 2 a 12-page collection of pages, the
12 front page of which identifies it as "Dust Control
13 Program, W.R. Grace & Co., Construction Products
14 Division, Zonolite Facilities." The last page of the
15 Exhibit 2 has "F.W. Eaton" with a signature above it,
16 and then below it in handwritten notation, the date
17 8/26/69.
18 BY MR. HUGHES:
19 Q. Mr. Eaton, are you the author of this --
20 for lack of a better word, I'll just call it a
21 program.
22 A. Yes.
23 Q. On Page -- it's hard because they aren't
24 labeled 1, 2, 3, 4, but at the bottom, there are some
25 little numbers, 099382, 3, 4 and 5. I'll refer to

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1 those so we can see where we are.
2 On the one identified as 099386 --
3 unfortunately, the 6 isn't very clear either. That's
4 the page with Subsection 2, "Training," right about
5 in the middle of the page there. Do you see that?
6 A. Yes.
7 Q. There is an arrow. In the first sentence
8 you state that "All General Plant Superintendents
9 will be instructed by Eaton and Kostic and in the
10 reasons for and the techniques involved in membrane
11 filter sampling."
12 What were the reasons for the membrane
13 filter sampling?
14 A. Based in Exhibit 1 -- I mean, in Exhibit
15 1 we discussed, I believe, a monitoring program using
16 the latest membrane filter method that would be
17 implemented in the mills and all of the expanding
18 plants to sample for tremolite fibers.
19 Q. Okay, and you may have already answered
20 this -- if you have, forgive me -- but what was the
21 reason for doing the sampling? I know that it was to
22 detect tremolite fibers, as you have just said, but
23 then the question is, why were you attempting to
24 detect tremolite fibers?
25 A. Primarily to see if tremolite fibers were

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1 present.
2 Q. Why did you care whether or not tremolite
3 fibers were present?
4 A. As part of an overall dust control
5 program, we wanted to see what, if any, the exposures
6 were to employees.
7 Q. On Page 099391 --
8 A. Yes, I have it.
9 Q. The first paragraph at the top of that
10 page, the second sentence in that paragraph, which is
11 the last sentence, states, "Test reports from
12 membrane filter sampling will be used to monitor
13 facilities and aid in the work required to bring
14 facilities within allowable limits."
15 Whose allowable limits are you talking
16 about there?
17 A. To the best of my recollection, there
18 were no standards at that time. The English had
19 adopted a standard of 12 fibers per cc longer than 5
20 microns with a 3 to 1 aspect ratio. Manville had
21 established also those standards, and I believe at
22 this time we were using the 12 fiber standard.
23 Q. So the allowable limit means our
24 allowable limit; that is, Construction Products
25 Division allowable limit?

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1 A. Right, target.
2 Q. I guess a better way of asking, the
3 allowable limits referred to here are not
4 governmentally imposed allowable limits?
5 A. That is correct.
6 Q. In the second to the last paragraph on
7 this same page, 099391, the first sentence reads,
8 "Top priority will be given to Mono-Kote dust
9 control." Do you see that paragraph?
10 A. Yes.
11 Q. Are the Zonolite plants and the Mono-Kote
12 plants the same thing?
13 A. Generally a Zonolite expanding plant,
14 exfoliating plant, contained one or more expanding
15 furnaces and could have other operations such as the
16 Mono-Kote mixing operation.
17 Q. Okay. So when it says. "Top priority
18 will be given to Mono-Kote dust control," does that
19 mean that the top priority is going to be given to
20 those plants where Mono-Kote is manufactured?
21 MS. HESSION: Objection to form.
22 A. I think I have to say that no more
23 emphasis was given to Mono-Kote than to the expanding
24 furnaces.
25 Q. But this does say that top priority will

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1 be given to Mono-Kote dust control?
2 A. It so states.
3 Q. What was the goal of the dust control
4 program?
5 THE WITNESS: Would you repeat that
6 again.
7 (Question read)
8 A. The goal of the dust control program was
9 to provide controls and new equipment that would
10 enable a dust-free working environment and reduce
11 emissions to the atmosphere to the standards that
12 were established for that particular locality.
13 Q. Okay. When you referenced that top
14 priority will be given to the Mono-Kote dust control,
15 what ingredients went into Mono-Kote that would give
16 rise to dust?
17 A. Well, there was exfoliated vermiculite,
18 gypsum, asbestos, I believe a surfactant, but I am
19 not sure, and I think those were the basic
20 ingredients.
21 Q. Did all three of those ingredients give
22 off dust?
23 A. Yes, they did, with the exception of the
24 surfactant, if there was a surfactant in there.
25 Q. Was one of the purposes of the dust

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1 control program to protect employees from possible
2 hazardous effects of dust?
3 MS. HESSION: Objection to the form.
4 A. The purpose of the dust control program
5 was to reduce the exposure to dust. Dust could
6 contain tremolite, it could contain free silica, and
7 just plain nuisance dust.
8 Q. Could it contain chrysotile at the
9 Mono-Kote manufacturing facilities?
10 A. When this dust control program was
11 instituted, it was to control dust with the main
12 emphasis on tremolite. Now, I do not remember this
13 program being directly applied to Mono-Kote that
14 contained chrysotile asbestos. If, in the sampling
15 program, we did collect chrysotile asbestos, that
16 could be different -- identified separate from the
17 tremolite.
18 Q. Do you know if there was any specific
19 dust or fiber control program directed at chrysotile
20 fibers?
21 A. No direct program for chrysotile
22 asbestos. We had a program -- the design of dust
23 control was such that we reduced the exposure to the
24 lowest possible amount within reason.
25 Q. But there was no particular emphasis on

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1 reducing the amount of chrysotile asbestos in the
2 Mono-Kote plants; there was just this one dust
3 control program, and that --
4 A. -- encompassed all dust, yes, that is
5 correct.
6 Q. Did you actually train plant
7 superintendents on air sampling procedures?
8 A. Yes.
9 Q. What did the training consist of?
10 A. Excuse me. The general plant
11 superintendents.
12 Q. Okay. What did the training consist of?
13 A. Went over the equipment, calibration of
14 equipment, the sampling procedure, the actual
15 sampling, collection of samples, and submission of
16 samples to a laboratory in Boston for analysis.
17 Q. Did any of the general plant
18 superintendents ever ask you why they had to do
19 this?
20 A. I don't believe so. I think it was their
21 boss, a man by the name of Reed Wright, that
22 designated his general plant superintendents with
23 this collateral duty.
24 Q. So when you trained them, did any of the
25 general plant superintendents come up to you and

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1 say --
2 A. No.
3 Q. -- "Mr. Eaton, why do we have to do
4 this?"
5 A. No, not to my knowledge.
6 Q. Did any of the workers come up to you and
7 say, "Why are you doing this testing?"
8 A. We -- the answer is no.
9 Q. Did you have a practice of informing the
10 workers why the plants were being sampled?
11 A. Yes.
12 Q. What did you tell them? Did you send
13 them a memo or a letter?
14 A. I think it was just verbal.
15 Q. What were they told?
16 A. I don't remember exactly what they were
17 told.
18 Q. Just that you're trying to keep the dust
19 down?
20 A. Yes.
21 Q. And this is a way to do it?
22 A. Right.
23 Q. How was your relationship in the late
24 '60s with the State of New York regulatory agencies
25 for emission controls, if you remember?

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1 MS. HESSION: Objection to the form. Did
2 you say how was his relationship?
3 MR. HUGHES: Yes.
4 A. My relationship was good.
5 (Document marked as Eaton Exhibit 3
6 for identification)
7 MR. HUGHES: I'm marking as Eaton Exhibit
8 3 a memo dated September -- it's difficult to read;
9 it's a single digit -- 1969 from Mr. Eaton, and it
10 appears to be directed toward an R. Reyer, it
11 appears, comma, and then it says "Weedsport."
12 Q. Is that your signature at the bottom of
13 this memo?
14 A. Yes, it is.
15 Q. And in this memo, you inform the readers
16 that you've attached a copy of a letter from Mr. D.W.
17 Prosser. Who was D.W. Prosser?
18 A. He was, I believe, with Cayuga County
19 Department of Health or Environmental Protection -- I
20 have forgotten the name of the agency -- in Auburn,
21 New York.
22 Q. And you are stating to the readers that
23 "ratings have been assigned to all emission points,
24 except that no certificates to operate for Point C1
25 and Point D will be granted until we comply with the

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1 request made in Prosser's letter." And then you
2 state, "I must say I have had it as far as the State
3 of New York is concerned."
4 Why did you say you have had it with the
5 State of New York?
6 A. Well, going back to the previous
7 statement that I made, it is that I did not become
8 involved with the Zonolite operations until 1969,
9 with the exception of Trenton, and that involvement
10 was late 1968.
11 All of the -- any environmental work
12 done for Zonolite prior to 1969 was done by the
13 people that worked in the Zonolite Division. The
14 Zonolite Division, other than a fabricating shop in
15 Travelers Rest, South Carolina, had no engineering
16 personnel. So that the initial permits for the
17 Weedsport plant, along with many other plants in the
18 Zonolite Division, were taken out prior to 1969.
19 In 1969 one of the objectives I had was
20 to bring all plants in compliance. Weedsport was one
21 of those plants that fell in this crack that some
22 things had been done and some things had not been
23 done.
24 Q. It seems as though you're expressing some
25 frustration with the State of New York in that

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1 sentence. Is that a fair characterization?
2 A. I think at the time it was probably true.
3 Q. My question is, why were you expressing
4 frustration at the State of New York? Maybe we
5 should make it clear that you weren't expressing
6 frustration with everything in the State of New
7 York --
8 A. No, no.
9 Q. -- just with apparently the regulatory
10 powers that be that you were dealing with at that
11 time.
12 A. If I may read the second paragraph, it
13 may clarify things.
14 Q. Sure.
15 A. We're going back a long time.
16 Q. Sure.
17 A. (Reviewing document) Okay. The second
18 paragraph helps me a little bit, in that they, the
19 Zonolite people and this Cliff Johnson, whose name is
20 in the first sentence of the second paragraph, who
21 was the chief engineer of the design group down in
22 Travelers Rest, they installed a wet scrubber on one
23 of the furnaces, and it was to control particulates
24 and visible emissions. It did not control the
25 visible emissions, which was Point C1. I do not

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1 remember what Point D is. (Reviewing document)
2 MS. HESSION: Mr. Eaton, do you have in
3 mind Mr. Hughes's question, which was, why were you
4 frustrated with the State of New York during this
5 process?
6 MR. HUGHES: Yes.
7 A. I really don't remember. I don't
8 remember.
9 Q. Okay. Does vermiculite contain
10 tremolite?
11 A. I can't answer that question.
12 Q. Where did the tremolite that you were
13 testing for in the plants come from?
14 A. From our operation in Libby, Montana.
15 Q. And where -- how did the tremolite get
16 into the plants?
17 A. It came with the concentrate.
18 Q. With the concentrate?
19 A. Yes. You mine ore, you beneficiate it,
20 and it is called concentrate. In other words, the
21 ore contains 20 percent vermiculite.
22 Q. So the ore that contains the vermiculite
23 also contains tremolite; is that a fair
24 characterization?
25 A. Yes.

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1 Q. When did you first become aware of the
2 fact that the concentrate in which the vermiculite is
3 found contained tremolite?
4 MS. HESSION: Objection to the form.
5 THE WITNESS: I didn't hear what you
6 said.
7 MS. HESSION: I objected to the form of
8 his question.
9 Q. Should I try again?
10 A. Yes.
11 Q. You just said that -- I believe this is a
12 fair characterization -- that the concentrate of the
13 vermiculite ore contains tremolite. Is that a fair
14 characterization?
15 MS. HESSION: Why don't you ask him a
16 question. I think it might be easier.
17 A. There is ore beneficiated, and then you
18 have concentrate, and then you have exfoliated.
19 Q. Okay. Is it true that the concentrate
20 that contains the vermiculite also contains
21 tremolite?
22 MS. HESSION: Objection to form.
23 MR. HUGHES: That's a straightforward
24 question. I'm not trying to do a trick question.
25 I'm just not very well versed in the lingo of mining

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1 and stuff like that. So, I'm just trying --
2 MS. HESSION: I think he has already said
3 that there was tremolite in vermiculite concentrate
4 that came from Libby. That testimony is already on
5 the record.
6 MR. HUGHES: Okay.
7 MS. HESSION: Am I -- did I just
8 accurately summarize your earlier testimony?
9 THE WITNESS: That's accurate.
10 MR. HUGHES: Thanks.
11 Q. When did you first learn that vermiculite
12 concentrate from Libby contained tremolite?
13 A. It would be my first involvement with the
14 Libby mill, and that would be in late 1968
15 (Document marked as Eaton Exhibit 4
16 for identification).
17 MR. HUGHES: I'm marking as Eaton Exhibit
18 4 a five-page exhibit. The first page is a letter
19 dated March 17, 1970, from Parker Reist, R-e-i-s-t,
20 to Frederick Eaton. The letter is two pages, and
21 then there are three pages of attachments.
22 Q. You can look this over. If I ask you a
23 question and you need to look at it, that will be
24 fine. You don't need to read it, if you don't want,
25 line by line now.

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A. Do you have a specific question?
Q. Yes.
MS. HESSION: Go ahead.
Q. Do you remember receiving this letter?
A. I remember receiving it. I do not remember the --
Q. The content?
A. -- the content of it.
Q. On the second page of the letter -- I'm sorry, maybe just to set the stage, the first paragraph, Mr. Reist is saying that, pursuant to your request, he has conducted a microscopic examination of the particulate samples that you sent to him from two vermiculite rotary dryers?
A. That's correct.
Q. And then on the second page, in the first paragraph, he says that intermixed with the particles that he had described earlier in the letter were a large number of very fine fibers which resembled asbestos fibers. Then he says, "Since you mentioned asbestos or tremolite fibers in your letter, I assume that is what these are."
Do you remember in your letter to him whether you mentioned asbestos or tremolite fibers?
A. I have no -- I do not remember.

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Q. How did the rotary dryers fit into the vermiculite processing operation? Was it like a big clothes dryer?
MS. HESSION: Can he just answer the first question you asked?
MR. HUGHES: Sure.
MS. HESSION: How did the rotary dryers fit into the operation?
A. Vermiculite ore goes through a wet mill process, and then it goes into a drying process. These were rotary kilns at that time.
Q. Does the rotary dryer dry the stuff before it's exfoliated or after it's exfoliated?
A. It dries it after the wet process, before the screening operation and before exfoliation.
Q. Do you recall -- start over. Was the membrane fiber sampling conducted at jobs where Mono-Kote III was being applied to commercial buildings?
A. Yes, it was.
Q. Do you know how many times -- how many different commercial job sites samples were taken?
A. Not exactly.
Q. Do you know why the samples were taken?
A. A request was made of me to conduct

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sampling on certain job sites, and I do not remember the exact number.
Q. Do you recall if one was the Grumman plant?
A. Yes, it was.
Q. And do you recall if another one of the job sites was in Omaha, Nebraska?
A. Yes, it was.
Q. Did someone ask you to do the sampling at those sites?
A. Yes.
Q. Do you remember who asked you to do that?
A. No, I don't.
Q. Do you remember why the sampling was done?
A. No, I don't.
Q. Did you visit either one of the sites when the sampling was being done?
A. Yes, both sites.
Q. Do you -- where were the air monitors placed at the site?
MS. HESSION: I'm sorry, what site are we referring to?
Q. How about the Grumman site to start off with?

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A. Without seeing the sampling sheets, I can't respond to the question. I don't know.
Q. At a job site where Mono-Kote was being applied, what would be the possible sources of dust that you would have been concerned with as evidenced by the sampling?
MS. HESSION: Again, are you referring to a particular site?
Q. If the sites differ drastically, then I will refer to one, but first of all, let me ask you this: On a Mono-Kote job site, suppose that we have ten Mono-Kote job sites, are the sources of dust from the Mono-Kote going to differ radically from job site to job site?
MS. HESSION: Objection to form. No foundation.
Q. I'm asking a very simple question. I'm just asking, where in a Mono-Kote job site is the dust most likely to come from?
A. I can answer that question.
Q. Okay.
A. The dust most likely will come from the mixing operation, emptying of the bags into the mixer.
Q. Do you recall if the sampling was done to

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1 see if there was a lot of dust from the area of the
2 mixing operation?
3 MS. HESSION: Again, is this at either
4 Grumman or Omaha you are referring to?
5 MR. HUGHES: Grumman.
6 A. What type of sampling equipment would we
7 be using?
8 MS. HESSION: Can we just go off the
9 record for one minute.
10 MR. HUGHES: Yes
11 (Discussion off the record)
12 Q. Mr. Eaton, at the Mono-Kote job sites
13 where testing was done, for example, the Grumman and
14 the Omaha sites, was the reason for the testing to
15 see if people in the area of the job site were being
16 exposed to unacceptable levels of dust?
17 MS. HESSION: Objection. He has already
18 answered that question. He doesn't know why it was
19 done. That's a repetitive question.
20 MR. HUGHES: Then we'll start over.
21 Q. I mean, Mr. Eaton, you were the developer
22 of the dust control program for Construction Products
23 Division; is that correct?
24 A. Yes.
25 Q. And you were asked to set up sampling at

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1 at least two Mono-Kote job sites; is that correct?
2 A. That is correct.
3 Q. But is it your testimony that you have no
4 idea why you were asked to set up sampling programs
5 at those two Mono-Kote job sites?
6 A. I have no knowledge of why the request
7 was made to sample those two job sites.
8 Q. At the time did you have any idea why you
9 were doing what you were doing, other than just
10 following somebody's instruction to set up the
11 sampling?
12 A. At those two job sites, to the best of my
13 knowledge, we were using the membrane filter method.
14 In using the membrane filter method, we were doing it
15 to pick up and analyze, if present, any fibrous
16 material.
17 Q. Would that have included both tremolite
18 and chrysotile?
19 A. It could.
20 Q. Do you know what percentage of Mono-Kote
21 III was chrysotile asbestos?
22 A. Not exactly, no.
23 Q. Do you know if the percentage of
24 chrysotile asbestos in Mono-Kote III was greater than
25 the percentage of tremolite?

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1 A. I have no data to make a comment on it.
2 Q. Do you have any idea?
3 A. I don't think I'm supposed to guess.
4 Q. So you just -- you don't know whether
5 there was more chrysotile in Mono-Kote than there was
6 tremolite?
7 A. Say that again?
8 Q. You don't know whether there was more
9 chrysotile in Mono-Kote than there was tremolite in
10 Mono-Kote?
11 MS. HESSION: Objection to the form.
12 A. There is no data to answer that question.
13 Q. So you never saw anything, the entire
14 time that you were at the Construction Products
15 Division, about the relative percentages of tremolite
16 or chrysotile in Mono-Kote?
17 A. I know approximately the chrysotile
18 asbestos in Mono-Kote, but I don't know the exact
19 amount.
20 Q. What's the approximate amount?
21 A. I'm going to guess it's between --
22 MS. HESSION: Please don't guess. If you
23 can make a reasonable informed approximation, then
24 please tell Mr. Hughes, but if you are just guessing,
25 please don't do that.

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1 A. Then I don't think an estimate is worth
2 it.
3 Q. Do you believe it's over 10 percent?
4 A. I believe that it's probably between --
5 MR. HUGHES: He said he believes. Let
6 him answer the question.
7 MS. HESSION: I haven't stopped him from
8 answering the question, but I caution Mr. Eaton again
9 that if you are guessing, that's not helpful. If you
10 are making a reasonable estimate or you have a
11 reasonable basis, then go ahead.
12 Q. Was the amount of chrysotile in Mono-Kote
13 III greater than 10 percent?
14 A. I don't know.
15 Q. Was it greater than 5 percent?
16 A. I believe it was.
17 Q. Was the amount of tremolite in Mono-Kote
18 III less than 5 percent?
19 A. I don't know.
20 Q. Do you have any idea of how much
21 tremolite was in Mono-Kote III?
22 A. No, I don't.
23 (Document marked as Eaton Exhibit 5
24 for identification)
25 MR. HUGHES: I'm having marked as Eaton

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1 Exhibit 5 a nine-page document. The first page lists
2 the date as July 6, 1970. It's from R.L. Berman to
3 R.E. Schneider, cc to F.W. Eaton. The subject is
4 "Membrane Filter Field Test."
5 Q. Mr. Eaton, just moments ago you said that
6 you had -- you didn't know why the membrane air
7 samplings were done at the Mono-Kote job site at
8 Grumman; is that correct?
9 A. That's correct.
10 MS. HESSION: Excuse me. I believe
11 that's a mischaracterizing the witness's testimony.
12 He says he believes that it was done to detect
13 fibers, but beyond that...
14 Q. The second page of this -- again, we'll
15 have to resort to the little numbers at the bottom,
16 20080535. In the second paragraph, the second
17 sentence, the author states that "It was the purpose
18 of these tests to determine whether or not the
19 threshold limit value of asbestos fibers, as set by
20 the American Conference of Governmental Industrial
21 Hygienists, was exceeded in certain areas."
22 Does that comport with your understanding
23 of why the tests were done?
24 A. I don't know why the tests were done.
25 The test procedure that we used was to determine the

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1 fiber concentration at a job site.
2 Q. Do you remember receiving this memo?
3 A. Yes, I do.
4 Q. Doesn't the author explicitly state what
5 the purpose of the test was?
6 A. (Reviewing document) And I think I just
7 stated, using this test method, it was to determine
8 the fiber concentration. Why the tests were
9 conducted, I do not know.
10 Q. Okay. Okay. I guess we got confused on
11 my question. I asked why. I mean, in one sense the
12 why is to detect fibers, but there might be another
13 reason why we would want to detect the fibers?
14 A. (Nods head)
15 Q. Do you know why they wanted to detect the
16 fibers?
17 A. No, I don't.
18 Q. Do you know who would have known the
19 answer to that question?
20 A. I don't know.
21 Q. Who was Mr. Berman?
22 A. He was a young graduate engineer from
23 Northeastern that came to work for W.R. Grace and was
24 put under my wing for a year.
25 Q. Did he -- was he under your wing at the

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1 time this was written, July 6, 1970?
2 A. Yes.
3 Q. Was he the one that decided that the air
4 sampling should be done at the Mono-Kote sites?
5 A. No.
6 Q. Were you the one?
7 A. No.
8 Q. Mr. Eaton, do you recall receiving
9 information in the middle of July or the middle of
10 1970, July of 1970, about a Philadelphia Department
11 of Public Health committee meeting on the
12 environmental and occupational hazards of asbestos?
13 A. No.
14 (Document marked as Eaton Exhibit 6
15 for identification)
16 MR. HUGHES: I'm marking as Eaton Exhibit
17 6 a memo dated July 24, 1970, from D.G. Powell to
18 T.F. Egan, E-g-a-n. Copied is F.W. Eaton. And the
19 subject is "Philadelphia Department of Public Health,
20 Ad Hoc Committee on Environmental and Occupational
21 Hazards of Asbestos Fibers Meeting, July 23, 1970, in
22 Philadelphia." I'll represent that the four-page
23 memorandum is a summary and description of the
24 meeting in Philadelphia.
25 Q. Do you recall receiving this memorandum?

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1 A. No, I don't.
2 Q. Have you ever seen this before?
3 A. Yes, I have.
4 Q. Did you see it today earlier?
5 A. I believe it was yesterday.
6 Q. Did you read it over yesterday?
7 A. No. I looked at it.
8 Q. Are you currently employed by Grace?
9 A. No, I'm not.
10 Q. Is counsel representing you personally?
11 A. Yes, sir.
12 Q. Are you paying her?
13 A. No, sir. I'm retired from W.R. Grace.
14 Q. Is she doing it for free?
15 A. I have no knowledge.
16 Q. When did you --
17 MS. HESSION: Would you like me to send
18 my bill to you, Mr. Hughes? I would be happy to do
19 it.
20 Q. When did you contract with her to
21 represent you?
22 A. I did not. This was handled by W.R.
23 Grace legal.
24 Q. When were you informed that she was
25 representing you?

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1 A. I believe in a telephone conversation
2 approximately a week ago.
3 Q. In the memo the writer notes, in the
4 second paragraph, second sentence, in talking
5 about -- let's start over. Let's make it easier.
6 The first paragraph of the memo is
7 talking about this meeting in Philadelphia, the
8 objective of which is to recommend legislation and
9 regulation with regard to sprayed fireproofing. And
10 in the second paragraph, second sentence, the writer
11 notes that "Close cooperation between New York City
12 and Philadelphia governments was evident."
13 Do you have any idea why a writer would
14 make that point?
15 A. I have no knowledge.
16 Q. You have no idea why?
17 A. No.
18 Q. On the second page, the second paragraph,
19 first sentence --
20 A. What?
21 Q. Page 2, second paragraph, first sentence,
22 the writer notes that "The prevailing feeling of the
23 Committee was that asbestos free formulations are
24 needed now, and will be available in time."
25 Did you have any opinion at this time

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1 about whether or not the Construction Products
2 Division should be working toward formulating an
3 asbestos-free Mono-Kote?
4 A. No.
5 Q. You had no opinion?
6 A. No.
7 Q. Were you ever asked your opinion?
8 A. No.
9 Q. Do you know if anybody at this time in
10 the Construction Products Division was discussing
11 with others the formulation of an asbestos-free
12 Mono-Kote?
13 A. Not to my knowledge, at this time.
14 Q. Did you ever, during your tenure at the
15 Construction Products Division, hear of people
16 talking about the need for an asbestos-free
17 Mono-Kote?
18 A. Yes.
19 Q. When was the first time that you heard
20 that?
21 A. Just prior to the promulgation of EPA's
22 and OSHA's standards on asbestos.
23 Q. And when would that have been?
24 A. Whenever the regulations were
25 promulgated. '73?

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1 Q. So that's the first you heard of anyone
2 in Grace discussing asbestos-free Mono-Kote?
3 A. To the best of my knowledge, that is
4 correct.
5 Q. Who at Grace would have been in charge of
6 investigating the possibility of manufacturing an
7 asbestos-free Mono-Kote at this time?
8 A. I don't know.
9 Q. Do you know at this time who in the
10 Construction Products Division was responsible for
11 product development?
12 MS. HESSION: This is -- I'm sorry, are
13 you referring to July of 1970, Counsel?
14 MR. HUGHES: This time, July 24, 1970.
15 A. I do not know.
16 Q. Do you know what department in the
17 Construction Products Division in July of 1970 would
18 have been responsible for new product development?
19 A. It would be the research department.
20 Q. Do you know who was head of the research
21 department in July of 1970?
22 A. The total research department?
23 Q. Do you know who the head was of the
24 research?
25 A. Of the total research?

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1 Q. Of the research department that would
2 have been responsible for developing an asbestos-free
3 Mono-Kote.
4 A. I know who was head of the research
5 department. I do not know who the individual was
6 that was responsible for any reformulation of
7 Mono-Kote.
8 Q. Who was the head of the research
9 department?
10 A. I believe his name was Vance Dodson.
11 Q. He is not listed as one of the recipients
12 of this memo, is he?
13 MS. HESSION: We'll stipulate, Counsel,
14 that Mr. Dodson's name does not appear on the cc list
15 on Page 1 of Exhibit 6.
16 MR. HUGHES: Okay. That's fine.
17 Q. Did you say that you recalled receiving
18 this memo?
19 A. I don't remember receiving it.
20 Q. At this time, or before July 1970 or
21 before, were you ever informed that anybody felt that
22 an asbestos-free formulation of Mono-Kote was needed?
23 A. I don't remember hearing it.
24 Q. And just so we have it straight, the
25 first time you recall hearing about it was when the

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1 OSHA regulations and the EPA regulations came into
2 effect?
3 A. I would say it would probably be six to
4 nine months before the promulgation of those
5 regulations.
6 Q. When it was clear --
7 A. To the best of my knowledge.
8 Q. When it was clear that those regulations
9 were going to take effect?
10 A. That's correct.
11 Q. In the dust control program, what kind of
12 microscopes were used to analyze the monitors that
13 were taken from, say, the Grumman job site?
14 MS. HESSION: Let me just object to the
15 form of the question. Are you talking about the
16 filters?
17 MR. HUGHES: No, the microscopes.
18 MS. HESSION: But are you talking about
19 what microscopes were used to analyze the filters?
20 MR. HUGHES: Yes. Whatever is analyzed
21 by the microscope.
22 Q. Whatever you look at through the
23 microscope, what kind of microscope was it?
24 A. It is a phase contrast.
25 Q. Do you know what the magnification of

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1 that is?
2 A. I do not remember.
3 Q. Did the Construction Products Division
4 sampling program always use phase contrast
5 microscopes to analyze the filters from sampling
6 pumps?
7 THE WITNESS: Would you repeat the
8 question, please.
9 (Question read)
10 MS. HESSION: Do you mind?
11 MR. HUGHES: Not at all.
12 (The witness and his counsel confer)
13 MR. HUGHES: I can withdraw the
14 question. I can make it a lot easier here.
15 (Discussion off the record)
16 (Document marked as Eaton Exhibit 7
17 for identification)
18 MR. HUGHES: I've marked this as Eaton
19 Exhibit No. 7. It's a memo dated July 31, 1970, from
20 R.L. Berman to R.E. Schneider. The subject is
21 "Mono-Kote Job Site Testing," a one-page memo.
22 Q. Can you take a minute to read over this,
23 Mr. Eaton.
24 A. (Reviewing document).
25 Q. I'll represent that this memo by Mr.

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1 Berman is discussing the monitors used at the job
2 site testing in Long Island and in Omaha at the
3 Mono-Kote job site testing, as evidenced by the
4 subject matter of the memo.
5 The last paragraph talks about some
6 monitors being delivered to a Mr. Peters of the
7 Arthur D. Little Company, and Mr. Schneider, in the
8 last paragraph says, "The purpose of the delivery was
9 to have Mr. Peters look at the filters under an
10 electronic microscope." And he goes on to say that
11 electronic microscopes have a much higher rate of
12 magnification than the 430 times magnification which
13 is used for our analysis purposes. In the last
14 sentence he concludes, "He is to look for fibers
15 which exist, but cannot be seen at 430 times
16 magnification."
17 Do you remember receiving a copy of this
18 memo?
19 A. Not really.
20 Q. Do you remember the first time that
21 sampling monitors were examined under electron
22 microscopes at the Construction Products Division?
23 MS. HESSION: Objection to the form and
24 lack of foundation.
25 A. I know that ADL, and I believe it is Dr.

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1 Peters, did further analysis on samples that CPD
2 had. I don't remember the dates.
3 Q. Was it your understanding at the time
4 that the electron microscope analysis did, as Mr.
5 Berman states, look for fibers which exist but cannot
6 be seen at the 430 times magnification?
7 A. I personally don't think he was qualified
8 to make that statement.
9 Q. Mr. Berman?
10 A. Berman.
11 Q. Did you have any understanding at this
12 time, July 1970, whether an electron microscope was
13 better able to detect samples of fibers in a monitor
14 than was a phase contrast microscope?
15 MS. HESSION: Objection to form.
16 A. Did I personally?
17 Q. Yes.
18 A. I had no knowledge.
19 Q. In your position as the environmental
20 coordinator, was there ever a time during your tenure
21 at the CPD that you recognized that electron
22 microscopes were better able to defect fibers than
23 phase contrast?
24 A. That was not my position, my
25 responsibility --

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Q. I see.
A. -- my knowledge. I was...
Q. Okay. Do you know if CPD used electron microscopes to analyze the filters after July of 1970, rather than using phase contrast?
A. I have no knowledge. The standard procedure was the phase contrast.
Q. Do you know if the Construction Products Division ever went to using an electron microscope to analyze the filters as opposed to the phase contrast?
MS. HESSION: Objection to form and lack of foundation.
MR. HUGHES: I asked him if he knew if they did.
A. I have no knowledge.
Q. So --
MS. HESSION: May I have a minute before you start your next question.
(The witness and his counsel confer)
Q. Did the sampling undertaken by the dust control program at CPD always use phase contrast microscopy to analyze air samples?
A. To the best of my knowledge, yes.
Q. Does that imply that you were never aware of any situations in which a filter from the sampling

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program was analyzed under an electron microscope?
MS. HESSION: I'm going to object to the form of the question.
MR. HUGHES: Pretty basic.
MS. HESSION: Well, he answered the question. What it implies or not is something else. If you have a different question, why don't you ask him a different question.
MR. HUGHES: It is a yes/no question. I'm just trying to get it clear.
Q. So, to your knowledge, no sample filter from an air monitoring job in the dust control program was ever analyzed by an electron microscope?
A. I do not know of any sample being analyzed by an electron microscope.
Q. Did you at the time have any opinion about the relative merits of an electron microscope versus a phase contrast microscope?
A. I was not qualified to make a judgment.
MR. HUGHES: This might be a good time for a break, for me anyway.
(Luncheon recess)

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AFTERNOON SESSION
BY MR. HUGHES:
Q. We're back after a short lunch break. Mr. Eaton, did the Construction Products Division undertake data collection to determine if there were health safety problems with specifically Mono-Kote?
A. Not to my knowledge.
(Document marked as Eaton Exhibit 8 for identification)
MR. HUGHES: I've marked as Eaton Exhibit 8 a two-page document. The first page is a memo from H.A. Brown to R.E. Schneider dated August 13, 1970. The subject is "Mono-Kote Data for Health Safety Program." And the second page is a memo from H.L. Waxman/D.J. Powell to H.A. Brown dated August 7, 1970.
(The witness reviews document)
Q. Mr. Eaton, have you seen either of these documents before?
A. I don't think I've ever seen the first one, the one from Brown to Schneider.
Q. The one dated August 13th?
A. Right.
Q. How about the one August 7th, 1970?
A. I was copied -- I don't remember this

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one.
Q. The second page, the one on which you were copied, the subject is "Recommended Data Collection for Mono-Kote Health Safety Program."
A. Excuse me. Can I just read this second paragraph.
Q. Sure.
A. (Reviewing document)
Q. On the second page, you don't recall having ever seen this?
A. No, I don't.
Q. Who is Mr. Waxman?
A. I don't know.
Q. Who is Mr. Powell?
A. I don't know.
Q. Who is Mr. Brown?
A. Harry Brown was -- I believe his title was executive vice-president of CPD, W.R. Grace.
Q. In Parentheses 1 in this letter dated August 7, 1970, as part of the recommended data collection, it says, "Collect air samples from plenum areas in buildings insulated with Mono-Kote and sprayed fibrous coatings."
Were you ever aware, while you worked at CPD, that Grace intended to collect air samples from

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1 plenum areas in buildings insulated with Mono-Kote?
2 MS. HESSION: Objection to the form.
3 A. In this period of time, no.
4 Q. Okay. At any time that you worked at
5 Grace was the question.
6 A. At any time that I worked at Grace?
7 Q. Yes.
8 A. I was aware that tests had been done.
9 Q. When did you become aware of that?
10 A. I don't remember. It would have been
11 after this period of time.
12 Q. That's what I was -- after August of
13 1970?
14 A. Yes.
15 Q. Do you remember who told you that such
16 tests -- let me back up. Did you at some time
17 become aware that such tests had been done?
18 A. In air plenums?
19 Q. Yes.
20 A. And I answered that in the previous
21 question. Yes.
22 Q. Okay. I was not sure whether you stated
23 that you had become aware that they had been done or
24 that people had been planning to do them.
25 A. That they had been done.

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1 Q. Okay. Do you know from whom you heard
2 that?
3 A. No, I don't.
4 Q. And you don't know when you heard it
5 except from the time period between August 1970 and
6 the time you retired?
7 A. Yes.
8 Q. Do you know why this air sampling was
9 done?
10 A. In this memo?
11 Q. No, in -- I'll be referring to -- you
12 just stated that you learned at some time that the
13 tests had been done, and so that's what I'll be
14 referring to. Do you know why those tests were
15 done?
16 A. To determine if there were any fiber
17 concentrations in the air plenum.
18 Q. Do you know who requested that those
19 tests be done?
20 A. I do not know.
21 Q. Do you know where they were done?
22 A. No, I do not.
23 Q. Did you have any involvement in setting
24 up the sampling procedures?
25 A. No.

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1 Q. In Parentheses 3 on this second sheet
2 dated August 7, 1970, it talks about all data to date
3 being only on Mono-Kote, and then the author says,
4 "We need data on fibrous asbestos sprayed materials
5 for comparison purposes."
6 Do you have any idea of why they needed
7 data from fibrous asbestos sprayed materials for
8 comparison purposes?
9 A. I think it was a comparison basis. I
10 mean, test.
11 Q. Did CPD manufacture fibrous asbestos
12 sprayed material?
13 A. Repeat the question, please.
14 Q. Did CPD manufacture a fibrous asbestos
15 sprayed material?
16 A. No.
17 Q. So the comparison purposes reference here
18 would be to compare Mono-Kote to some other product;
19 is that --
20 A. I believe that was the intent.
21 Q. Do you know why they would want to
22 compare Mono-Kote with some other product as far as
23 sampling for fibers would be concerned?
24 A. Only as a comparison.
25 Q. Do you have any idea what they would do

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1 with such a comparison once they had it?
2 MS. HESSION: Objection to the form.
3 A. I don't know. I didn't request the
4 sampling.
5 Q. Did you hear anything about it at the
6 time?
7 A. No.
8 Q. The comparison between Mono-Kote and the
9 asbestos sprayed material?
10 A. "At the time" being August?
11 Q. Right.
12 A. No.
13 Q. Did you hear it about it afterward?
14 A. Yes.
15 Q. Did you hear about it at the same time
16 you heard about the tests referenced in Parentheses
17 1?
18 A. No.
19 Q. So those were two distinct bits of
20 information, one the collection of air samples from
21 the plenum areas, and another piece of information
22 was data on fibrous asbestos sprayed materials for
23 comparison purposes, two distinct items of
24 information that were being sought?
25 MS. HESSION: Objection to form.

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A. I think you have --
Q. Let me ask a question. Maybe I can clear it up. As far as one went, I asked you if you knew it at the time this memo was dated, and you said no?
A. Uh-huh.
Q. And then I asked if you could recall when you did learn of collecting air samples from plenum areas, and I think you said you didn't know.
A. Uh-huh.
Q. The same with 3. I asked, did you know at the time the memo was written, and you said no. Then I'll start over. Do you remember when you received information that Grace was planning on doing a comparison between Mono-Kote and fibrous asbestos sprayed materials for comparison purposes?
MS. HESSION: Objection to the form.
A. I don't have any -- I do not know when they did it and why they did it at that time. I knew that tests had been conducted.
Q. When did you know that tests had been conducted?
A. I can't give you a specific date, except that it's after the mid-1970 period.
Q. Do you know what the results were of the comparison between Mono-Kote and the fibrous asbestos

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sprayed materials?
A. No, I do not.
Q. In Parentheses 4, the writer talks about using an electron microscope to analyze the samples. Do you know if this indicated a change on Grace's part to analyze samples using an electron microscope as opposed to a phase contrast microscope?
MS. HESSION: Objection to form.
A. I have no knowledge on this.
Q. Do you know why you were copied on this memo?
MS. HESSION: Objection. He has testified he doesn't recall receiving it.
MR. HUGHES: It's a different question.
MS. HESSION: Are you just referring to why his name appears under the cc on the page?
MR. HUGHES: It was a very simple question.
Q. Do you know why you were copied on this memo?
A. I do not know why I was copied, no.
Q. Did you generally receive copies of memos concerning the conducting of air sampling on in-place Mono-Kote product?
A. No.

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Q. Would it be fair to characterize this as a rare event, then?
MS. HESSION: Objection to the form.
A. I would say that it was a rare event.
Q. Do you know why, if you were the head of the environmental compliance program at Grace, that you wouldn't be informed about tests that were done on Mono-Kote for detection of fibers?
MS. HESSION: Objection to the form.
A. As environmental coordinator for Construction Products Division, my main responsibility was in the areas of air, water, waste, hazardous waste with our facilities. Any -- I am not an industrial hygienist. I have no training in industrial hygiene. It was more a collateral duty.
Q. Did you attend meetings to discuss the Mono-Kote III health safety program?
A. Not to my knowledge.
Q. Do you know if there was a Mono-Kote III health safety program?
A. Not to my knowledge.
(Document marked as Eaton Exhibit 9 for identification)
MR. HUGHES: I'm marking as Eaton Exhibit 9 a memo from the Construction Products Division

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dated August 17, 1970, from H.L. Waxman to -- I'll just give the last names -- Powell, Egan, Eaton, Brown and Kostic, K-o-s-t-i-c. The subject of the memo is "Meeting to Discuss MK3 Health Safety Program."
Q. Mr. Eaton, do you recall receiving this memo?
A. No, I don't.
Q. Have you ever read this memo before?
A. No, I haven't. To the best of my knowledge, I have not seen this memo.
Q. Is "MK3" an abbreviation for Mono-Kote III?
A. Yes, it is.
Q. Was Mono-Kote III being manufactured in August of 1970, to your knowledge?
A. Yes, it was.
Q. Had you, at the time of this memo, ever heard of the health safety program of Mono-Kote III?
MS. HESSION: Objection. He has already testified that he has no knowledge whether there was such a program.
A. I have no knowledge.
Q. During your entire tenure at Grace, were you ever aware of a health safety program of

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1 Mono-Kote III?
2 MS. HESSION: Objection. Asked and
3 answered.
4 A. No.
5 Q. What kind of asbestos products did
6 Mono-Kote III contain in 1970?
7 MS. HESSION: Objection to form.
8 A. Your question is vague.
9 Q. What kind of asbestos fibers did
10 Mono-Kote III contain in 1970?
11 A. To the best my knowledge, it contained
12 chrysotile asbestos.
13 Q. Did you know that in 1970?
14 A. Yes, I did
15 (Document marked as Eaton Exhibit 10
16 for identification)
17 MR. HUGHES: I'm marking as Eaton Exhibit
18 10 a Construction Products Division interoffice
19 correspondence dated August 6, 1971, to Fred Eaton
20 from Walt Pickthall.
21 Q. Mr. Eaton, do you recall receiving this
22 memo?
23 A. I do not recall receiving it.
24 Q. Do you recall having ever read this memo?
25 A. Yes.

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1 Q. Do you recall reading this memo in 1971?
2 A. I don't recall receiving it or reading
3 it.
4 Q. Have you read this in the past week?
5 A. Yes, I have.
6 Q. Did you read it yesterday?
7 A. Yes, I did.
8 Q. Did counsel supply you with a copy of
9 this?
10 A. Yes --
11 MS. HESSION: Objection. Please don't
12 answer questions about anything that we did or said
13 in our meetings yesterday.
14 Q. First sentence, do you know what Mr.
15 Pickthall was referring to when he said that someone
16 wanted to know how much of our total production was
17 No. 4? What does No. 4 refer to?
18 A. It is a size concentrate, vermiculite
19 concentrate.
20 Q. Do you know why Mr. Pickthall told you he
21 got nervous, in fact, why, quote, naturally I got
22 nervous, unquote?
23 A. I don't know why he got nervous, no.
24 Q. What other types of vermiculite
25 concentrate are there, other than No. 4?

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1 A. At this time, there was aught, 1, 2, 3
2 and 5. 5 was nonexpandable.
3 Q. Does the gradation in numbers in
4 referring to the concentrates correlate to any
5 property that has a corresponding increase or
6 decrease in --
7 A. Physical size, yes.
8 Q. So the -- was it the higher the number,
9 the bigger the concentrate?
10 A. No.
11 Q. The opposite?
12 A. Right.
13 Q. Opposite way. So No. 1 was bigger, and
14 then No. 5 was smaller than No. 1?
15 A. That's correct.
16 Q. In the manufacture of Mono-Kote, was it
17 preferable to use any one of these concentrates
18 rather than another?
19 A. The formulation specified a concentrate
20 size, and I had no knowledge as to why.
21 Q. The last paragraph says, "We'll be
22 careful about keeping the cyclones clean and getting
23 as much No. 4 out at night as we can."
24 What does "getting as much No. 4 out at
25 night as we can" refer to?

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1 A. Produce as much No. 4 concentrate or
2 exfoliate as much No. 4 concentrate as possible
3 during nighttime.
4 Q. Is there any reason why CPD would want to
5 get as much No. 4 out at night as opposed to the day?
6 MS. HESSION: Objection. No foundation.
7 MR. HUGHES: Well, it says right here,
8 "as much No. 4 out at night as we can."
9 MS. HESSION: Objection to the form of
10 the question. No foundation.
11 A. With the control devices that were on
12 those furnaces at that time, there was a visible
13 emission from expanding the finer grades
14 concentrates.
15 Q. So is the reason to get as much out at
16 night so that the visible emissions were not
17 visible?
18 MS. HESSION: Objection to form.
19 A. Yes.
20 Q. Concerning Construction Product
21 Division's vermiculite expansion plants, was it CPD's
22 approach that controls to lower particulate emissions
23 would not be considered until a citation was issued
24 by local authorities?
25 MS. HESSION: Objection to form.

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1 A. Repeat the question, please.
2 Q. Concerning Grace's Construction Products
3 Division vermiculite expansion plants, was it CPD's
4 approach that controls to lower particulate emissions
5 would not be considered until a citation was issued
6 by local authorities?
7 A. No.
8 (Document marked as Eaton Exhibit 11
9 for identification)
10 MR. HUGHES: I'm introducing Eaton
11 Exhibit 11. It's a memorandum to R.M. Coquillette,
12 C-o-q-u-i-l-l-e-t-t-e, dated September 21, 1971.
13 This is a seven-page document dated September 21,
14 1971. The last page indicates that it was prepared
15 by R.H. Lafferty and indicates that copies were sent
16 to Eaton, Gooda -- it is cut off -- Graf, and it
17 appears to be Vining.
18 Q. Do you recall receiving a copy of this
19 memorandum?
20 A. I do not.
21 Q. Have you ever seen a copy of this
22 memorandum?
23 A. No, I haven't.
24 Q. Never in your life?
25 A. I do not remember receiving a copy of

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1 this memorandum, and I have never seen it until
2 today, to the best of my knowledge.
3 Q. On the first page, would you look at the
4 paragraph labeled 1, where the first sentence states,
5 "Improved particulate emission controls will not
6 normally be considered until a citation is issued by
7 local authorities."
8 Did you understand that to be the
9 Construction Products Division's approach to the
10 pollution control problems?
11 A. (Reviewing document) This was not my
12 approach nor the approach taken by CPD.
13 Q. In the second paragraph of the first
14 page, the second sentence, it states, "Basis review
15 of the entire situation with Mr. Fred Eaton, Project
16 Engineer for their expansion plants, we conclude that
17 CPD's approach to their pollution control problems is
18 reasonable. This approach is briefly:
19 "Improved particulate emission controls
20 will not normally be considered until a citation is
21 issued by local authorities."
22 Is the statement in this memorandum
23 simply incorrect, then?
24 MS. HESSION: Objection to the form.
25 Which statement are you referring to, Counsel?

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1 MR. HUGHES: The long statement that I
2 just read, starting with "basis" and ending with
3 "authorities."
4 MS. HESSION: I don't know how this
5 witness can know whether somebody made a conclusion
6 or not, if it wasn't him. I object to the form of
7 this question.
8 Q. Do you remember reviewing the entire
9 situation with Mr. Lafferty?
10 A. I don't remember. Can I say more?
11 MS. HESSION: Is that your answer to his
12 question?
13 THE WITNESS: That's the answer to the
14 question.
15 Q. The answer is what?
16 A. I don't remember, no.
17 Q. You don't remember reviewing --
18 A. No.
19 Q. -- the situation of particulate emissions
20 from vermiculite expansion plants with Mr. Lafferty?
21 A. I don't remember.
22 * Q. Was your view about the implementation of
23 improved particulate emission controls different from
24 the first sentence in the paragraph labeled 1?
25 A. Yes, it is.

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1 Q. It was?
2 MS. HESSION: I'm sorry, can I just hear
3 the question again, before the witness's answer.
4 (* Question read)
5 Q. I was asking, on the date that this memo
6 was written, September 21, 1971, was your approach to
7 the implementation of particulate emission control
8 different from the first sentence of the paragraph
9 labeled No. 1?
10 A. Yes, it was.
11 Q. How did it differ?
12 A. The approach was that in 1969, when we
13 became CPD, and the Zonolite Division became part of
14 CPD, all of the Zonolite facilities were in very poor
15 condition. Some facilities were under a compliance
16 schedule with regulatory agencies; some were not. It
17 was impossible to take all 30, 35 expanding plants
18 and bring them up to our standards all at once.
19 The approach that was taken was that
20 those facilities that were under some sort of a
21 compliance schedule or citation were -- the
22 corrective action was implemented on those plants
23 first. Other plants where we did not comply, and we
24 received a notice of violation, we proceeded with a
25 request for variance from the standards and submitted

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1 an implementation plan with a time schedule.
2 This was the procedure that was followed,
3 to the best of my knowledge or recollection, for all
4 of the plants. And that implementation plan could
5 have been one to upgrade existing facilities or shut
6 down existing facilities and build a new one.
7 Q. Given that view, could you just explain
8 to me how that differs from Sentence 1 in the
9 paragraph labeled No. 1.
10 A. This is -- Sentence 1 in the paragraph
11 numbered 1 is not the way that we approach the
12 compliance of the expanding plants. We did not wait
13 until a citation was issued.
14 Now, if a citation was issued, we
15 followed that up with a compliance program and a
16 request for variance.
17 Q. So Mr. Lafferty was just mistaken in his
18 description of the approach that CPD took to
19 pollution control problems at the vermiculite
20 expansion plants?
21 A. I can't speak for Mr. Lafferty.
22 Q. I'm not asking you to speak for him. I'm
23 asking, is it your opinion now that Mr. Lafferty, on
24 September 21, 1971, was mistaken about the CPD's
25 approach to pollution control problems at CPD's

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1 vermiculite expansion plants?
2 A. Yes.
3 Q. Have you ever had your deposition taken
4 before?
5 A. Yes, I have.
6 Q. Do you know how many times?
7 A. I believe it was twice.
8 Q. Do you know if the answer that you gave
9 about whether or not this was what you took to be the
10 CPD's approach in 1971, the answer that you just gave
11 me now is consistent with the other answers that you
12 gave in your prior depositions?
13 MS. HESSION: Objection to form. No
14 foundation.
15 A. I believe it is.
16 Q. On the second page of this memorandum,
17 Paragraph No. 4, it says, "CPD cannot afford to add
18 dust controls to all plants at one time. They plan
19 to tackle them singly, as they are forced to comply,
20 and buy as much time as possible."
21 Does that represent your approach to the
22 problem at the time this was written in September
23 1971?
24 A. I don't think that is the approach that
25 CPD was taking.

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1 Q. So is it your opinion today that Mr.
2 Lafferty was simply mistaken?
3 A. Yes. I will say that in our variance
4 requests, we did try to, quote, buy as much time as
5 possible.
6 Q. But you disagree with, I take it, the
7 part of the sentence that states that CPD plans to
8 tackle the plants singly, as they are forced to
9 comply? Is that what you disagree with --
10 A. I disagree with the word "forced."
11 Q. But a federal or state or municipal or
12 regulatory agency can force or at that time certainly
13 could force a plant to comply with regulations,
14 couldn't it?
15 A. Yes, it could.
16 Q. So is there disagreement that -- are you
17 saying that CPD would comply with regulations before
18 they were forced to?
19 MS. HESSION: Objection to the form. The
20 witness has said what he said. If you have a
21 specific question.
22 MR. HUGHES: I have several specific
23 questions, and that was one them.
24 Q. I'm just asking, did the plants comply
25 with federal, state, municipal regulations, whatever

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1 regulations governed it, before the plant was forced
2 to?
3 MS. HESSION: Objection to the form.
4 A. There were situations when we felt that
5 we were in compliance. There were situations where
6 we did not know whether we were in compliance. And
7 in those cases, there were citations issued for us to
8 show that we were or were not in compliance with the
9 established emission standards or regulations.
10 Q. If you were -- if you had to show
11 whether or not you were in compliance, would the
12 regulatory agency tell you, "Yes, you are in
13 compliance," or "No, you are not in compliance"?
14 A. Say that again.
15 Q. You just testified, I believe, that
16 sometimes you didn't know if you were in compliance,
17 and the regulatory agency would ask you to provide
18 some documentation --
19 A. Right.
20 Q. -- or proof that you were in compliance;
21 is that correct?
22 A. Yes.
23 Q. When you presented your side, your data
24 or your argument that you were in compliance, would
25 you receive a response from the regulatory agency?

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A. Yes, we would.
Q. And would that response consist of one of two answers, "Yes, you are in compliance," or "No, you aren't in compliance"?
A. Yes.
Q. If you weren't in compliance, what would you do?
A. This would be when we would initiate a program of compliance and, if necessary, request a variance.
Q. So is it fair to say that there were times when you initiated emission control programs only after you were informed that you would be forced to comply with the regulation?
MS. HESSION: Objection to the form.
A. I don't like the use of the word "forced."
Q. Okay.
A. If we were in noncompliance, then we took steps to comply.
Q. But your testimony is that it was not the practice of CPD to wait until they were found to be not in compliance before instituting an emissions control program?
MS. HESSION: Objection to the form of

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that question. And I believe that the witness has answered that question no less than three or four or five times already. He can answer again.
A. And I have answered it before, but it was not CPD's position to wait until forced? Is that the words that you used?
Q. Yes, wait until you were forced -- actually, the words that Mr. Lafferty used, of CPD.
In those instances in which CPD did not institute an emission program before they were informed that they had to comply with some regulations, did CPD not institute those programs even though they had the technology and experience with particulate removal systems to bring the plants into compliance with local laws?
MS. HESSION: Objection to form.
Q. I'll try to put it simpler. Even before a plant was told that it wasn't in compliance and then instituted a program, it could have instituted a program before that, couldn't it have?
A. That is correct.
Q. And why didn't they?
MS. HESSION: I'm going to object that the witness has answered this question already.
A. As previously stated, CPD inherited X

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number of Zonolite expanding plants. There were just so many people that could do the implementation work of new facilities, new controls, and it was just impossible to take all, let's say, 25 plants and either upgrade them, shut them down and build new plants, all at the same time.
The approach that was taken was that, as I previously stated, any plant that was under a compliance schedule was -- the work was initiated first on that plant, and then as other plants -- I think we tackled them on the basis of the severity of the conditions. And there were times when, during this overall implementation period, a CPD Zonolite plant was issued a citation for violation of a standard.
* Q. Did you, in your role with the CPD, always respond timely to notices of violations issued by industrial safety service organizations?
A. Would you clarify "industrial safety organizations."
Q. Yes. A federal, state or local regulatory organization whose job it is to make sure that plants are in compliance with local regulations. **
MS. HESSION: Objection to the form.

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A. Counsel, we were talking about really, I think, the emissions from these facilities, and now you brought in another area of concern.
MS. HESSION: Can you answer the question that was asked? If not, just say so.
Q. And then I'll --
A. Would you repeat the question, please.
(Record read from * to **)
A. As far as those that had to do with emissions from a facility, air, water, solid waste, hazardous waste, yes. I was not responsible for any real notices as far as -- that may come from a Department of Labor.
Q. You didn't have responsibility for that?
A. No.
MS. HESSION: Do you need a break?
THE WITNESS: Can I clarify?
MS. HESSION: Can we have a minute.
(The witness and his counsel confer)
(Document marked as Eaton Exhibit 12 for identification)
MR. HUGHES: I've marked as Eaton Exhibit 12 a memo from F.W. Eaton to W.R. Wright, dated November 1, 1971. The subject is "Weedsport - Notice of Violation, State of New York Department of Labor,

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1 Division of Industrial Safety Service."
2 Q. Take a minute to just read the first page
3 of this document.
4 A. (Reviewing document)
5 Q. In the second paragraph, Mr. Eaton --
6 MS. HESSION: I think he is still
7 reviewing it. Could you give him a minute.
8 MR. HUGHES: Sure.
9 A. You have to remember, this is 25 years
10 ago. You just want me to read the first page?
11 Q. Yes. I'm just going to ask you about the
12 first page. You can read it all if you want.
13 MS. HESSION: Why don't you see what it
14 is so you understand the context.
15 A. (Reviewing document)
16 MS. HESSION: The third page of the
17 exhibit you handed us, Counsel, is illegible, as is
18 the fourth page.
19 A. I cannot read the notice of violation and
20 order to comply.
21 Q. Okay. On the first page, the second
22 paragraph -- actually the first paragraph, you are
23 stating to Mr. Wright that Weedsport has received a
24 final notice of violation. Was Weedsport one of the
25 vermiculite plants?

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1 A. Yes, it was.
2 Q. And you state that "Requirements of the
3 attached Notice of Violation have been covered in one
4 form or another," et cetera. The last sentence of
5 the second paragraph, you state, "It is safe to say
6 that I have procrastinated on answering this Notice
7 of Violation."
8 Did you often procrastinate in answering
9 notices of violation?
10 A. No, sir.
11 Q. Do you remember any other instances where
12 you procrastinated other than this case?
13 A. No, and I don't know what the case is
14 about, yet.
15 MS. HESSION: I object to continued
16 questioning about this document because the third and
17 fourth pages are illegible. Apparently the witness
18 cannot ascertain what the first and second pages are
19 referring to, and he is having difficulty with your
20 questions. If you have a legible copy, we could
21 proceed.
22 Q. Do you remember CPD getting a notice of
23 violation from the State of New York Department of
24 Labor, Division of Industrial Safety Service, for the
25 Weedsport plant?

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1 A. I know that we had contact with the
2 Department of Labor. When I say "we," that I had
3 contact with them.
4 MS. HESSION: Do you have in mind the
5 question pending, Mr. Eaton?
6 THE WITNESS: Excuse me?
7 MS. HESSION: There is a question
8 pending. I'm not sure if he lost it. Maybe the
9 reporter could read the pending question back to him.
10 MR. HUGHES: I forgot it.
11 (Question read)
12 A. My answer to that is today I do not
13 remember receiving a notice of violation from the
14 Department of Labor. I do remember meeting with the
15 Department of Labor. I do not remember what the
16 subject was about.
17 Q. Did you ever suspect that the CPD's dust
18 sampling or measuring techniques may have been giving
19 CPD false results?
20 MS. HESSION: Objection to the form of
21 the question. Do you need to hear it again?
22 THE WITNESS: Let me hear it again.
23 (Question read)
24 A. Not that I can remember.
25

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1 (Document marked as Eaton Exhibit 13
2 for identification)
3 MR. HUGHES: I'm introducing as Eaton
4 Exhibit 13 a memo or letter dated December 17, 1971,
5 from F.W. Eaton to O.F. Stewart, and then with a
6 slash "Enoree," E-n-o-r-e-e, subject, "Dust Survey at
7 Trenton and Easthampton."
8 Q. Take a minute to look at that.
9 A. Read this memo?
10 Q. It will be easier -- I can just ask you
11 a question, if you want to stop.
12 MS. HESSION: Why don't we take a minute
13 or two to look at it.
14 MR. HUGHES: Sure.
15 A. (Reviewing document) I've finished
16 reading the December 17 memo.
17 Q. Do you recall writing this?
18 A. No.
19 Q. In the first paragraph, you talk about
20 some tests run by Environmental Analysts --
21 MS. HESSION: Referring to the second
22 paragraph?
23 MR. HUGHES: The second paragraph, right.
24 Q. And the second to the last sentence in
25 the second paragraph, which starts with "Since

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1 fiber," reads, "Since fiber counts measured by the
2 Bureau of Mines at Libby seem to parallel in
3 magnitude those results obtained by Environmental
4 Analysts" -- and that's a capital E, capital A,
5 indicating to me that it's a company?
6 A. Uh-huh.
7 Q. -- "it looks as if our present sampling
8 and/or measuring techniques may be giving us false
9 results."
10 Do you know what that is referring to?
11 A. I don't remember.
12 Q. Do you know whether the fiber counts
13 measured by the Bureau of Mines at Libby and by
14 Environmental Analysts were higher than the fiber
15 counts that you had been getting using your present
16 sampling and measuring techniques?
17 A. I don't remember.
18 Q. Do you remember being concerned that your
19 sampling or measuring techniques may have been giving
20 you false results?
21 A. I don't remember any concern that I had.
22 Q. As chief of environmental compliance, why
23 wouldn't you have been concerned with some indication
24 that your present sampling or measuring techniques
25 may have been giving you false results?

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1 MS. HESSION: Objection. Don't answer
2 that question. That's arguing with the witness,
3 Counsel. If you have a question to ask him, please
4 ask him, but he has answered your question, that he
5 doesn't recall any concerns. Don't argue with him.
6 MR. HUGHES: I'm just asking that as the
7 head person at CPD --
8 MS. HESSION: I believe you are arguing
9 with the answer he gave you. You may not like it,
10 but that was his answer.
11 Q. So your testimony is that you don't
12 recall having any concern about the possibility that
13 your present, in 1971, sampling or measuring
14 techniques may have been giving you false results; is
15 that your testimony?
16 A. I don't think I stated I didn't have any
17 concerns. I had no knowledge that I felt that the
18 sampling technique was giving us false results.
19 Q. Now I'm confused.
20 A. I think it is a use of words.
21 Q. You state here, "It looks as if our
22 present sampling and/or measuring techniques may be
23 giving us false results." Was that of concern to you
24 at this time?
25 A. If I wrote that, which I did, then it

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1 must have been a concern. I don't remember it being
2 a concern.
3 Q. Do you recall if anything was done to see
4 if your sampling and measuring techniques in December
5 of 1971 were giving you false results?
6 A. If you can remember a previous statement
7 that I made, and that is I am not an industrial
8 hygienist, at the time that this work was going on --
9 MS. HESSION: Let me just stop you and
10 ask you to answer Mr. Hughes's question, the one that
11 he asked you, okay. It is not necessary to add
12 explanations. He just wants his question answered.
13 Let's have the reporter read it back.
14 (Question read)
15 THE WITNESS: Would you read that again.
16 (Question read)
17 A. In the second paragraph, last sentence,
18 these are my words: "I hope that Peter Kostic," who
19 at that time was the safety engineer for CPD, "will
20 resolve this matter this week in his discussions with
21 industrial hygienists at the Bureau of Mines in
22 Denver." Peter worked with the Bureau of Mines and
23 with the public health people.
24 Q. Do you know if Mr. Kostic ever did
25 resolve that matter?

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1 A. I have no memory of any results coming
2 out of it.
3 Q. Do you remember whether at any time after
4 the date you wrote this, December 17, 1971, at any
5 time after that, did you ever have any concerns about
6 the reliability of the results you were getting from
7 your sampling and measuring techniques?
8 A. Yes.
9 Q. When did you have concerns after December
10 17, 1971?
11 A. I don't know if it occurred before or
12 after, but it was determined that having the general
13 plant superintendents do the air monitoring was not
14 the proper approach to take.
15 Q. Was any corrective action taken when you
16 had that concern or after you had that concern?
17 A. That responsibility was taken away from
18 them.
19 Q. Were there any -- did you have any
20 particular concerns about not the persons who were
21 doing the test, but the actual sampling and measuring
22 techniques themselves? Did you ever have any concern
23 about the reliability of those?
24 A. If the general plant superintendents were
25 following the methodology that was established, there

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1 would have been no concern.
2 Q. Do you remember if, in this letter of
3 December 17, 1971, where you're talking about the
4 possibility of false results, do you know or do you
5 remember what the source of those false results were
6 or possible false results would have been?
7 MS. HESSION: Objection to form.
8 A. I don't remember.
9 Q. On the second page of your letter of
10 December 17, 1971, the second to the last paragraph,
11 you state that "The one part about Environmental
12 Analysts' technique and procedures for sampling fiber
13 that I did not like was the duration of sampling
14 time. This sampling duration varied from one to six
15 minutes, and if in that period of time a light
16 fixture was hit or dust blown off a ledge
17 accidentally, a high fiber concentration would
18 result."
19 Did you not like the sampling duration
20 because it was too short?
21 A. Based on what I know now, and I think it
22 is probably the same at this time, it was too short.
23 Q. Is the reason that it --
24 A. Can I clarify that?
25 Q. Yes.

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1 A. I'm assuming that they were using the
2 membrane filter method.
3 Q. Okay.
4 A. Because this outfit, and I engaged them,
5 used different air sampling equipment.
6 Q. You mean at different times or --
7 A. Paragraph 3, they are talking about free
8 silica.
9 Q. So back to the second page, the second to
10 the last paragraph, is the concern here that you were
11 expressing that the results that one would get from a
12 sampling duration of one to six minutes wouldn't be
13 representative?
14 A. It depends on the condition. Here
15 again -- also on the type of equipment that's being
16 used.
17 Q. I'm just trying to figure out why you
18 didn't like the one-to-six-minute sampling duration.
19 A. So am I. I don't spell out in this memo
20 what sampling method they were using. The first
21 sentence says, "One part about Environmental
22 Analysts' technique and procedures for sampling fiber
23 that I did not like was the duration of sampling
24 time." It doesn't tell -- I don't specify in that
25 sentence what technique and procedure they're using.

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1 So, if it...
2 Q. Do you know how many different kinds of
3 procedures they did have at their disposal at that
4 time for air monitoring sampling?
5 A. I think there were three.
6 Q. Do you stand by the statement that if a
7 light fixture was hit or dust blown off a ledge
8 accidentally, a high fiber concentration would
9 result?
10 A. It's possible.
11 Q. Did W.R. Grace ever remove asbestos
12 coatings from any of its facilities?
13 MS. HESSION: Objection to the form.
14 A. I can't answer for W.R. Grace.
15 Q. Do you know if CPD removed any asbestos
16 coatings from any of its facilities?
17 MS. HESSION: Objection to the form.
18 A. I know I was responsible for removing
19 asbestos from a piece of test equipment, having it
20 removed by a licensed contractor.
21 Q. But you're not aware of CPD removing any
22 in-place asbestos materials from its facilities?
23 MS. HESSION: Other than the material on
24 the piece of test equipment?
25 MR. HUGHES: Right.

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1 MS. HESSION: Can I just hear that
2 question again.
3 (Question read)
4 Q. Other than the test material you just
5 referred to.
6 MS. HESSION: Object to form, and you can
7 answer.
8 A. I personally did not have, to the best of
9 my knowledge, any direct contact in removing asbestos
10 material. Grace in Cambridge did demolish many
11 buildings, and I'm not sure whether asbestos was
12 installed and was removed or not. I don't know.
13 Q. I just asked you if you were aware of
14 whether or not W.R. Grace removed in-place asbestos
15 material from any of its facilities, not whether you
16 had any contact or involvement. Are you aware of
17 W.R. Grace removing any in-place asbestos materials
18 from any of its facilities?
19 MS. HESSION: Other than that possibly
20 may have been installed or removed in some of the
21 Cambridge buildings that he just testified about?
22 MR. HUGHES: No. Let's start it over. I
23 asked whether or not he was aware -- his answer was
24 directed to -- he said, "I didn't have any contact."
25 MR. HUGHES: I believe said he was not

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1 sure whether asbestos was installed or removed from
2 any of the Cambridge buildings that were demolished,
3 and the reporter can go back and read his answer, if
4 you want.
5 MR. HUGHES: No, I'll start it over.
6 Q. Are you aware of W.R. Grace's removal of
7 any in-place asbestos-containing materials from any
8 of its facilities?
9 A. No.
10 MR. HUGHES: Why don't we take a break.
11 (Recess)
12 BY MR. HUGHES:
13 Q. Mr. Eaton, when I asked whether or not
14 you were aware of -- whether you were aware of
15 whether W.R. Grace removed any in-place asbestos-
16 containing materials from any of its facilities, you
17 stated that you were aware of the removal of some
18 experimental coatings; is that right?
19 MS. HESSION: I'm going to object that
20 that's mischaracterizing his testimony. He mentioned
21 removal of covering from a piece of test equipment
22 and said he wasn't sure whether asbestos had been
23 removed in Cambridge buildings.
24 Q. Okay. Are those the only instances of
25 removal of asbestos-containing materials by Grace

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1 that you're aware of?
2 A. I believe that your previous question was
3 asbestos. Now you are saying asbestos-containing
4 materials.
5 Q. Okay. I will -- I'm referring to
6 asbestos-containing materials, in-place asbestos-
7 containing materials like fireproofing, insulation,
8 wallboard that contains asbestos. That's what I'm
9 referring to.
10 A. All right. And are you referring to all
11 of W.R. Grace or CPD?
12 Q. I'm referring to all of W.R. Grace.
13 MS. HESSION: Even though the witness has
14 already told you he can't speak for W.R. Grace. That
15 was the very first question that started in this
16 line.
17 (Document marked as Eaton Exhibit 14
18 for identification)
19 MR. HUGHES: I'm marking as Eaton Exhibit
20 14 a four-page document. The first page is an
21 authorized shop order for North Bergen, New Jersey.
22 I don't see a date on it.
23 The next page is a -- some handwriting.
24 The third page is a memo from C.M. Oesch, O-e-s-c-h
25 is how it is spelled, and it is to P.J. Walsh and

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1 F.W. Eaton. The date is June 23, 1986. The subject
2 is "Insulation Removal Estimates."
3 The fourth page is a proposal from
4 Finishing Touch Asbestos Abatement Corporation, dated
5 July 11, 1986.
6 Q. Mr. Eaton, do you know -- do you
7 recognize the memo which is the third page of this
8 document?
9 A. I don't recognize it.
10 Q. You are listed as a recipient.
11 A. I see that.
12 Q. Do you know what the writer is referring
13 to when he says, "Attached are three estimates and
14 supporting documentation for the warehouse insulation
15 removal project"?
16 A. I'm not aware of -- I don't remember of
17 a removal project.
18 Q. Would this warehouse removal project
19 that's referred to in this memo be different from any
20 of the instances of asbestos-containing material that
21 was removed that you referred to before?
22 MS. HESSION: Objection to the form. He
23 just testified that he doesn't remember this removal
24 project. So how can he tell you whether it is
25 different from anything else?

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1 Q. Looking at this document, can you tell
2 where this asbestos removal project was removing
3 asbestos from?
4 A. Well, this is from the plant manager --
5 this memo is from the plant manager of North Bergen,
6 North Bergen plant.
7 Q. Were the instances of asbestos removal
8 from the experimental coatings or the coatings on the
9 experimental --
10 MS. HESSION: The coating on a piece of
11 test equipment is what I think you are reaching for.
12 MR. HUGHES: Thank you.
13 Q. The coating on a piece of test equipment,
14 was that at North Bergen, New Jersey?
15 A. No, that was in Cambridge.
16 Q. And when they renovated or demolished
17 buildings at the Cambridge facility, that wasn't
18 North Bergen, New Jersey, was it?
19 A. No.
20 Q. So this is separate from those instances
21 of asbestos-containing -- removal of asbestos-
22 containing materials?
23 A. Correct, different location.
24 Q. Do you remember anything about this one?
25 A. No, I don't.

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1 Q. Did you have anything to do with policy
2 regarding removal of asbestos in any Grace
3 facilities?
4 A. No, I didn't.
5 Q. Did you have anything to do with removal
6 of asbestos-containing materials from any CPD
7 facilities?
8 A. Well, as I previously stated, I was
9 responsible for having removed an asbestos material,
10 and I don't remember exactly what form it was in,
11 except it was on a piece of test equipment used by
12 the research department.
13 Q. Do you remember whether it was
14 fireproofing?
15 A. It was not fireproofing.
16 Q. Do you know if CPD had any concerns that
17 sprayed-on asbestos-containing products might be
18 damaged and release asbestos fibers?
19 MS. HESSION: May we just have a
20 clarification, Counsel. Are you talking about Grace
21 products or any products?
22 MR. HUGHES: Any products.
23 MS. HESSION: Could we hear the question
24 back again.
25 (Question read)

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1 A. I think after the fact I was made aware
2 that certain tests had been conducted on asbestos and
3 asbestos-containing materials.
4 Q. When were you made aware that such tests
5 had been done?
6 A. I really don't know. I cannot remember.
7 It was not in the period that -- where you showed me
8 an exhibit, and I can't remember what exhibit it was,
9 but there were a couple of tests conducted comparing
10 sprayed asbestos and asbestos-containing materials.
11 Q. It wasn't that time?
12 A. It was not that time. It was after
13 that. But I don't know when.
14 (Document marked as Eaton Exhibit 15
15 for identification)
16 MR. HUGHES: I'm marking as Eaton Exhibit
17 No. 15 a memo dated December 21, 1983, from T.E.
18 Hamilton to five individuals, one of whom is listed
19 as Mr. Eaton. The subject is "Test Method for
20 Determining the Damageability and Subsequent Fiber
21 Release of Sprayed on Asbestos Containing Products."
22 Q. Do you recall receiving this memo, Mr.
23 Eaton?
24 A. I don't remember receiving this memo. I
25 really don't remember -- if I did attend, I do not

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1 remember attending this meeting.
2 Q. Have you ever seen this document before?
3 A. No, I haven't, to the best of my ability
4 to remember.
5 Q. You didn't see it yesterday?
6 A. No, I didn't.
7 Q. Can you tell, from looking at this memo,
8 whether it's referring to the test that you said you
9 later became aware of on sprayed-on asbestos-
10 containing products?
11 A. I think there are two different areas. I
12 think the first area, the tests were probably
13 coordinated by research and product management
14 people. This is handled by the safety and toxicology
15 department, which was formed after 1970.
16 Q. Who is Mr. Hamilton?
17 A. He was an industrial hygienist.
18 Q. And I'm just going to ask who each of
19 these individuals were that the memo was addressed
20 to.
21 A. I would be glad to. First one is Dr.
22 Duecker, who is head of research; myself; R.C.
23 Ericson was head of quality assurance; L.S. Shu was
24 in research; Dr. Yang, J.C. Yang, was head of the --
25 a laboratory, I can't remember the name of the

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1 laboratory. And then Hamilton, who was the -- was
2 an industrial hygienist. R.C. Walsh was, I believe,
3 at this time president of CPD.
4 Q. Were you ever informed of the results of
5 any tests that were done to determine the
6 damageability and subsequent fiber release of
7 sprayed-on asbestos-containing products?
8 A. I have no knowledge of any results.
9 MR. HUGHES: I have no further
10 questions.
11 MS. HESSION: I just have a few.
12 CROSS EXAMINATION
13 BY MS. HESSION:
14 Q. Mr. Eaton, Mr. Hughes asked you several
15 questions earlier about the memo which is the first
16 page of Exhibit 1 from Mr. Schneider to Mr. Vining.
17 In connection with the fourth paragraph of that memo,
18 the third sentence, which refers to the possibility
19 that the company may be subjected to substantial
20 financial liability over the next few years, I
21 believe you told Mr. Hamilton that you thought that
22 substantial liability would result from total dust
23 exposure to employees.
24 I would like to understand, what is your
25 understanding, to the extent that you have one, of

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what any money constituting a substantial financial liability over the next few years would have been spent on?

A. This is a disadvantage that I was at in that I'm trying to go back many years to remember something that's been written either by myself or someone else, and not carefully reading every paragraph.

In the third paragraph, where Mr. Schneider is talking about an expenditure of $423,000, in that period of time, $423,000 was an awesome amount of money, and really the statement that I misinterpreted, where it says "I do not believe we should ignore the possibility that we may be subject to substantial financial liability over the next few years," refers to the $423,000 plus the ongoing capital and expense monies.

Q. Okay. And that, as I understand it, is your best understanding of what Mr. Schneider meant when he wrote this memo?

MR. HUGHES: Objection. Leading.

A. That's right.

Q. You didn't write this March 3rd, 1969, memo, did you?

MR. HUGHES: Objection. Leading.

A. No.

Q. Are those your words in the fourth paragraph?

A. Those are not my words.

Q. Mr. Hughes also asked you a few questions about the relative proportions of any chrysotile and tremolite that might be in Mono-Kote III, and I would like you to focus particularly on fibrous tremolite. Do you know if there was any fibrous tremolite in Mono-Kote III?

A. Say that again.

Q. Do you know if there was any fibrous tremolite in Mono-Kote III?

A. I don't know of any tests that were conducted to determine if there were fibrous tremolite in Mono-Kote III.

MS. HESSION: That's all I have.

(Whereupon the deposition was concluded at 3:00 p.m.)

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WITNESS:	DIRECT	CROSS
Frederick W. Eaton		
(by Mr. Hughes)	3	
(by Ms. Hession)		108

* * *

EXHIBITS

NO.		PAGE
1	Two copies of memo from R.E. Schneider to R.M. Vining dated March 3, 1969, with attached multi-page report entitled "In Situ and Environmental Dust Controls for Vermiculite Mining and Expanding Operations"	8
2	Document entitled "Dust Control Program, W.R. Grace & Co., Construction Products Division, Zonolite Facilities," Bates Nos. 099382 through 393	27
3	Memo from F.W. Eaton to R. Reyer dated September 1969, Bates No. 099373	35
4	Two-page letter from Parker C. Reist to Frederick W. Eaton dated March 17, 1970, with attachments, Bates Nos. 098875 through 879	40
5	Memo from R.L. Berman to R.E. Schneider dated July 6, 1970, with attachment entitled "Membrane Filter Field Test Report, Mono-Kote Application," with backup data sheets, Bates Nos. 20080534 through 541A	48
6	Memo from D.G. Powell to T.F. Egan dated July 24, 1970, Bates Nos. 091053 through 56	51
7	One-page memo from R.L. Berman to R.E. Schneider dated July 31, 1970	58

EXHIBITS (Continued)

NO.		PAGE
8	Memo from H.A. Brown to R.E. Schneider dated August 13, 1970, Bates No. 20163414; memo from H.L. Waxman/D.G. Powell to H.A. Brown dated August 7, 1970, Bates No. 001614	63
9	One-page memo from H.L. Waxman to D.G. Powell, et al., dated August 17, 1970	71
10	Memo from Walt Pickthall to Fred Eaton dated August 6, 1971, Bates No. 003283	73
11	Memo from R.H. Lafferty to R.M. Coquillette dated September 21, 1971, Bates Nos. 016604 through 610	77
12	Memo from F.W. Eaton to W.R. Wright dated November 1, 1971, Bates No. 003289, with three pages of attachments	88
13	Two-page memo from F.W. Eaton to O.F. Stewart/Enoree dated December 17, 1971, Bates Nos. 000413	92
14	Shop order for North Bergen, New Jersey, with three pages of attachments, Bates Nos. R000875 through 877 and 894	102
15	One-page memo from T.E. Hamilton to H.C. Duecker, et al., dated December 21, 1983	106

* * * *

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1 CERTIFICATE
2 I, Frederick W. Eaton, do hereby certify that
3 I have read the foregoing transcript of my testimony,
4 and further certify that said transcript is a true
5 and accurate record of said testimony.
6 Dated at _____, this ____ day of
7 _____, 1996.
8
9 _____
10
11
12 Sworn and subscribed to before me this ____
13 day of _____, 1996.
14
15 _____
16 Notary Public
17 My commission expires:
18 _____
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1 COMMONWEALTH OF MASSACHUSETTS)
2 SUFFOLK, SS.)
3 I, Carol H. Kusinitz, Registered Professional
4 Reporter and Notary Public in and for the
5 Commonwealth of Massachusetts, do hereby certify that
6 there came before me on the 19th day of September,
7 1996, at 10:00 a.m., the person hereinbefore named,
8 who was by me duly sworn to testify to the truth and
9 nothing but the truth of his knowledge touching and
10 concerning the matters in controversy in this cause;
11 that he was thereupon examined upon his oath, and his
12 examination reduced to typewriting under my
13 direction; and that the deposition is a true record
14 of the testimony given by the witness.
15 I further certify that I am neither attorney
16 or counsel for, nor related to or employed by, any
17 attorney or counsel employed by the parties hereto
18 or financially interested in the action.
19 In witness whereof, I have hereunto set my
20 hand and affixed my notarial seal this ____ day of
21 September, 1996.
22 _____
23 Notary Public
24 My commission expires 6/18/99
25

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PERSONAL AND CONFIDENTIAL 04003391

TO: R. M. Vining (#1)

DATE: March 3, 1969

FROM: R. E. Schneider

SUBJECT: Insitu and Environmental Dust Control for Vermiculite Mining and Expanding Operations

cc: R. W. Sterrett (#2)
John F. Murphy (#3)
H. A. Brown (#4)
W. R. Wright (#5)
O. F. Stewart - Travelers Rest (#6)
E. D. Lovick - Libby (#7)
R. J. Kujawa - Libby (#8)
Peter Kostic (#9)
F. W. Eaton (#10)

Eaton
Ex ①
9/19/96 CHK

The attached report on dust control for vermiculite mining and expanding operations authored by Messrs. F. W. Eaton, R. J. Kujawa and P. Kostic is the result of their initial studies of the dust control problems of the Zonolite operations.

The inclination of public agencies to protect the worker at any expense (usually the employer's) seems to be a firmly entrenched political phenomenon which should be of considerable concern to us. Our recent experience at Libby, viewed in light of this public policy, may well create for us a significant financial liability. We also should be concerned with the obligation to our employees; namely, permitting them to perform their services under working conditions which we have good reason to believe are hazardous.

The report recommends testing and monitoring procedures with an expenditure of some $423,000 (admittedly a guess estimate) and indicates a continuing monitoring cost of approximately $14,000 per year. I estimate the maintenance costs of the additional capital equipment at approximately 5%, or $20,200 per year.

I would suggest you read the attached copy of an article from the October 12, 1968 issue of THE NEW YORKER Magazine. This kind of publicity cannot help but engender sympathy for anyone working under conditions such as those present in our Zonolite operation. I do not believe we should ignore the possibility we may be subjected to substantial financial liability over the next few years. As we continue to gather information as to the potential hazards at Libby and elsewhere in Zonolite, we must be concerned about our moral obligation to our employees. Current evidence dictates that we must take prompt action.

It is my recommendation that authorization be granted to proceed with the program outlined in the report.

R. E. Schneider

R. E. Schneider

PLAINTIFF'S EXHIBIT G-54.01

RES/pc
Attachments

20087079

PERSONAL AND CONFIDENTIAL

TO: R. M. Vining (#1)

DATE: March 3, 1969

FROM: R. E. Schneider

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R. E. Schneider

RES/pc
Attachments

PLAINTIFF'S EXHIBIT G-5401

#3

PERSONAL AND CONFIDENTIAL

INSITU AND ENVIRONMENTAL DUST CONTROLS FOR VERMICULITE MINING AND EXPANDING OPERATIONS

By: F. W. Eaton
R. J. Kujawa
P. Kostic

INSITU AND ENVIRONMENTAL DUST CONTROLS FOR VERMICULITE MINING AND EXPANDING OPERATIONS

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I. INTRODUCTION

A. Problem

Vermiculite mined at Libby contains about 3% tremolite [illegible] of asbestos. Laboratory analysis of six air samples collected at the dry mill in July of last year showed tremolite content of the dust to range between 12% and 23%.

Employing the widely used impinger method of sampling and [illegible] counting, the currently recognized threshold limit value (maximum allowable concentration) for asbestos is 5 million particles per cubic foot of air (5mppcf). This has been established by the American Conference of Governmental Industrial Hygienists, the recognized authority in these matters. The majority of samples at Libby, collected by Libby personnel on a monthly basis, have shown counts well in excess of the 5 million limit. The average of twenty-one air samples collected during the months of September, October and November of last year was 8.5 mppcf, with one [illegible] usual high of 22 mppcf. Of 34 samples collected by R. D. Hindmarch of Johns-Manville (JM) in the dry mill in July of last year, 11 exceeded the threshold limit. Four out of seven samples collected by J. R. Lynch of (HEW) The U. S. Department of Health, Education & Welfare, in June of 1968 showed counts well in excess of the 5 mppcf threshold.

Under a more recently developed method of sampling and counting, the membrane filter method, the recognized Threshold Limit Value (TLV) is 12 fibers longer than 5 microns per cubic centimeter. Lynch had also employed this method during his visit in June, 1968 and concluded that six of the eight samples collected in the dry mill showed counts well in excess of the limit. Lynch used the same method in February of 1967 and

found that all seven samples collected showed counts far exceeding the limit. Samplings of air inside the cabs of dump trucks by Hindmarch and Lynch showed also that dust counts exceeded the established limit and that truck drivers are similarly exposed to pneumoconiosis (disease of the lungs caused by habitual inhalation of mineral or metallic particles).

B. Controls

At the present time, air is sampled on all floors of the dry mill at Libby and dust particles are counted by Libby personnel on a monthly basis; the impinger method of sampling is employed. Utilizing this method, all dust particles are counted, since it is not possible to differentiate between asbestos particles and other particles. As previously mentioned, the present threshold limit value for asbestos dust and for mixed dusts containing asbestos is 5 mppcf. This year, a tentative 2 mppcf value has been established and after two years, unless there is good reason why such value is impractical, the 2 million count will stand.

Utilizing the more recently developed membrane filter method, only asbestos fibers are counted and as previously mentioned, the threshold limit value has been established as 12 fibers longer than 5 microns per cubic centimeter.

Because our primary concern is tremolite and the membrane filter membrane enables one to identify asbestos fibers, we should change over to this method of sampling. This will involve purchase of the necessary equipment and training of one or more Libby personnel. This method requires somewhat greater skill than the impinger method. Since the same ore mined and processed at Libby is expanded at most of our vermiculite expanding plants, employees at these plants are exposed to the same toxic dust.

Little or no dust surveys have been done in the past. A program of air sampling and fiber counting at these plants is also essential. Our goal should be to reduce the asbestos fiber count to the established threshold limit value of 12 fibers greater than 5 microns per cubic centimeter and to maintain this maximum.

II. VISIT TO JOHNS-MANVILLE, LOMPOC, CALIFORNIA MINE AND MILL

Through the efforts of Peter Kostic, representatives of Dewey and Almy and Zonolite were invited to visit the Johns-Manville Celite operation at Lompoc, California. The Lompoc mill closely resembles our dry mill at Libby as far as operation, equipment, and dust control is concerned. In view of our concern over dust controls at the mill and expanding plants, it was felt the visit to Lompoc would aid us in formulating a program of corrective action.

The visit to J-M's mine and mill was on November 19, 1968. The following people were present:

Dewey and Almy/Zonolite	
R. E. Schneider	Cambridge
P. Kostic	Cambridge
F. W. Eaton	Cambridge
R. J. Kujawa	Libby
Johns-Manville	
G. G. Schuknecht	Plant Manager
C. A. Carlson	Manager of Plant Engineering

A. General

As one of the leaders in industrial environmental health, JM started in the early fifties to build into its Lompoc Celite operation dust control equipment and limit values that would insure an environment

that is not injurious to personnel. Over the past 15 to 20 years $3 million has been spent only on dust controls at the mine and mill. JM is of the opinion that dust controls are an integral part of the operating process, not something else or something extra. This was very evident during our tour by the lack of dust-laden air, excellent housekeeping, and good condition of all facilities.

The material mined has a silica content ranging in particle size from 1 to 25 microns. Although the California State Health Department has established a TLV of 20 mppcf, JM's TLV is 5 mppcf. Throughout the mine and mill there are 147 audit sections where air is sampled semi-annually.

B. Mine

The mine consists of 5,400 acres of which 700 acres is leased. As a strip mine operating one shift per day, they have sufficient capacity (6 million bank yards per year) to supply the mills three-shift operation. The forty-man crew, including 4 maintenance men, operate 18 dirt haulers, 2 water wagons (two-shift operation), 2 loaders, 1 shovel, and approximately 4 bulldozers. The loaders handle 1,200 yards per hour with approximately 45 second load time per hauler and the shovel rate is 350 yards per hour. Hauler capacity ranges from 28 to 44 bank yards. Ore is mined at several sites and deposited in several glory holes in one location. The glory holes are located above a 200 foot tunnel where the various ore grades are dumped into 12 cubic yard skip cars for transportation to the mill.

Dust control, safety, preventive maintenance, and efficiency get the same attention at the mine as at the mill.

1. Dust Control

Each vehicle (hauler, loaders, bulldozers) has its operating cab sealed airtight and equipped with a self-contained filter air supply unit. The air unit, approximately 2'x2'x3', is driven by a 1/8 h.p. DC motor and supplies 200 cfm of air at 1/8" H_2O pressure. Air is filtered through an oil filter and cloth filter before it is discharged into the cab. On most vehicles the air unit is located in the cab, right side, but on bulldozers the unit is located on the cab roof. Maximum dust count in the cab is between 1 and 2 mppcf.

Each day primary and secondary filters are removed from each vehicle and cleaned. There is a separate filter shed where one full time maintenance man steam cleans and resaturates oil filters and recovers the cloth filters. Two water wagons operate on the first shift and one on the second shift watering down all roadways and mining areas where there is a possibility of dust being created by moving vehicles.

The air supply units installed in the mine vehicles were designed and manufactured by JM at Lompoc at a cost of $2,000. A complete set of drawings on this air unit have been received by Peter Kostic and Ray Kujawa.

2. Preventive Maintenance

It was very obvious that preventive maintenance pays off at Lompoc since we saw no mine equipment down and only one piece of equipment down in the mill. (The piece of equipment that was down in the mill was being started up after routine maintenance. They were

experiencing trouble during start-up but it was noted that all necessary crafts-mechanics, electricians, etc. were on hand.) The mine maintenance crew performs daily Preventive Maintenance (PM) lubrication and service checks as per planned PM schedules. Major overhaul and PM checks such as 500 and 1,000 hour checks are done in the main maintenance shop.

3. Safety

The last lost-time accident at the mine was June, 1948. This record should speak for itself.

4. Production Efficiency

At the mine there is group incentive on loading, hauling, and dumping. Standards are checked and revised periodically if necessary by an industrial engineer. It was quite obvious from the activity that there is excellent team work.

To minimize downtime for lunch and provide clean eating facilities, there are four lunch trailers spotted throughout the mine area.

C. Mill

1. General

Since the mill operation at Lompoc is similar to Libby and Enoree, no description of the mill facilities other than dust control will be mentioned.

As mentioned in Section B, ore is dumped from the glory holes into one of eight 12 cubic yard skip cars in the 200 foot tunnel.

While loading cars, the tunnel is sealed off on the west end by automatic operating doors. To prevent a dust condition in the tunnel where the person loading cars is stationed, air at the rate of 60,000 cfm is blown into the shaft from west to east keeping dust always away from the operator. The transfer car is sealed and air filtered with an air supply unit similar to those installed in the mine vehicles.

The total installed dust collecting capacity, not including product collection, is between 200,000 and 250,000 cfm. With the exception of exhaust from the main kiln driers, dust collection is by means of cyclones and bag houses. Exhaust from the kilns passes through various phases of mechanical collection and is discharged through abandoned glory holes at approximately 98% efficiency to the top of the mine.

JM has found that commercial enclosed bag houses are costly to maintain and are not as effective as the air reversal, open bag house. For this operation the cloth to air ratio of 1/2 cfm to 1 square foot is the most effective. Cotton bags are used for ambient temperature and orlon for higher temperatures.

Considerable design goes into each dust collection system, and through the years specific air flows and face velocities have been established for different phases of dust collection. In all cases where dust is removed from spaces such as hoods, the face velocity is 300 to 400 feet per minute. The material used to fabricate cyclones, ducts, etc. in most cases is mild steel. Where

there are high temperatures and corrosive fumes involved, the equipment is brick lined. Cor-ten is used on fan housings. Other materials are under investigation but little use is made of stainless steel.

2. Vacuum System

A vacuum system with detachable hose outlets is installed throughout the mill. The total number of outlets or installed cfm is not known, but nowhere in the mill was there any accumulation of dust on the floor, equipment or structural members. Each man is responsible for keeping his area clean and this is done as part of his primary job. All cleaning is done by vacuum; the use of dust promoting brooms is discouraged.

3. Bagging Operation

Bagging is done in two areas and the number of bag packers per man varies from one to four. Dust control in each area is basically the same. The bag packers are similar to the St. Regis screw fed valve bag packer. The total air removed at the packer is 2,500 cfm with 1,000 cfm at the packer nozzle and 1,500 cfm from around bag sides. The dust is passed through cyclones and into an open bag house. One bag house supplying two packers and one bag cleaner, consisted of 56 bags, 50 feet long and approximately 8 inches OD. After the bag is packed it is placed on a conveyor and passed through an enclosure that flattens the bag and brushes all surfaces clean. In another area the bags are cleaned in a similar

manner but air removal and flattening is done by loading bags on a pallet elevator. When the pallet is full the ram is raised against the overhead plate to compress loaded pallets. Average bulk density of the Lompoc product is 7 lbs. per cubic foot.

4. Bulk Loading

Box cars are bulk loaded inside a warehouse approximately 1,200 feet long. Loading and exhausting of the cars is by an installed air handling system. There are two or three bins containing sections of 3 inch supply and 6 inch exhaust hose, plus necessary adaptors that are transported by fork truck to the box car to be loaded.

The cars are completely sealed except for the doors when received. At the warehouse the sliding door is sealed with cardboard, joints taped, and a slot cut in the top to receive the exhaust hose adaptor duct. The 3 inch feed hoses are attached to each end of the car and tied into the main bulk loading pipe network. The 6 inch exhaust hose is attached to the car adaptor and the other end to the main exhaust system. This exhaust system is similar to all others in that it consists of the cyclone and bag house.

In the loading operation, product feeds by gravity into one of two 8 cubic foot (approximate) containers. When the container is full it is pressurized and conveyed to the car. Conveying air is 300 cfm.

5. Personnel Cleaning Stations

Located at strategic locations throughout the mill are seven personnel cleaning stations. These consist of a 3 foot diameter

by 6 foot high booth with a grill floor. Attached to the bottom of the booth is a 1,000 cfm blower that discharges to a commercial enclosed bag dust collector. In the booth is a 1 inch hose with nozzle for either blowing or vacuuming dust from clothing.

D. Training

An interesting sideline to this tour which has a definite bearing on maintenance, dust control, efficiency, personnel relations, etc. is training. Due to the shortage of skilled operators and craftsmen, JM's Celite plant undertook a two-year project to establish a training program for their operators.

In the Maintenance Department there are five grades in each craft classification. In addition to on-the-job training, there are approximately 60 hours of classroom training from the lowest grade to the top grade. Once a person has completed the necessary time and training requirements successfully, he is regraded and paid the higher rate even though he does not perform the work in the next higher grade. Therefore, it is possible under JM's plan to receive top money but perform lesser duties.

III. PROGRAM FOR ESTABLISHING REQUIRED CHANGES

A. Monitoring

1. Personnel

Dust monitoring at Libby is done by an Engineering Department technician on a monthly basis. He should continue to do the monitoring there.

Monitoring at our expanding plants throughout the country will be conducted by Cambridge Engineering. Cambridge Engineering will also do occasional spot checking at Libby for purposes of evaluating the efficiency of the monitoring equipment and the techniques involved.

2. Type Test and Equipment

The dust at Libby and the expanding plants is a mixed dust. Utilizing the impinger method of sampling and counting, the method currently employed at Libby, all particles up to 10 microns are counted. No differentiation is made between harmful asbestos fibers and the so-called nuisance dust particles.

Since our prime concern is tremolite asbestos, we should switch over to the more recently developed filter membrane method of monitoring. It will be necessary then to provide Libby and Cambridge Engineering with the necessary sampling equipment, microscope and necessary laboratory equipment.

Supervisory personnel of JM's Environmental Control Department are soon to undergo a course of training by the U. S. Department of Health, Education and Welfare in the new sampling and counting technique. After they have completed the course they will train their own staff of industrial hygienists, hopefully after March 1, 1969. They have agreed to include our personnel in the program of training.

3. Frequency of Monitoring

Monitoring at the mine and mill should be continued on a monthly basis until such time as the threshold limit is reached.

Then, for six months, it should be done every other month. After that, if the threshold limit is maintained, monitoring should be done on a quarterly basis.

The air at all expanding plants should be sampled and evaluated as quickly as possible. At those plants where mechanical ventilation appears adequate, housekeeping is satisfactory and fiber counts are below acceptable limits, monitoring should be done on an annual basis. At those plants where these provisions are not met, monitoring should be done immediately after corrective action is undertaken, and then, after proper dust controls are established, on an annual basis.

Samplings will also have to be done after major repairs, replacements, etc. of ventilating equipment.

B. Control Measures

At this phase of the dust control study it is not possible to arrive at firm plans, recommendations, or costs for the mills and expanding plants. Detailed investigations will have to be made in each area.

1. Libby Mine

(a) Recommend increased use of the road oiling system during dry seasons to control dust on roadways. A water wagon has not been used for several years. Greater emphasis should be placed on the use of road oil of the type now used.

(b) The only other possible recommendation is to install filter units similar to JM's in each vehicle if the established TLV

cannot be maintained. Filter units will probably be required on equipment since working area roads, close to shovels, cannot be oiled.

2. Libby Mill

(a) Evaluate total requirement for the mills and transfer points. Points to be covered are optimum face velocities of hoods, total CFM, hood design and dust collection equipment (cyclones, bag houses, scrubbers, etc.).

(b) Evaluate present equipment to determine its capabilities, capacities and how it can be corrected or modified to meet required results.

(c) Final recommendation and costs of new or modified equipment including necessary maintenance to meet the established dust TLV.

3. Expanding Plants

(a) Initially, design data on air flow will have to be supplied by Travelers Rest Engineering including any information on earlier furnaces if the air flow differs from the present. With this information one of the newer furnaces, such as Kearney, will be checked out using a velometer to determine actual air flows. If the "model furnace" does not operate as designed or if the design is not adequate, recommendations will be made for corrective action.

(b) With data from Engineering and the "model furnace", each expanding plant will be surveyed starting with those plants with the more serious dust problem.

(c) Recommendations and cost estimates will be made to up-grade each plant.

(d) In those plants manufacturing Mono-Kote, Engineering will be investigating the manufacturing process and equipment, including adequate dust collection.

C. Costs

An estimate of the costs of this program may be presented as follows:

1. Monitoring Equipment and Training

a. Test Equipment for Two Stations @ $1,750 ea.		$ 3,500
b. Two Personnel Air Samplers @ $150 ea.		300
c. Training (5 people)		1,500
	TOTAL	$ 5,300

2. Monitoring

a. Mining Operations		
(1) Initial		$ 5,000
(2) Continuing @ $1,500/year		
b. Expanding Plants		
(1) Initial		$ 8,000
(2) Continuing @ $8,000/year		
	TOTAL	$ 13,000

3. Equipment Installation

a. Libby Mill		
(1) Purchase & Fabrication of Equipment		$ 75,000
(2) Installation		25,000
(3) Engineering (including travel)		15,000
	TOTAL	$115,000

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Expanding Plants

(1)	New Ventilation Systems, 15 Furnaces @ $6,500 ea.	$ 97,500
(2)	Ventilation System Repairs, 15 Furnaces @ $2,800 ea.	42,000
(3)	Mono-Kote Manufacturing, 18 Systems @ $6,000 ea.	108,000
(4)	Engineering (including travel)	42,500
(5)	Continuing Engineering Costs $4,500/year	
	TOTAL	$290,000

Estimated Program Costs $423,300

Estimated Continuing Costs:

Monitoring $9,500/year	
Engineering $4,500/year	
Maintenance $20,200/year	
Total Continuing Costs	$ 34,200

/pc
3/3/69

1012330

DUST CONTROL PROGRAM

W. R. GRACE & CO.

CONSTRUCTION PRODUCTS DIVISION

ZONOLITE FACILITIES

Eaton
Ex 2
9/19/96 CHT

DEPOSITION
EXHIBIT
1353
2-28-89

099382

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1012331

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VII Air Pollution

099383

I. SAMPLING AND TESTING EQUIPMENT

1012522

On August 6, 1969 all necessary sampling and test equipment was ordered and charged against shop order 16-128 ($7,550). With exception of one air sampler being sent to Travelers Rest, and two samplers being sent to Libby, all other sampling and test equipment is being sent to Cambridge. At the present time testing facilities at Libby are being set up, but equipment originally destined for Libby is being routed to Cambridge due to a recent change in personnel that would be doing the sampling and testing at Libby. The other test facilities will probably be established at Travelers Rest, but initially air samples will be tested by Werby Associates in Boston or one of the Cambridge laboratories. It appears at this time that Werby's estimate of approximately $20 to $25 per sample will be prohibited and alternate arrangements will have to be made for sample testing.

All sampling and test equipment except the sampler battery chargers will be delivered the second week of September.

II SAMPLING PROCEDURES AND INSTRUCTIONS

Sampling procedures to be followed in expanding plants, mines, and mills have been written by Peter Kostic based on established procedures at Johns Manville. These procedures and data sheets will be checked out under actual sampling conditions by F. W. Eaton and P. Kostic before sampling instructions are given to those people designated to conduct the sampling.

III NOTICE OF DUST SAMPLING PROGRAM

The week of September 1, 1969, W. R. Wright should write a letter to all general plant superintendents notifying them that a dust sampling program is being initiated and all plants will be sampled within the next six months. Peter Kostic will draft a letter to be used by W. R. Wright

099384

as a guide. O. F. Stewart should also perform the mine and mill superintende at Both Libby and Kearney.

IV SAMPLING PROCEDURES AND EQUIPMENT CHECK OUT

The week of September 15 Eaton and Kostic will take sampling equipment to Easthampton and conduct trial runs. The purpose of these trials is to become familiar with the equipment under actual sampling conditions and to make any required revisions to the instructions and data sheets. Before any sampling is conducted, all plant personnel will be assembled and notified of the purpose of our visit and the dust sampling program. This check out will require approximately two days. Final draft and copies of instructions and data sheets will require three days.

V SAMPLING

A. Expanding Plants

1. Responsibility

The responsiblity of conducting air sampling at all expanding PLANT will fall upon the general plant superindendents. The General Plant Superientendents regions and their plants are as follows:

EXCEPT ARI-ZONITE TEXAS VERMICULITE

REGION	GEN. PLANT SUPT.	PLANT LOCATION
Southern	J. M. Timmons	Atlanta Little Rock New Orleans Nashville Kearney Travelers Rest
Florida	J. M. Timmons	Boca Raton Jacksonville Tampa
Central	A. E. Dembowski	St. Louis Chicago

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REGION	GEN. PLANT SUPT.	PLANT LOCATION
Northern	A. E. Dembowski	Dearborn New Castle Wilders
Eastern	L. L. Marshall	Trenton Weedsport Easthampton High Point Muirkirk
Western	L. W. Sather	Minneapolis Denver Omaha Milwaukee
Pacific	J. H. Huxley	Los Angeles Newark Portland Spokane ~~Phoenix~~
~~ARIZONITE~~		~~PHOENIX~~
TEXAS VERMICULITE		DALLAS & FORT WORTH

Each General Plant Superintendent will be peovided with one Casella personal air sampler and battery charger and the required quantity of monitors, filters, and shipping containers.

2. Training

All General Plant Superintendents will be instructed by Eaton and Kostic and in the reasons for and the techniques involved in membrane filter sampling. Not only will the sampling equipment, procedures, and the frequenci be discussed; but also industrial relations aspects of this program. This last point is very important to get across to the hourly employees so that there is no misunderstanding or interpretations ~~on behalf of the employees~~.

Training of all General Plant Superintendents will be conducted at Travelers Rest the week of September 29, 1969.. Training of the membrane filter method will take two days.

Because all of the General Plant Superintendents will be assembled in one area, it is felt that possibly W. R. Wright would want to hold a General Plant Superintendent's meeting the remainder of the week as

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Travelers Rest is an excellent location with mining, milling, expanding, engineering and fabrication facilities within a 50 mile radius.

3. Sampling Location

Due to the variations in expanding facilities, the number of sampling locations will vary somehhat. The final determination will be up to the General Plant Superintendent but as a general rule ~~[illegible]~~ 1 hour samples should be taken in each of the following locations.

a. Bagging Stations

Each ~~bagging location~~ bagger must be sampled. In plants with more than one furnace, all furnaces should be operating when samples are taken. In plants with ore bins rather than silos, samples should be taken with and without ore being unloaded.

b. Utility Man or Shift Leader

In those plants where furnace hoppers are filled by payloaders from ore bins by the shift leader, ~~samples should be taken~~ a sample should be taken to collect ~~[illegible]~~ his average exposure. This sample should include the filling of at least one furnace hopper. Samples should be taken with and without ore unloading.

c. Mono-Kote

Mono-Kote manufacturing varies between plants in and equipment and the number of operating personnel. The rule that should apply is that each man should be sampled and it must be recorded on the data sheet what his specific duties were during the sampling period. On mixers using more than one man, the sampler must be rotated to other personnel on the mixer the same day while mixing at the same rate.

8. Mine and Mill

1. Responsibility

Due to a recent change in personnel at the Libby operation, hence

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no one is trained at the pres nt. . : to carry out the sampling and testing functions as originally . .p. Earl Lovich has the responsibility of filling this vacancy and Eaton and Kostic will be responsible for training this new individual.

Lab facilities will be set up at the Libby intown office for the storage of sampling and test equipment. All samples from the Libby operation and the Pacific and Western regions will be tested and analyzed there.

Sampling at Kearney will be conducted by Hugh Graham at Travelers Rest and initial samples will be sent to Cambridge for testing.

2. TRAINING

As mentioned above, training will be required for the individual at Libby but none will be required for Graham who was present at the training session at Johns Manville some months ago. Graham as well as Eaton and Kostic will receive a refresher course during their instruction of General Plant Superintendents at Travelers Rest.

3. SAMPLING LOCATION AND FREQUENCY (Libby)

Until such times that all dust problems are under control at the mines and mill and areas do not warrant sampling, the following areas should be sampled each month?

a. Mine
   1. (truck drivers) 1 driver per working level
   2. Shovel operator
   3. Drill operator
   4. Transfer point

b. Dry Mill
   1. Central Sampling Station at each floor
   2. Each Mill operator
   3. Area Maintenance Man
   4. Skip Hoist Loader and Operator
   5. Dozer operator at Storage Bins (River Site)
   6. Truck Driver (Ore transfer to river site)
   7. Ore car loader at river site

Area sampling at Kearney will be similar to Libby but must be tailored to that facility. If in the first six months of sampling no fibers are ~~eit~~ ~~ei-~~ collected in South Carolina ore, sampling by the membrance filter method can be discontinued until new areas are mined.

Sampling on a monthly basis at both Libby and Kearney should start in October.

C. Frequency of Sampling

Initial sampling of all expanding plants should start by October 1, 1969 and until such .ime when it is determined otherwise, all samplings will be conducted in each plant semi-annually. To prevent an influx of ~~samples~~ SAMPLES at any one time, general plant superintendents should schedule one plant each plant month for sampling. In the case of the ~~Gore~~ Southern and Florida regions, with eight plants, it will be necessary to double up on sampling so that each plant is sampled semi-anually.

With an average of 5 ~~samples of 1~~ SAMPLES per plant or approximately 140 samples semi-annually, it would be unwise to schedule all of this test work at one time expecially when added to Libby's and Kearney's monthly requirements.

General Plant Superintendents should establish a priority of sampling based on plants with the worst dust problem first. All samples and data sheets should be sent to the following locations in the shipping container provided within one week of ~~sampling~~ sample taking:

REGION	TEST LOCATION
Pacific WESTERN ~~Western~~	Libby
All other regions including Kearney	Temporarily F. W. Eaton Cambridge

Samples will be analyzed and results recorded within two weeks AFTE receipt of sample. The distribution list for test results will be determined

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at a later date.

Based on approximately 5 samples per expanding plant, 20 from Libby, and 17 from Kearney per month, the total sampling load will be as follows:

REGION	NO. OF SAMPLES
~~Libby~~	
Libby TEST FACILITIES	
← Western & Pacific	8
Libby	20
TOTAL:	28 Samples per moth month
Cambridge TEST FACILITIES	
← Southern Florida Central Northern Eastern	15
Kearney	17
TOTAL:	32 Samples per month

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VI CORRECTIVE ACTION

Corrective action of dust conditions can and should start immediately at all expanding en plants and both mines and mills. Test reports from membrane filter sampling will be used to monitor facilities and aid in the work required to bring facilities within allowable limits.

A. Expanding Plants

All General Plant Superintendents should survey the plant under their control and report to W. R. Wright what work and estimated cost is required to eliminate existing dust problems. Those areas that can be corrected by inplant personnel or at a cost of $300 or less should be taken care of immediately. Where new equipment is required or the cost is above $300, shop orders should be submitted. If the initial test sample results are above the maximum allowable limits, shop orders should be approved after a thorough evaluation and corrective action started. Where tests results are below allowable limits values, but dust conditions are of a nuisance condition, corrective action should be taken but only after a review of all plants has been made and a priority system established.

Top priority will be given to MonopKote dust control. Dust collecting equipment will be designed for all mixers and will include the necessary hooding, duct work, and bag collectors to make this a dust free operation.

The initial dust collection system for Mono-Kote will be installed on the mixer at Trenton. Installation will be complete and the unit in operation by January 1, 1970. The remaining 17 plants mixing Mono-Kote will have dust collection equipment installed by January 1, 1971. Dust Control of Mono-Kote mixing is the responsibility of Cambridge Engineering.

B. Mines & Mills

In addition to oiling roads where practical at Libby, the only

099391

serious dust hazard at the Libby mine is the dust collection system on the drilling rig. As witnessed the week of May 26, no water was being sprayed on the BIT and the collector was not operating efficiently. Even though a new drilling rig has been proposed, the present collection system should be corrected.

I have at this time no knowledge of ANY serious dust conditions at the Enoree mining sites.

Corrective action at the Kearney is in process with the addition of dust collection facilities. At this time all known dry mill problems are being corrected.

An initial survey of dust conditions at Libby was made the week of May 26. Results of this survey will be sent to Earl Lovich but basically Libby's dry mill dust problems fall into three catagories:

1. No dust collection on certian conveyers on the second floor
2. Inadequate and improper hood design on most all all conveyors.
3. Poorly constructed and maintained product transfer chutes.

The Libby operations should continue to correct dust problems in the dry mill as in the past until the entire system including both wet and dry mills have been evaluated for both INSITU AND environmental dust control.

VII Air Pollution

Although this dust program as outlined does not encompass air pollution, it must be considered as part of it since environmental control is playing a very important part in the general health and welfare of the populus.

No corrections will be made on internal dust control unless the corrective measures will reduce the emission of contaminates to within

099392

established allowable limits for those areas in which the facility is located.

F. W. Eaton

8/26/69

049393

CAMBRIDGE

. R. Reyer, Weedsport

F. W. Eaton

DATE: September 9, 1969

SUBJECT: State of New York Department of Health Environmental Ratings

CC: C. F. Dugan
W. R. Wright/L.L.Marshall

Attached is a copy of the letter from D. W. Prosser, concerning the certificates of environmental rating and the original copies of the environmental rating for your plant file. You will note that ratings have been assigned to all emission points, except that no certificates to operate for Point C[1] and Point D will be granted until we comply with the request made in Prosser's letter. I must say I have had it as far as the State of New York is concerned.

There is insufficient information from Cliff Johnson's file to satisfy all of their demands, but I may be able to obtain this information from emission tests that I plan to conduct at Trenton next week. If this is not possible, we will have to conduct tests at Weedsport and engage probably Baldwin to witness and verify the sampling and testing procedures. On a test to determine all hydrocarbon being emitted while running masonry fill, I will have to engage some other professional engineer and laboratory, as Baldwin is not set up to do this work. I hope to clear these two items up in the next few weeks.

Fred

F. W. EATON

FWE:jrs

Eaton
Ex 3
9/19/96 CAK

DEPOSITION EXHIBIT
1354
Cc 2-24-89

099373

MAR. 1

PARKER C. REIST, Sc.D.
32 Fernald Drive
Cambridge, Mass. 02138

1015154

March 17, 1970

Frederick W. Eaton
Project Engineer
Construction Products Division
W.R. Grace & Co.
62 Whittemore Ave.
Cambridge, Mass. 02140

Eaton Ex 4 9/19/96 CHK

DEPOSITION EXHIBIT 1356 Cac 2-28-89

Dear Mr. Eaton:

As you requested in your letter of February 17, 1970 I have conducted a microscopic examination of the particulate samples which you sent to me from the two vermiculite rotary dryers.

The samples were prepared for analysis following standard procedures and were then viewed on a Bausch and Lomb binocular microscope. Particles were observed using the phase contrast method of microscopy so that the small particles and fibers present in the sample would be easily seen.

Particles were sized into thirteen different size categories using a Porton graticule and a magnification of 210 X for the smaller sizes and a circle template and a magnification of 100 X for the larger ones. Sufficient particles were sized so that for all size groupings less than 40 microns there would be at least 40 particles observed in each size group. For larger sizes, fewer particles were counted since their distribution relative to the smaller ones was very sparce.

Particle size data were plotted on log-normal probability paper and the best fit straight line was approximated. From this plot the number median particle size and geometric standard deviation was estimated. (Fifty percent of the particles have sizes less than the number median size. This number is also known as the geometric mean size.)

Fibers (defined as particles having a length to width ratio greater than three to one and a length greater than 5 microns) were counted at a magnification of 420 X in phase contrast. The number of fibers per gram of sample was estimated by counting the fibers in a weighed portion of sample.

In general the two samples appeared to be similar in nature with the exception that the East Sample contained many very small particles (greater than 87 percent of the total number of particles) which were distinctly different from the larger particles. In the subsequent particle size analysis these less-than-one-micron particles were ignored since they did not appear in the West Sample and were not considered to be of mineral origin. With the exception of size, the remaining particles appeared to be quite similar to one another, very possibly being plate-shaped in configuration.

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Intermixed with the particles described above were a large number of very fine fibers which resembled asbestos fibers. Since you mentioned asbestos or tremolite fibers in your letter, I assume that is what these are. The attached photographs represent typical views of the East and West samples, one view taken at 100 X, the other at 420 X.

Figures 1 and 2 are the probability plots for the East and West dryer samples respectively. Data from these plots, as well as other counting data, is listed in the table below.

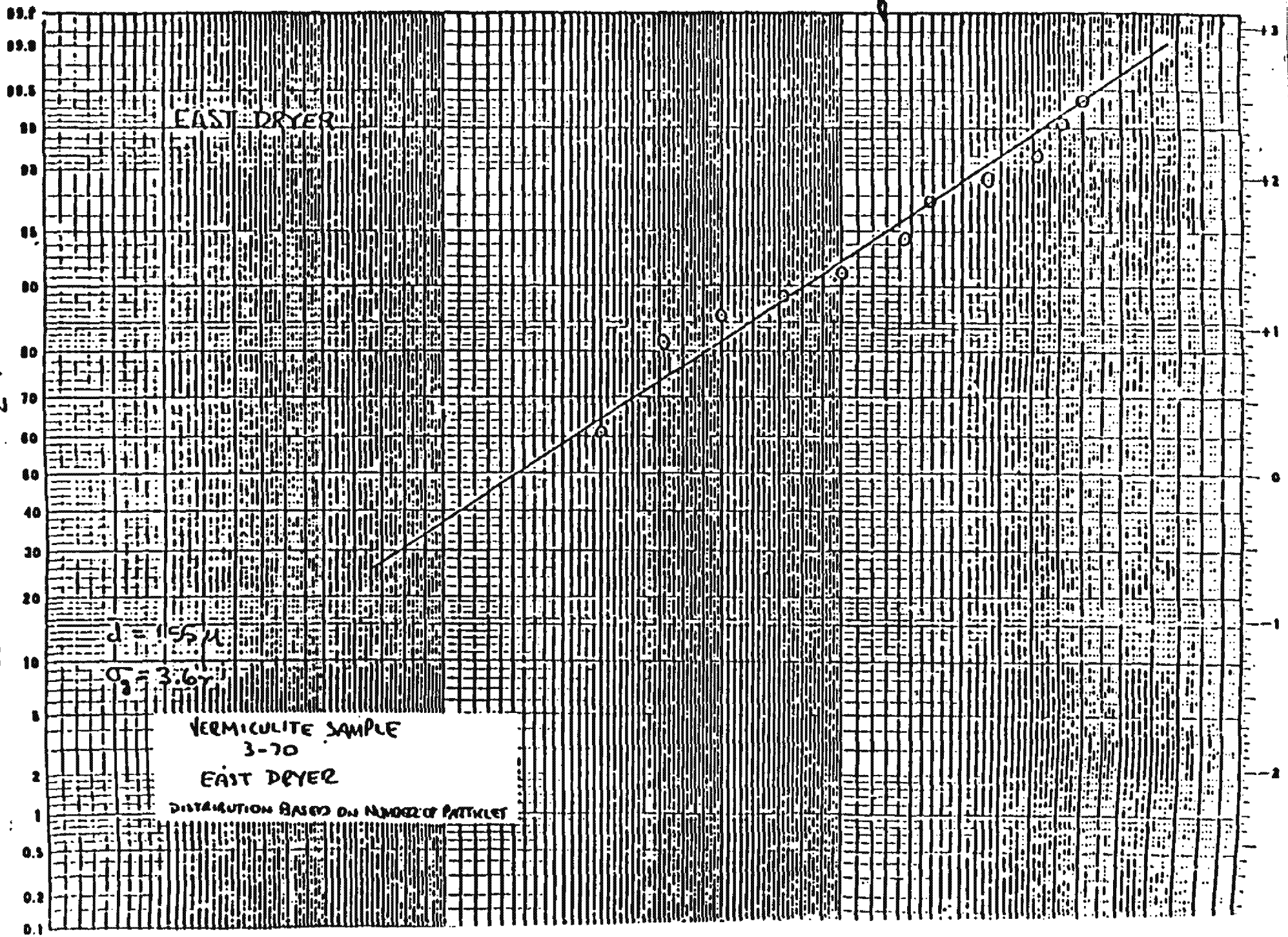
PERTINENT MICROSCOPIC DATA

	East Dryer	West Dryer
Geometric mean, microns	1.55	2.15
Geometric Standard Deviation	3.64	3.47
Estimated Total Number of Particles per Gram of Sample	9.2×10^9	4.7×10^9
Estimated Total Number of Fibers per Gram of Sample	1.4×10^9	1.3×10^9

Very truly yours,

Parker C. Reist

098676



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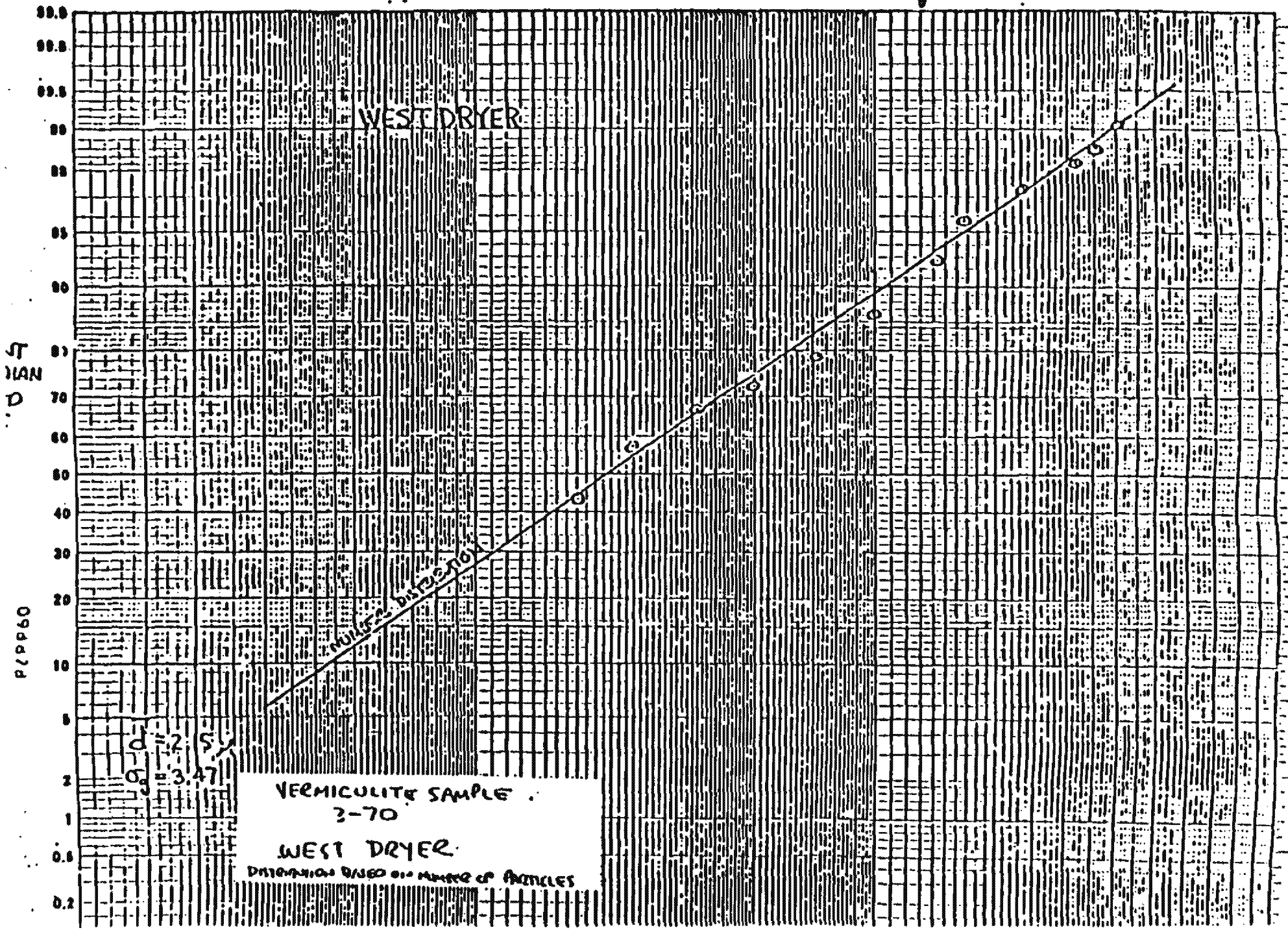

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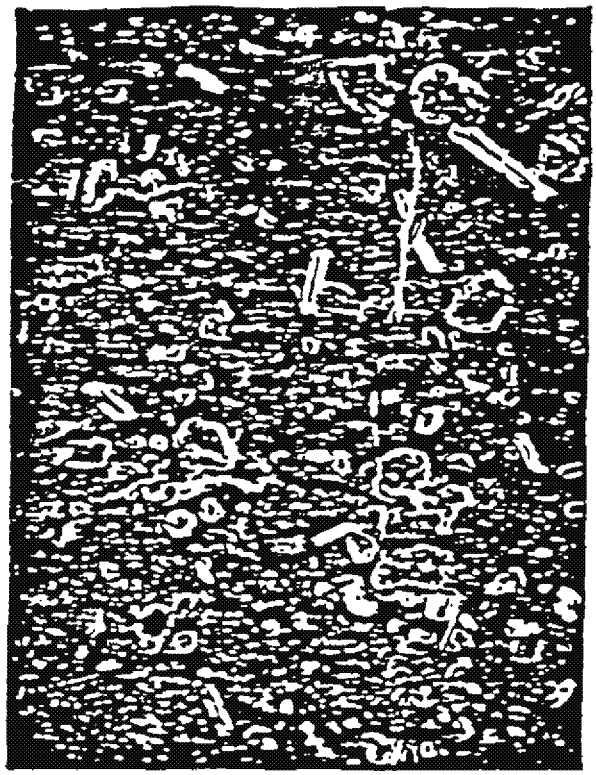
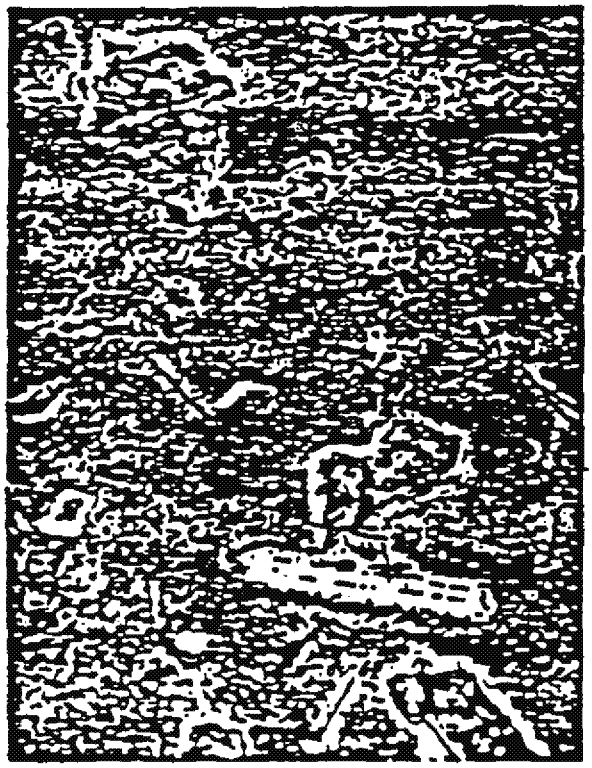


EAST DRYER - 100X

WEST DRYER - 100 X

100μ



EAST DRYER - 420 X

WEST DRYER - 420 X

100μ

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CAMBRIDGE

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CONFIDENTIAL

DEFENDANT'S EXHIBIT NO. 75

TO: R. E. SCHNEIDER

DATE: July 6, 1970

FROM: R. L. BERMAN

SUBJECT: Membrane Filter Field Test

cc: F. W. Eaton

The following report was written to explain the membrane filter field test on Mono-Kote application.

R L Berman

R. L. BERMAN

RLB:jrs
Attachment

Eaton
Ex 5
9/19/96 CHK

20080534

MEMBRANE FILTER FIELD TEST REPORT

MONO-KOTE APPLICATION

On June 29, 1970, R. L. Berman, F. W. Eaton, and E. Van Vliet visited the construction site of Grumman Aircrafts Data Processing Research Center in Bethpage, N. Y.. Austin Co. was the general contractor, while McKeown Plasterer was the Mono-kote applicator.

At the site, four tests were conducted as per the procedure outlined in "Membrane Filter Method of Atmospheric Sampling" by Peter Kostic. It was the purpose of these tests to determine whether or not the threshold limit value of asbestos fibers, as set by the American Conference of Governmental Industrial Hygienists, was exceeded in certain areas. The ACGIH has set a limit at 12 fibers longer than 5 microns per cubic centimeter of air.

Test Number 1 was run on a Mono-Kote applicator. The subject's duties were basically those of a foreman, however, he did actually apply Mono-Kote for a period of 35 minutes.

Test Number 2 was run on a Mono-Kote applicator also. During the entire length of his sampling period, he was applying Mono-Kote. The first subject was spraying a steel structure approximately 15 feet overhead. The second man was on a platform spraying the steel from a distance of about 3 feet.

The third test was run on a man who was mixing Mono-Kote with water. He also unloaded Mono-Kote bags from a trailer and carried them to the mixing area. In the mixing area, there were two men, each working on a separate mixer. Only one of these men was tested.

During normal operating conditions, each man mixes between 13 and 14 batches an hour. There are three 50 pound bags of Mono-Kote and approximately 37.5 gallons of water per batch. Each batch will normally cover 90 $ft.^2$ of surface area if applied to a thickness of one inch.

The fourth area tested was the general vicinity in and around the construction site. The test subject spent time where Mono-Kote was being applied in the basement, on the second and third floors of the building, outside of the building, and in the general area where Mono-Kote was being mixed.

For further detailed information on the area tested, time of testing, and other comments, please refer to the actual sampling sheets or the sheet marked "Notes".

1912339

On June 30, R. L. Berman took the sampled membrane filters to Werby Laboratories in Boston for analysis and fiber counting. The procedure used was as follows:

1. A microscope slide is cleaned.
2. An identification number corresponding to the filter sample is placed on the slide.
3. The millipore monitor is then opened and a pie shaped wedge is cut from the filter.
4. A mixture of two solvents is then placed on the microscope slide.
5. The pie shaped wedge is placed on top of the solvent mixture.
6. A cleaned square of glass is then placed on top of the filter wedge and depressed.
7. The slide is then left to dry, and later is analyzed.

The analysis of the slide is done using a phase contrast microscope. The microscope is a Bausch & Lomb Model TBT-6B Dynazoom. It is normally operated at a magnification of 430X. There are adjustments so that the slide can be moved in any of the three dimensions. In the eye piece of the microscope is a set pattern (See Figure 1). Only the lightly shaded portion of the pattern is used. The number of fibers seen in this area is recorded. To obtain the size of the fibers, they are compared to the circles above and below the pattern. Number 6 circle corresponds to 4.8 microns in diameter; Number 7 to 5.7 microns. As can be seen in the figure, there are 6 total fibers, but only 1 which is larger than 5 microns in size. That one being the fiber in the upper left hand block.

This same procedure is used in 20 distinct fields and averages for total fibers and fibers greater than 5 microns in length are obtained. By use of appropriate formulae, these averages are converted to numbers, which are expressed as fibers longer than 5 microns in size per cubic centimeter of air. The values obtained ranged from a high of 2.6 fibers to a low of 0.4 fibers longer than 5 microns per cubic centimeter of air.

The results, as obtained by Werby Laboratories, are listed on the actual sampling sheets. As can be seen, the values are well within the threshold limits as established by ACGIH.

WRITTEN BY: R. L. Berman
CHECKED BY: F. W. Eaton
DATE: 7/6/70

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1912510

INDUSTRIAL HYGIENE SURVEY
ZONOLITE DUST CONTROL PROGRAM

Construction Products Division
W. R. Grace & Co.

SAMPLING

Pump Number 3875

Sample Number [illegible] Island # 1

Plant Location [illegible] Island - [illegible]

Date of Sampling 6/[illegible]/70

Job or Operation Sampled [illegible]

[illegible] Building

To [illegible] Deck Steel

Structure.

	Pump	Actual
Time Finished	660.71	11:14
Time Started	565.41	9:44
Elapsed Time	95.30	90 [illegible]

Volume Sampled 1[illegible] cc

(Volume sampled = Elapsed time/min. X 2000)

1. Respirator worn by operator? Yes ___ No X Manufacturer & Type ___

Atmospheric Conditions
a. Outside - Clear Cloudy Rain Snow
b. Inside draft - None Slight Moderate Excessive Direction ___
c. Visable dust - Slight Moderate Heavy

3. General Housekeeping: No visible dust, wet and some [illegible] Monokote on the floor.

4. Remarks: Applicator spraying approximately 10 ft overhead

Sampled By P [illegible] / F Eaton Date Shipped to Lab 6/[illegible]/70

LABORATORY

Total fiber count 5.7 Fibers longer than 5 micron per cc 2.6

Comments:

R. T. Werby

Analysis by R. T. Werby Date June 30 19[illegible]

Laboratory Werby Laboratories, Inc. 20080537

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CONFIDENTIAL

1912511

INDUSTRIAL HYGIENE SURVEY
ZONOLITE DUST CONTROL PROGRAM

Construction Products Division
W. R. Grace & Co.

SAMPLING

Pump Number 3978

		Pump	Actual
Sample Number Long Island # 2	Time Finished	1699.54	11:17
Plant Location Long Island - Grumman	Time Started	1610.40	9:47
Date of Sampling 6/29/70	Elapsed Time	89 14	90 min
Job or Operation Sampled	Volume Sampled	180 000 cc	

M. Kote application in the Basement of Building. Spraying steel from platform approx. 3 ft overhead.

(Volume sampled = Elapsed time/min. X 2000)

Respirator worn by operator? Yes X No ___ Manufacturer & Type Dustmask

2. Atmospheric Conditions
   a. Outside - Clear Cloudy Rain Snow
   b. Inside draft - None Slight Moderate Excessive Direction ___
   c. Visable dust - Slight Moderate Heavy

3. General Housekeeping: No visible dust, but platform has wet Monokote on it

4. Remarks:

Sampled By R Bowman / F Eaton Date Shipped to Lab 6/30/70

LABORATORY

Total fiber count 14 Fibers longer than 5 micron per cc 11

Comments:

Analysis by R. T. [illegible] Date 6/30/70

Laboratory [illegible] Inc.

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UNABLE
TO
SCAN
DUE TO
QUALITY
OF
ORIGINAL

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1012512

INDUSTRIAL HYGIENE SURVEY
ZONOLITE DUST CONTROL PROGRAM

Construction Products Division
W. R. Grace & Co.

SAMPLING

Pump Number 3978

Sample Number Long Island # 3

Plant Location Long Island - Greenwood

Date of Sampling 6/29/70

Job or Operation Sampled Mix Kote mixing & also unloading MK Bags from Trailer to mixing House

	Pump	Actual
Time Finished	1786.55	2:07
Time Started	1699.54	12:37
Elapsed Time	87.01	90 min
Volume Sampled	180 cc	cc

(Volume sampled = Elapsed time/min. X 2000)

1. Respirator worn by operator? Yes ___ No X Manufacturer & Type ___

Atmospheric Conditions
a. Outside - Clear Cloudy Rain Snow
b. Inside draft - None Slight Moderate Excessive Direction ___
c. Visable dust - Slight Moderate Heavy

3. General Housekeeping: But Heavy when shaking bags into mixer. 2 mixers under same roof

4. Remarks:

Sampled By R. Berman / F. Eaton Date Shipped to Lab 6/30/70

LABORATORY

Total fiber count 1.8 Fibers longer than 5 micron per cc 1.3

Comments:

Analysis by R. T. [illegible] Date 6/30/70

Laboratory [illegible], Inc.

20080539

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UNABLE TO SCAN DUE TO QUALITY OF ORIGINAL

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ED_005351_00000368-00135

INDUSTRIAL HYGIENE SURVEY
[illegible] DUST CONTROL PROGRAM

Construction Products Division
W. R. Grace & Co.

SAMPLING

Pump Number 3975

Sample Number [illegible] #4

Plant Location [illegible]

Date of Sampling [illegible]

Job or Operation Sampled [illegible]

	Pump	Actual
Time Finished	745.32	2:14
Time Started	110.71	12:44
Elapsed Time	89.51	90 min
Volume Sampled	[illegible] cc	

(Volume sampled = Elapsed time/min. X 2000)

1. Respirator worn by operator? Yes ___ No X Manufacturer & Type ___
2. Atmospheric Conditions
   a. Outside - Clear Cloudy Rain Snow
   b. Inside draft - None Slight Moderate Excessive Direction ___
   c. Visible dust - Slight Moderate Heavy
3. General Housekeeping: [illegible]
4. Remarks: [illegible]

Sampled By [illegible] Date Shipped to Lab [illegible]

LABORATORY

Total fiber count [illegible] Fibers longer than 5 micron per cc [illegible]

Comments:

Analysis by [illegible] Date [illegible]

Laboratory [illegible]

20080540

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-NOTES-

1912511

SAMPLE LI #1

(1) Foreman of application crew
(2) Spent 35 minutes applying Mono-Kote.
(3) During balance of time; moving equipment, coffee break, directed his workers, checked mixing operation.

SAMPLE LI #2

(1) Platform operator
(2) Wore glasses and dust mask.
(3) Applying MK approximately 3 feet from steel.

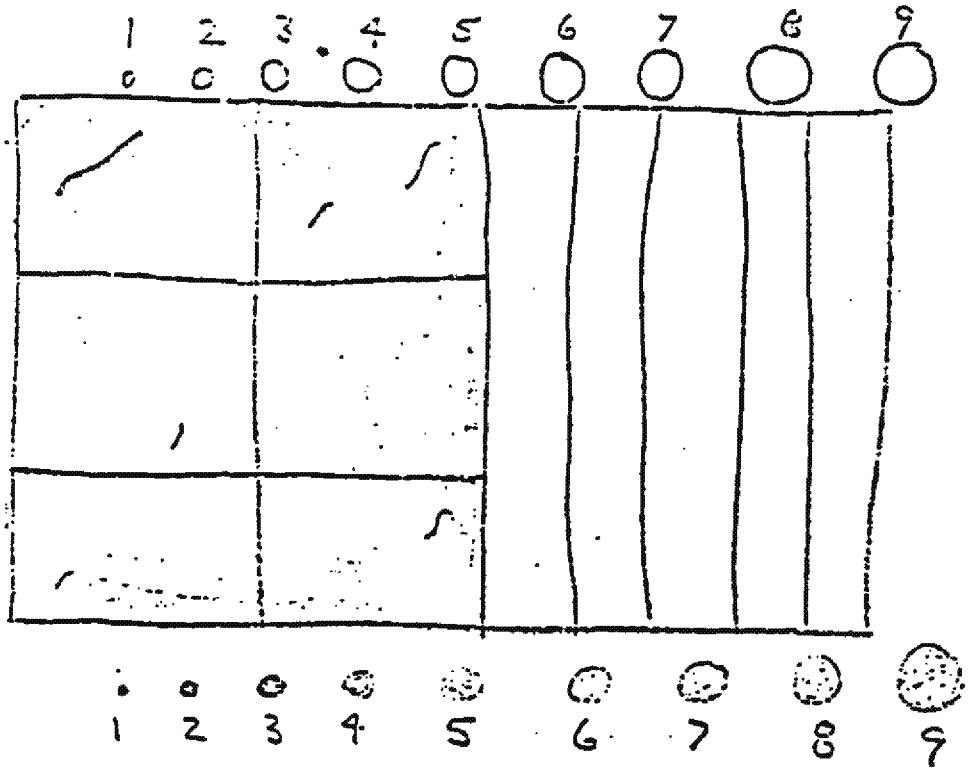
SAMPLE LI #3

(1) Mixing Mono-Kote and unloading trailer.
(2) 2 mixers under canopy

20080541

1011545

Figure 1



20080541A

CONSTRUCTION PRODUCTS DIVISION

07464A1B

RECEIVED
JUL 2 1970
CAMBRIDGE

To: T. F. Egan

Date: July 24, 1970

From: D. G. Powell

cc: R. M. Vining
K. W. Harrison
R. W. Sterrett
H. A. Brown
J. N. Beveridge
K. R. Cranker
T. P. Feit
P. Kostic
F. W. Eaton
H. L. Waxman
J. Cintani/CPD-Trenton

Eaton
Ex 6
9/19/96 CHK

SUBJECT: Philadelphia Department of Public Health, Ad Hoc Committee on Environmental and Occupational Hazards of Asbestos Fibers Meeting, July 23, 1970, in Philadelphia

Attachment 1 - Meeting Agenda
Attachment 2 - Committee Roster
Attachment 3 - W. R. Grace-CPD View Graphs

These 20 pages are attached to Mr. Egan's copy only. Additional copies will be provided as requested.

This meeting was a second in a series of three that are being held with the objective of recommending legislation and regulation with regard to sprayed fireproofing.

In this meeting, city governments, medical people, insurance companies, labor, sprayed fiber material manufacturers, contractors, architects, and industrial safety interests were represented. Close co-operation between New York City and Philadelphia governments was evident. Labor is objective, The medical people are conservative. The Ad Hoc Committee Chairman (Professor Gorson) stated that it is almost a foregone conclusion that stringent enclosure and clean-up regulations are necessary.

The Sprayed Mineral Fibers Manufacturers' Association had no data nor reasoned responses for the committee. Harvey Waxman, Jim Cintani, and myself were anchor men in the day's prolonged and sometimes emotional meeting; and we were the only group to present data.

[1273]

031053

DEPOSITION EXHIBIT
6.6
Egan

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7464B

Dr. Nicholson, who represents the Mt. Sinai Hospital group under Dr. Selikoff, substantiated the reasonableness of our data and general conclusion that even without complete enclosure the micron range fibers released to the atmosphere, due to mixing and spraying, were within the somewhat arbitrarily established but generally recognized threshold limit values. Nicholson further commented he felt the sprayed slurry of cementitious Mono-Kote type of fireproofing posed the least hazard of all types of sprayed fireproofing.

The prevailing feeling of the Committee was that asbestos free formulations are needed now, and will be available in time. In the future, the Committee would look for fiber free concepts and, eventually, all spraying will be outmoded. The Committee mentioned the possibility of in-bag wetting to eliminate air pollution associated with opening and dumping bags of dry mix.

There were extensive discussions of various types of asbestos, how they entered the body, the body reactions, and consequent diseases. It was clearly pointed out that the current threshold limit value criteria is based in large part upon investigations related to asbestosis, which is a disease that primarily reduces lung vital capacity. In contrast, lung cancer is inevitably fatal and should be a paramount consideration in establishing a fiber tolerance criteria. It was admitted that there is some correlation between the two general types of diseases and hence the current threshold limit value of 5 fibers over 5 microns may be useable for the moment (in recent years the criteria has dropped from 12 to 6, and now to 5 fibers).

The medical researchers are frustrated by an imperfect criteria, lack of data, and inadequate data gathering tools. Fiber collection on a millipore filter and counting under an optical microscope is a general practice that is reasonable in cost and time but overlooks minute fibers and is dependant upon human interpretation. Widespread viewing of samples with a scanning electron microscope would allow counting of the smaller particles and identification with x-ray diffraction accessories. However, the cost and time requirements per sample are large and do preclude gathering of such data in large quantity.

The researchers find that both country air and city air in general is polluted with asbestos fibers that are indefinitely suspended in the air. Spray site levels of fiber count are roughly ten times the levels found in the countryside.

WRG00363626
ED_005351_00000368-00140

7464C

Mr. McCormick of the Asbestos Local #8 urged that the general contractor be held responsible for all precautionary measures associated with the spraying of asbestos, since the sub-contractor could not reasonably control the operations and Mr. Romer, Assistant Commissioner of New York City's Department of Air Resources, concurred.

There was discussion of various respirators that are available in this country and England. Workers could be supplied with clean filtered air via a long hose, or wear a battery powered apparatus that would filter air and pump it to the face mask.

Nicholson stated that eventual elimination of asbestos from construction is not practical and is not necessary. For example, floor tiles can contain asbestos with negligible possibility of releasing fibers to the atmosphere. Widespread use of asbestos in other areas such as brake linings may be more significant once asbestos is eliminated from fireproof coatings.

Professor Gorson pointed out that asbestos hazards were just as real as radiation hazards, and yet the former is relatively unregulated and the latter is tightly regulated.

Mr. Bresner, the Fire Coating Sub-contractor, stated that the Girard Trust Building in Philadelphia on which spraying has been stopped by court action will proceed with enclosure of floors by curtain walls prior to spraying. The outer faces of the steel structure would go unsprayed and the outside steel will be closed off with lathe and plaster.

Air contamination during demolition of buildings was clearly recognized by this committee. Mr. Romer pointed out that New York City experiences three thousand demolitions a year.

Enclosure during spraying by tarpaulin or plastic curtains is an imperfect containment method since high winds that frequently occur at higher levels result in torn tarpaulins, numerous leaks, etc.

Mr. Stanley Fonfa of the Spray-on Corporation and the Metropolitan Spray Company, an applicator, announced they have just passed UL testing of a mineral wool and portland cement formulation. U. S. Gypsum is supplying their mineral wool. No indication of UL ratings anticipated was made.

Dr. Williams, observer, commented that mineral wool was safer inasmuch as the fibers are more pliable and less prone to fracture into small fibers. However, Nicholson indicated he felt the mineral wool constituted a hazard of lesser magnitude. No data was presented on spraying of such a formulation.

091055

74-640

Mr. Fonfa indicated that he could supply 12,000 tons of the new formulation a year.

The committee chairman, Professor Gorson, asked if our consultant, Dr. Cooper, could be present at the committee's next meeting, August 4th, and we responded that such was quite likely since Dr. Cooper would be in Washington on the 5th.

We should give serious consideration to gathering several samples for scanning electron microscope analysis and presentation, along with conventional data gathered in the next several weeks, at the August 4th meeting.

Mr. James F. Morgan of the Haskell Laboratory for Toxicological and Industrial Medicine, E. I. duPont deNemours & Co., Wilmington, Delaware, would like to eliminate asbestos completely from hot pipe installation throughout the duPont facilities. Mr. Morgan is a contact to remember if we develop a vermiculite insulation for hot pipes.

David G. Powell

David G. Powell

DGP:mlr

031056

1012163

TO: R. E. SCHNEIDER

DATE: July 31, 1970

FROM: R. L. BERMAN

SUBJECT: Mono-Kote Job Site Testing

cc: H. A. Brown
Thomas Egan
F. W. Eaton

On July 30, 1970, Mr. Egan contacted me regarding the availability of the field monitors, which were used for the job site testing in Long Island and in Omaha.

The monitors used in Long Island have been cleaned and shipped to the Zonolite General Plant Superintendents for reuse.

The Omaha monitors were obtained. On July 31, 1970, they were delivered to Mr. Ed Peters of the Arthur D. Little Company. Along with the monitors was sent a sheet briefly describing the job which each monitor was used to sample.

The purpose of the delivery was to have Mr. Peters look at the filters under an electronic microscope. He is to use a much higher rate of magnification than the 430X, which is used for our analysis purposes. He is to look for fibers which exist, but cannot be seen at 430X magnification.

R L Berman
R. L. BERMAN

RLB:jrs

Eaton
Ex (7)
9/19/96 CHK

PLAINTIFF'S EXHIBIT
G-90.36
ALL-STATE LEGAL SUPPLY CO.

7181750

TO: R. E. Schneider

DATE: August 13, 1970

FROM: H. A. Brown

SUBJ: Mono-Kote Data for Health Safety Program

Dave Powell has been given the responsibility for co-ordinating the assemblage of the necessary data that will enable us to present a factual story on the dangers or lack of danger in using the present Mono-Kote formula. I asked him what additional sampling he would need so that we could do what we could to obtain this for him.

Attached is a copy of a letter listing the additional data and samples that they would like to try to obtain. You are going to have to work with Tom Egan in terms of locating places where the tests requested can be run. I presume you will be assigning Berman to do this work, and I would like you to get him started on the project.

H. A. Brown

HAB:cgr
Attachment

Eaton
Ex (8)
9/19/96 CHK

PLAINTIFF'S EXHIBIT
G-91

20163414

CANDIDATE

TO: H. A. Brown

DATE: August 7, 1970

FROM: H. L. Waxman/D. G. Powell

SUBJECT: Recommended Data Collection for Mono-Kote Health Safety Program

CC: T. F. Egan
F. W. Eaton
P. Kostic

PLAINTIFF'S EXHIBIT G-91(2)

(1) Collect air samples from plenum areas in buildings insulated with Mono-Kote and sprayed fibrous coatings. Would require approximately eight samples:

	Mono-Kote	Sprayed Asbestos Fibers
Plenum	2	2
Room Area	2	2

These samples would then be analyzed by electron microscopy, employing Dr. Nicholson's (Mt. Sinai Hospital) technique.

(2) Conduct high velocity air test with Mono-Kote and sprayed fibrous materials - analyze accurately (possibly to 1/10,000 gm) for weight loss. If possible it would be helpful to direct some of the air passing over the sample through a millipore filter and analyze for asbestos fibers. Some air samples could also be analyzed for asbestos by electron microscopy as in (1) above.

(3) All data to date is on Mono-Kote only. We need data on fibrous asbestos sprayed materials for comparison purposes. Using the millipore filter collection apparatus, we employed for Mono-Kote, we must collect similar data (during application, mixing, etc.) on sprayed asbestos fiber coatings.

(4) Using electron microscopy with Dr. Nicholson's technique, analyze samples collected in general vicinity (one or two block area) at properly enclosed application sites for Mono-Kote and sprayed fibrous coatings. This would involve about four samples.

(5) Go to building site where some type of demolition is being done on buildings fireproofed with sprayed materials and collect millipore and electron microscope samples. The kind of data available will depend upon the type of demolition or remodeling which can be found.

H. L. Waxman D. G. Powell

H. L. Waxman - D. G. Powell

HLW-DGP:mlr

001614

WRG00363631
ED_005351_00000368-00145

CONSTRUCTION PRODUCTS DIVISION

RECEIVED
AUG 18 1970
CONSTRUCTION PRODUCTS DIVISION
H. A. B.

To: D. G. Powell
T. F. Egan
F. W. Eaton
H. A. Brown
P. Kostic

Date: August 17, 1970

Subject: Meeting to Discuss MK3 Health Safety Program

From: H. L. Waxman

There will be a meeting on Thursday, August 20 at 1:00p.m. in the Financial Services Conference Room to discuss the future health safety program of MK3.

AGENDA

1) Presentation of A. D. Little scanning electron microscopy data - H. L. Waxman

2) Proposed data collection - D. G. Powell

3) Discussion and drafting of final program

H. L. Waxman

HLW:mfm

Eaton
Ex 9
9/19/96 CAC

PLAINTIFF'S EXHIBIT
6-91.5
ALL-STATE LEGAL SUPPLY CO.

CONSTRUCTION PRODUCTS DIVISION

AUG. 12 1971

1010270

INTER-OFFICE CORRESPONDENCE

TO: Fred Eaton

DATE: August 6, 1971

FROM: Walt Pickthall

SUBJECT: Bay Area Air Pollution Control

CC: Dick Gallagher
J. Huxley
C. H. Wendel

Eaton
Ex (10)
9/19/96 CHK

Dear Fred:

A call from Aase today. Wanted to know how much of our total production was #4.

Naturally I got nervous. I told him that offhand I'd guess at 25% to 30%. He said you had stated that it was about 40%. Told him you could be right but that I'd have to check the records to be sure. He said that wasn't necessary that with that much of our total in #4 the area inspector would have to have been by here when we were running it.

I got the impression that he might have been put on the hot seat because citations had not been issued when we were in violation.

That's all I could gather out of the conversation. This is just to keep you informed as we agreed.

We'll be careful about keeping the cyclones clean and getting as much #4 out at night as we can. I think our "friendly neighborhood inspector" will be by frequently for the next few weeks.

C03283

PLAINTIFF'S EXHIBIT
G-100.3

TWP:am

PACIFIC REGION

GRACE

September 21, 1971

RECEI
SEP 24 1
ADMINISTRA

MEMORANDUM TO R. M. COQUILLETTE

016604.1

Eaton
Ex (11)
9/19/96 CHR

You asked if we agreed with Mr. Graf's comment that Construction Products Division was doing all it should, commensurate with expenses, in their vermiculite expansion plants in view of the 20 notices of pollution control violations.

CPD's problems are particulate, smoke and odor from the handling and expanding of vermiculite. Basis review of the entire situation with Mr. Fred Eaton, Project Engineer for their expansion plants, we conclude that CPD's approach to their pollution control problems is reasonable. This approach is briefly:

1. Improved particulate emission controls will not normally be considered until a citation is issued by local authorities. In this case, subject to management approval, bag filters (or less costly equipment, if possible) will be installed to backup the existing mechanical cyclones. CPD has the technology and experience with particulate removal systems to bring all such plants into compliance with local laws.

PLAINTIFF'S EXHIBIT
G-104.4

003286

016605

2. If an old expansion furnace is to be replaced and proper dust controls are nonexistent, CPD will install such controls as part of the new facility. This action is considered to be economically wise as eventually all plants will be hit for compliance.

3. For those plants cited for smoke and odor emissions, this problem should be completely eliminated early next year by changing the flotation reagents used in processing the vermiculite ore and replacing the asphalt coating of expanded vermiculite with silicone. The smoke results from burning of residues on ore and odor from the asphalt coating operation.

4. CPD cannot afford to add dust controls to all plants at one time. They plan to tackle them singly, as they are forced to comply, and buy as much time as possible. Since enforcement of laws varies widely from state to state, this approach makes some sense and appears to be working.

5. It is plain economics as to whether management decides to continue operations (and put in controls) or shut down.

In the information collected for SEC, CPD lists 31 existing and planned expansion plants. They have 4 others which are jointly owned with Moran. The Moran plants in Texas and Oklahoma operate separate from CPD and are not reported.

Where CPD stands on the remaining plants is summarized in Table 1.

(Table 1 follows)

Table 1

CPD Vermiculite Expansion Plants - Pollution Control

Plant	Cited	Complaint (1)	Status
1. Calumet Park, Ill.	Yes	P, S, O	S&O should be eliminated with ore/process changes; Plan 2nd cyclone to try to get by until shutdown scheduled in 1 yr.
2. New Chicago Plant	-	-	Complete furnace controls (2) planned.
3. Dearborn, Mich.	Yes	P, S, O, U	Has complete furnace controls, plus unload equipment. S&O should be eliminated with ore/process changes.
4. Denver, Colo.	-	-	Expect compliance needed in July '72.
5. Easthampton, Mass.	Yes	P	Complete furnace controls to startup 10/71.
6. Hialeah, Fla.	Yes	P	Will shutdown 9/30/71; try for extension until 1/1/72.
7. High Point, N.C.	-	-	Expect compliance needed in 9/72.
8. Jacksonville, Fla.	Yes	P	Has complete furnace controls plus new furnace.

(1) Particulate from stack - P; Smoke - S; Odor - O; Unloading particulate - U; Fugitive dust - F.

(2) Usually means bag filter system backup of existing cyclone.

01660

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Table 1 (continued)

	Plant	Cited	Complaint	Status
9.	Kearney	-	-	Expect compliance needed in 9/72.
10.	Kearney Mill	-	-	Expect compliance needed in 12/72.
11.	Libby, Mont.	Yes	Air/Water	Will comply with new facilities.
12.	Little Rock, Ark.	-	-	Expected compliance needed in 12/72.
13.	Los Angeles, Calif.	Yes	F	No additional controls planned over existing wet scrubbers. Plan improved maintenance and housekeeping.
14.	New Los Angeles	-	-	Will have complete furnace controls.
15.	Minneapolis, Minn.	Yes	P, F	Plan complete furnace and storage controls.
16.	Muirkirk, Md.	Yes	P, S	Startup 10/71 of new furnace and complete controls.
17.	Nashville, Tenn.	Yes	S	Nothing planned; Ore process changes.
18.	Newark, Calif.	Yes	P, S	Plan complete furnace controls; ore process changes should eliminate S.
19.	New Castle, Pa.	Warning	S, O	Should correct with ore/process changes. Expect further compliance needed in 9/72.
20.	New Orleans, La.	-	-	Expect compliance needed in 9/72.

016608.1

WRG00363638
ED_005351_00000368-00152

Table 1 (continued)

Plant	Cited	Complaint	Status
21. Omaha, Neb.	Yes	S	Installing new furnace and controls. Old furnace will need compliance.
22. Phoenix, Ariz.	Yes	S	Plan wet scrubber and ore process changes. Expect further compliance needed in 3/72.
23. Pompano Beach, Fla.	-	-	Startup of new plant with complete control in late '71.
24. Portland, Ore.	-	-	Expect compliance needed in 8/72.
25. Spokane, Wash.	Yes	P, S	Install old cyclones from Newark plant to buy time. If complete controls needed, probably shutdown.
26. St. Louis, Mo.	Yes	P, S, O	New furnace and ore handling controls 50% complete. S & O should be O.K.
27. Tampa, Fla.	-	-	Expect compliance needed in 12/72.
28. Travelers Rest, S.C.	-	-	Expect compliance needed in 12/72.
29. Trenton, N.J.	Yes	P	Complete furnace and silo controls in 1 year.
30. Weedsport, N.Y.	-	-	Plan complete furnace controls. Have water p.c. problem from wet scrubber
31. Wilders, Ky.	-	-	Expect compliance needed in 9/72.

WRG00363639
ED_005351_00000368-00153

Table 1 indicates following tally:

14 plants with or planned complete control systems

12 plants with no violations, but complete compliance expected by '72.

4 plants with violations, but CPD trying to get along without complete controls. Complete compliance expected by '72.

1 plant to be shut down

31

Mr. Graf mentioned further that if CPD went all out, they should replace a great number of the exfoliation plants. Basis Table 1, 16 more plants might have to install complete furnace control systems and probably some furnaces by 1972. It is highly probable that all plants will be hit as the States tighten up on emission regulations.

In summary, then, we agree with Mr. Graf's comments and the approach taken by CPD to correct pollution control deficiencies in their vermiculite expansion plants.

R. H. Lafferty

RHL:cm

bcc: J. J. Combes
E. E. Moore

cc: F. W. Eaton
R. D. Gooda
C. N. Graf
R. M. Vinin

TO: W. R. WRIGHT

DATE: November 1, 1971

FROM: F. W. EATON

cc: H. A. Brown
P. R. Reyer/Weedsport
D. W. Morgan/Weedsport

SUBJ: Weedsport - Notice of Violation, State of New York Department of Labor Division of Industrial Safety Service

Weedsport has received a final notice of a Notice of Violation, dated April 20, 1971 from the State of New York Department of Labor.

Requirements of the attached Notice of Violation have been covered in one form or another in the numerous applications that have been submitted to the Department of Labor. Unfortunately, this information, plus additional details, is required to comply with a specific rule not previously covered. It is safe to say that I have procrastinated on answering this Notice of Violation.

After talking with Mr. M. A. Riggs, Supervising Inspector, in the Syracuse office today, I have made arrangements to meet with him or one of his inspectors in Weedsport, Wednesday, November 10, to find out what specifically is required to comply with the regulations and the Notice of Violation.

F. W. Eaton

FWE:jrd
Attachment

Eaton
Ex 12
9/19/96 CKK

003289

PLAINTIFF'S EXHIBIT
G-100.5

FINAL NOTICE

On the date shown in item 2 below, a Notice of Violation was posted to you regarding violations of the Labor Law, Industrial Code, and/or applicable provisions of the State Building Construction Code or the standards accepted thereunder. Our records indicate that ample time has been allowed to comply with the requirements as listed on such notice.

Unless all such requirements are complied with on or before the date indicated in item 5 below, proceedings may be instituted to enforce the provisions of the Labor Law.

1. DATE OF NOTICE OF VIOLATION	2. CAPTION	4. PREMISES	5. DATE
4-20-71	SP CAS 14-4-6	Dunn Road - Town of Brutus	11-11-71

ZONOLITE CONSTRUCTION PRODUCTS DIV.
W. R. GRACE AND CO.
P. O. Box 310
Weedsport, New York 13166

Norman A. Riggs
6. Supervisor - Date
N. A. Riggs
FOR THE COMMISSIONER

ISS-503 (5-68)

FRED EATON
Commissioner

PLAINTIFF'S EXHIBIT
G-100.5(2)

WRG00363642
ED_005351_00000368-00156

NOTICE OF VIOLATION AND ORDER TO COMPLY

DATE [illegible]

OCCUPANCY [illegible]

NOTICE TO BUILDING: TENANT ☐ OWNER ☐ AGENT ☐

REFER TO: CAPTION [illegible]

PREMISES: Dunn Road
Town of Bruton

You are hereby ordered to comply with the provisions of the Labor Law and the Industrial Code Rules at the above premises. These requirements must be complied with IMMEDIATELY unless otherwise specified herein.

1. R 34.3(c) Reconstruct in accordance with Rule 34.1(g) means for the control of dust generated by vermiculite process equipment (stage lines, loading hoppers, screens, furnaces, bucket elevators, material chutes and bagging machines) to conform with rule 34.1(d). File plans and specifications in conformity with rule 34.3(a) showing location and type of dust generating operations and methods of dust control to be employed at each point of dust dissemination together with details of design and operation of such control methods. File plans and specifications in duplicate for approval as required by rule 34.3(a) and do not install, change or alter any machinery or apparatus for any of the purposes specified herein until plans are approved by the Dept. of Labor. Please submit plans in duplicate to the New York State Dept. of Labor, Division of Industrial Hygiene
80 Centre St. New York N.Y. 10013

Requirements explained to: D. Morgan

Title: Plant Inst.

C. A. Schlacter
INSPECTOR
FOR THE COMMISSIONER

NOTE: "Sec" refers to section of the Labor Law; "C" refers to the Industrial Code Rules; "R" refers to Title 12 of the Offic Compilation of Codes, Rules and Regulations of the State of New York. An asterisk "*" indicates that the order is bas on requirements of the State Building Construction Code or the standards accepted thereunder.

SEE REVERSE FOR THE ADDRESSES OF THE DIVISION

155-17 (11-65) N649 2512 100M

PLAINTIFF'S EXHIBIT
G-100.5(3)

WRG00363643
ED_005351_00000368-00157

NOTICE OF VIOLATION AND ORDER TO COMPLY

DATE: [illegible]

OCCUPANCY: [illegible]

NOTICE TO BUILDING: 1

TENANT ☐ OWNER ☐ AGENT ☐

REFER TO

CAPTION: [illegible]

PREMISES: Dunn Road
Town of Brutus

You are hereby ordered to comply with the provisions of the Labor Law and the Industrial Code Rules at the above premises. These requirements must be complied with IMMEDIATELY unless otherwise specified herein.

2. R 34.4(a) Reconstruct air cleaning equipment for exhaust system for storage bins, loading hoppers, screens, furnace, bucket elevators, material chutes and bagging machines of such capacity and operating characteristics as to insure its continued operation without impairing the efficiency of the exhaust system in conformity with rules 34.1(d) and 34.4(a). File plans and specifications in conformity with rules 34.3(a). Please submit plans in triplicate to the New York State Department of Labor Division of Industrial Hygiene 80 Centre St. New York N.Y. 10013

Requirements explained to: D. Morgan

Title: Plant Supt.

C. A. Schlacter
INSPECTOR
FOR THE COMMISSIONER

NOTE: "Sec" refers to section of the Labor Law; "C" refers to the Industrial Code Rules; "R" refers to Title 12 of the Offic Compilation of Codes, Rules and Regulations of the State of New York. An asterisk "*" indicates that the order is ba on requirements of the State Building Construction Code or the standards accepted thereunder.

SEE REVERSE FOR THE ADDRESSES OF THE DIVISION

ISS-17 (11-66) N619 2512 1COM

PLAINTIFF'S EXHIBIT
G-100.5(4)

WRG00363644
ED_005351_00000368-00158

WRG 000413

TO: O. F. STEWART/ENOREE

4E

DATE: December 17, 1971

FROM: F. W. EATON

SUBJ: Dust Survey at Trenton and Easthampton

Since I am familiar with the subject survey, Dick Schneider has asked me to answer questions set forth in your memo of December 1, 1971.

I agree with you that this was an enlightening survey, but unfortunately, communications broke down somewhat with Environmental Analysts and we did not obtain all of the fiber tests at both Trenton and Easthampton that we initially agreed to. Because of the costs involved (approximately $5,000 for this survey) we do not plan at this time for Environmental Analysts to take additional samples on fiber concentration. Since fiber counts measured by the Bureau of Mines at Libby seem to parallel in magnitude those results obtained by Environmental Analysts, it looks as if our present sampling and/or measuring techniques may be giving us false results. I hope that Peter Kostic will resolve this matter this week in his discussions with Industrial Hygienists at the Bureau of Mines in Denver.

The major portion of this report deals with percent free silica and as can be seen from Table 7, there is less than 1% free silica in both vermiculite and perlite when samples are in the aggregate form. It's a different situation, however, when total dust and respirable mass concentrations are sampled and evaluated. This was quite alarming because the majority of us have been under the opinion that vermiculite, especially, did not contain any free silica. The percent free silica in gypsum was another alarming factor because we have been treating this form of dust as nothing more than nuisance dust.

Referring to the sampling locations at Trenton (Figure 1), the #1 vermiculite furnace is the D-16 and it was expanding S.C. #4 during the sampling period. Furnace #2 is the Model A and it was expanding Libby #1. Trenton's D-16 is basically a dust-free operating furnace including the bagging station, but the Model A is far from being up to par. Sampling results, both fiber and silica, are a little misleading if one is to use these results to determine or evaluate the general condition of the furnaces. As you know, there is a large overhead door on the S.E. side of the building which is normally kept open creating a draft or flow of air from one side of the building to the other. It is my personal feeling that the high readings at Location E (D-16) are caused by dust particles being emitted from the Model A, becoming airborne and moving in the direction of the D-16. This, therefore, does not give us a true evaluation of whether fibers are in S.C. ore. Once discrepancies are ironed out on our sampling and testing procedures, we should be able to determine this fact.

PLAINTIFF'S EXHIBIT G-100.901

Cater ex (13) 9/19/96 CHK

When samples were taken at Easthampton, both furnaces were expanding Libby #1. It should also be noted that these samples were taken prior to the installation of new vent systems and bag houses. Sample "J" was taken adjacent to the primary cyclone on #2 furnace and this particular cyclone was full of holes. Actual test results at the two bagging stations bear out visual observations made during the sampling period, where the #1 bagger was covered with dust on the head and shoulders while the #2 bagger was working in a relatively clean environment. I am very disappointed that we did not get fiber count at Easthampton because they probably would have been ~~very high, based on the concentration of total dust and~~ respirable mass.

~~The one part about Environmental Analysis'~~ technique and pro~~cedures for sampling fiber that I did not like was~~ the duration of sampling ~~time. This sampling duration varied from~~ 1-6 minutes and if in that period of time a light fixture was hit or dust blown off a ledge accidently, a high fiber concentration would result.

I hope some of your questions have been answered, but if I can be of any further help in clarifying this report, please let me know.

F. W. Eaton

FWE:jrd

PLAINTIFF'S EXHIBIT
G-100.901(2)

AUTHORIZED SHOP ORDER

LOCATION: NORTH BERGEN, NJ — LOCATION NUMBER: 847

ALL RECORDS — Page

SHOP RECORD NUMBER

TRANS TYPE: 1

DIV	PLT	SEQ
X 6 0 8	5 4 7 1	0 8

LEGEND
1 = NEW
2 = COST ESTIMATE CHANGE

ROUTING INITIAL AND DATE OPPOSITE NAME FOR APPROVAL

NAME	INITIAL	DATE	NAME	INITIAL	DATE
1 F/A Adminis.			5 P.J. Walsh		
2 J.A. Dannecker			6 R.P. Turner		
3 T.H. Pezzullo			7 R.C. Walsh		
4 R.C. Deskin			8 F/A Adminis.		

RECORD 1

APPROPRIATION: 1282 (13-17)

MAKE GOOD REPORT: ENTER "Y" IF REQUIRED (50)

RCA: (18-23)

IDLE EQUIPMENT CHECK: ENTER "Y" IF REQUIRED (51)

ORIGINATOR: Oesch, C. (24-33) — INITIALS — DATE

AUTHORIZED BY: Walsh, R. (34-43)

AUTHORIZED DATE: (44-49) — AUTHORIZATION SIGNATURE

ESTIMATED COST (OMIT CENTS)

LABOR: (52-62)

ALL OTHER COSTS: 34,595 (63-69)

TOTAL ESTIMATED COST: 34,595 (70-76)

CONDENSED TITLE. MAXIMUM OF 45 SPACES (13-57)

RECORD 2: INSULATION REMOVAL

STATE BELOW — ESTIMATE OF SAVINGS OR INCREASES IN GROSS MARGIN. DESCRIPTION OF WORK TO BE DONE. BREAKDOWN OF COST ESTIMATES (WHEN SHOP ORDER INCLUDES BOTH CAPITAL AND EXPENSE ACCOUNTS INDICATE BREAKDOWN BY INSERTING C OR E AFTER EACH ITEM)

This shop order requests authorization to remove the insulation from the North Bergen warehouse. Proposed work will take place in the original, metal section, warehouse.

COST ALLOCATION

	DIV	WHSE/DEPT	ACCOUNT NUMBER LTR	DIV	DEPT	P	OR	S.B	%
RECORD 3	6	650	[redacted]	6	650	[redacted]	98	000	1000
RECORD 4									
RECORD 5									

100 %

WORK DESCRIPTION	ESTIMATED COST
Removal of approximately 5780 square feet of insulation from the underside of the roof and beams. All areas of removal to be painted with a steel primer upon completion.	$31,450
10% Contingency	3,145
TOTAL	$34,595

This work is to be expensed but was budgeted in the 1986 Capital Budget as Item 1282.

Eaton Ex (14) 9/19/96 CHK

PLAINTIFF'S EXHIBIT G-601.42 ALL-STATE LEGAL SUPPLY CO.

R000875

ESTIMATOR — DATE — WERE QUOTATIONS OR ESTIMATES OBTAINED FROM CENTRAL PURCHASING DEPARTMENT? YES ☐ NO ☐ — AUDIT APPROVAL — DATE

GRA 83 233 1 (REV 10 80)

WRG00363647
ED_005351_00000368-00161

ED KEANE - CNA INSPECT.

JOEL WEINGAST
CNA INDUSTRIAL HYGIENIST
201 455 2113
REG OCCUP HEALTH MGR EST REG

R000876

GRACE

Construction Products Division

To: P.J. Walsh
F.W. Eaton

Date: June 23, 1986

From: C.M. Oesch

Subject: Insulation Removal Estimates

Attached are three estimates and supporting documentation for the warehouse insulation removal project. Two of the bids appear to be thoroughly prepared. The third, Scientific Coating Company, is the weakest. This coupled with personal contact between their estimator and Bill Muller during the inspection, tends to lend more confidence to one of the others. Your advice and assistance on our next step is appreciated.

C.M. Oesch

CMO.b

encl.

R000877

Proposal

FINISHING TOUCH
ASBESTOS ABATEMENT CORPORATION, INC.
10 Riverdale Avenue
MONMOUTH BEACH, NEW JERSEY 07750
(201) 222-8372
N.J. Lic. #00040

PROPOSAL SUBMITTED TO: W.R. Grace & Co. % Clifford M. Oesch	PHONE: 869-5220	DATE: June 11, 1986
STREET: 2133 85th Street	JOB NAME: Asbestos Removal	
CITY, STATE AND ZIP CODE: North Bergen, N.J. 07047	JOB LOCATION: same / Warehouse storage area	
ARCHITECT:	DATE OF PLANS:	JOB PHONE:

We hereby submit specifications and estimates for:

Asbestos Removal

1. Remove approx. 5780 Sq. Ft. of Asbestos containing insulation from underside of roof and beams.
2. All Areas of removal to be painted with steel primer uopn completion. (1 coat)
3. Area of removal to be isolated by construction of temporary barrier walls of 6.mil. plastic. Negative air pressure (Mirco-traps to be installed in work area.)
4. Air monitoring to be conducted during removal and upon completion. Reports to be supplied to owner uopon completion .

Approved disposal site to be utilized for Asbestos disposal. (HMDC Site 1C

See enclosed Guide specification for method of removal.

We Propose hereby to furnish material and labor — complete in accordance with above specifications, for the sum of:

Thirth One Thousand Four Hundred Fifty and xx/100 dollars ($ 31,450.00).

Payment to be made as follows:

In Full upon Completion

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workmen's Compensation Insurance.

Authorized Signature: [signature]

Note: This proposal may be withdrawn by us if not accepted within 60 days.

Acceptance of Proposal — The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature: [signature]

Date of Acceptance:

Signature: R000894

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CAMBRIDGE

To: H. C. Duecker
F. Eaton
R. C. Ericson
L. S. Shu
J.C. Yang

Date: 21 December 1983

From: T. E. Hamilton

cc: R. C. Walsh

SUBJECT: Test Method for Determining the Damagability & Subsequent Fiber Release of Sprayed on Asbestos Containing Products

---

I have arranged for a meeting on 3 January 1984 at 2:00 p.m. in the Health, Safety & Toxicology Department to discuss the above mentioned subject. The purpose of this meeting is to develop an action plan and preliminary test protocols. Please plan to attend.

Tom Hamilton

T. E. Hamilton

TEH/al

Eaton
Ex 15
9/19/86 CHE

PLAINTIFF'S EXHIBIT
G-133.1

CPSC

Box H 181 #4 of 5
(no other # on box)

II RESULTS - USER EXPOSURE TO TREMOLITE FIBERS (see note 1)

A. HORTICULTURAL PRODUCTS (simulated tests)

TEST DESCRIPTION	15 minute user exposure (f/cc)			
	TERRA-LITE VERMICULITE		REDI EARTH	
	LIBBY	S.C.	LIBBY	S.C.
1 Soil mixing & potting (15 pots)	<0.14	<0.29	<0.14	0.145
2 Knock out & disposal (5 pots)	<0.14	<0.14	<0.14	<0.14
3 Knock out & total reuse (5 pots)	<0.14	<0.14	<0.14	<0.14
4 Knock out & blend (10 pots)	<0.14	<0.14	<0.14	<0.14

B. LIGHT WEIGHT FERTILIZER (O. M. SCOTT TURF BUILDER)

TEST DESCRIPTION	f/cc CONCENTRATION		
	AREA ENGINEERING	PERSONNEL AVE	PERSONNEL TWA
1.Prior to fertilizing-4 samples	<0.01		
2 During application of Turf Builder		<0.03	<0.0076
(a) Down wind - 5 samples	<0.01		
(b) Down wind - 1 sample	0.01		
(c) Upwind - 1 sample	0.01		
(d) Upwind - 1 sample	0.025		

WRG00364086
ED_005351_00000368-00167

C. HOME INSTALLATION OF VERMICULITE ATTIC INSULATION

1. ENGINEERING/AREA SAMPLES

HOME	TYPE HOME	No. BAGS	f/cc CONCENTRATION			
			ATTIC		LIVING ROOM	
			BEFORE	AFTER	DURIN	AFTER (see note 3)
F	Colonial	55	0.03	<0.01	0.06	<0.01
N	Cape	30	NO TEST		<0.02	
S	Ranch	64	<0.01		0.14	
W	Colonial	70	<0.01	<0.01	0.07	<0.01

2. INSTALLER PERSONNEL SAMPLES

HOME	f/cc CONCENTRATIONS			
	MIN.	MAX.	AVE	TWA (see note 2)
F	2.22	3.26	2.597	0.649
N	0.52	1.52	0.971	0.243
S	1.41	2.90	2.115	0.529
W	1.23	2.90	1.746	0.436

NOTE:

1. The symbol < (less than) indicates no fibers were observed in the counted fields. Since it is the policy of W. R. Grace not to report zero (0) f/cc, one (1) fiber is plugged in the analysis calculations. The < symbol clarifies the quantitative value and indicates no fibers were observed in the counted fields.

WRG00364087
ED_005351_00000368-00168

HOME ATTIC FIBER EXPOSURE TESTS
ROUND 2-1

NILES HOME

27 ×	1.52	=	41.04
27 ×	1.18	=	31.86
27 ×	0.84	=	22.68
27 ×	1.18	=	31.86
35 ×	0.78	=	27.30
35 ×	0.52	=	18.2
178			172.84

$$TWA = \frac{172.84}{178} = 0.971 \times 2/9 = 0.243 \text{ f/cc}$$

CONSTRUCTION
PRODUCTS
DIVISION

NUMBER: 65513
GROUP: Attic Insulation
DATE: 711
CHARGE NO.: 711
REQUESTOR: F. W. Eaton
MARKETING or MANUFACTURING NAME: F. W. Eaton
APPROVED: [illegible]

PAGE 1

REQUEST FOR TECHNICAL SERVICE

PROBLEM TITLE: Tremolite Fiber determination

SIGNIFICANCE: Determine user exposure to Tremolite Fiber during the installatio of Zonolite Vermiculite Attic Insulation.

SPECIFIC OBJECTIVE:

SUGGESTED APPROACH: Phase contrast microscopy

DEADLINE (Last day information will be of value): Routine

DETAILS OF PROBLEM: Determine Engineering and personnel fiber exposure concentra while pouring bound L-1 Attic Insulation in ~~Chelmsford~~, MA CONCORD ~~(Walczyk)~~ (NILES) attic.

REC'D
JAN 04 1980
C.P.D. ENG.

ACCEPTED BY RESEARCH DEPT.: [illegible] DATE: 12/10/79

ASSIGNED TO: J. P. Wallace

ADDITIONAL COPIES: Original to Library J. W. Wolter, E. S. Wood, J. Wilson, F. W. Eaton

CONFIDENTIAL

REQUEST FOR TECHNICAL SERVICE

NUMBER: 65513
GROUP: Attic Insulation
ACTUAL COST: $180.00
REPORTING DATE: December 31, 19

SUMMARY:

Six personnel and one engineering sample, received from D. Niles' home attic test, were evaluated.

DATA AND ANALYSIS:

The results are shown on the attached Air Sampling Record Sheet.

J.P.Wallace

JPW:mlr
attachment

CONFIDENTIAL

GRACE

AIR SAMPLING RECORD SHEET — HOME ATTIC TEST

HEALTH, SAFETY & TOXICOLOGY DEPARTMENT

PLANT LOCATION: HAYNE/CONCORD (D.N.)
CONTAMINANT: FIBER
SAMPLING BY: F.W. EATON
DATE: 12-8-79

SAMPLING CONDITIONS:
OUTSIDE: CLEAR / WINDY
INSIDE DRAFT:
VISIBLE DUST:
HOUSEKEEPING:

TYPE OF SAMPLING:
PERSONNEL: ✓ ENGINEERING:
MEMBRANE (Size & Type):
IMPINGER (Soln & Vol):
PUMP (Type & Model):

Sample Number	Employee Name	SS Number	Job Location & Description	Pump Number	Pump Off	Pump On	Sampling Time	Flow Rate	Total Sampled Volume	Lab Evaluation
N-1	D. MILES		10 BAGS PLACED IN ATTIC BEFORE STARTING SAMPLING PUMPS. THIS SAMPLE COVERS POURING		1153	1126	27	1.5		F/ML. 1.52
N-2			11 BAGS OVER ORIGINAL 1½" GLASS INSULATION. VERY LITTLE HEAD ROOM		1153	1126	27	1.5		1.18
N-3	D. MILES		8 BAGS POURED OVER EXISTING INSULATION. SIMULAR TO SAMPLES N-1 & 2		1220	1153	27	1.5		0.84
N-4					1220	1153	27	1.5		1.18
N-5	D. MILES		POURED 11 BAGS OVER NEW R-19 GLASS INSULATION		1302	1227	35	1.5		0.78
N-6					1302	1227	35	1.5		0.52
			PERSONNEL SAMPLE							
(3) F. EATON (HELPER) ASSISTED OPENING BAGS & DISPOSING OF EMPTY BAGS.										
(4) SAMPLES N-3, 4, 5 & 6 INCLUDED TIME TO CARRY BAGS FROM FRONT LAWN TO ATTIC.										

Additional Comments (1) L-1 BOUND ATTIC W/0.5% CMC @ 0.25 LB/CF FROM EASTHAMPTON

Laboratory Evaluation by: Jean Y. Wallace
Date: 12/12/79

(2) WHEN BUILT, ATTIC HAD APPROX 1½" GLASS MAT INSULATION. OWNER PLACED R-19 GLASS OVER EXISTING INSULATION THIS YEAR BUT RUN SHORT. IN THIS TEST 19 BAGS ZONOLITE PLACED OVER ORIGINAL INSULATION OVER JOISTS. 11 BAGS PLACED OVER NEW GLASS INSULATION

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ED_005351_00000368-00172

GRACE

HEALTH, SAFETY & TOXICOLOGY DEPARTMENT

AIR SAMPLING RECORD SHEET

PLANT LOCATION HOME/CONCORD (DN)
CONTAMINANT FIBER
SAMPLING BY F. W. EATON
DATE: 12-8-79

SAMPLING CONDITIONS:
OUTSIDE CLEAR/WINDY
INSIDE DRAFT
VISIBLE DUST
HOUSEKEEPING

TYPE OF SAMPLING:
PERSONNEL
ENGINEERING ✓
MEMBRANE (Size & Type)
IMPINGER (Soln & Vol)
PUMP (Type & Model)

Sample Number	Employee Name	SS Number	Job Location & Description	Pump Number	Pump Off	Pump On	Sampling Time	Flow Rate	Total Sampled Volume	Lab Evaluation
EN-1	ENGINEERING SAMPLE IN LIVING ROOM DURING			32	1303	1123	100	1.5		F/NL. <0.02*
	POURING OF ROUND L-1 W/0.5% CMC @ 0.25 QTS/CF									
	IN ATTIC OF CAPE COD HOUSE									

ENGINEERING TEST SAMPLE

Additional Comments: * NO VISIBLE FIBERS SEEN. OUTSIDE OF FIELD.

Laboratory Evaluation by: Jean P. Wallace
Date: 12/12/79

8/78 - TEH

WRG00364092
ED_005351_00000368-00173

TB 12/13/79

HOME ATTIC FIBER EXPOSURE TESTS
BOUND 1-1

FILIAULT

28 x 2.77 = 77.56
28 x 3.26 = 91.28
37 x 2.34 = 86.58
37 x 2.22 = 82.14
130 337.56

TWA = 337.56 / 130 = 2.597 x 2/8 = 0.649 f/cc

WALCZYK

43 x 1.91 = 82.13
43 x 1.59 = 68.37
63 x 1.45 = 91.35
63 x 1.23 = 77.49
22 x 2.90 = 63.80
22 x 2.90 = 63.80
256 446.94

TWA = 446.94 / 256 = 1.746 x 2/8 = 0.436 f/cc

SCHOFFE

42 x 1.95 = 81.90
42 x 1.41 = 59.22
36 x 2.03 = 73.08
36 x 2.41 = 86.76
33 x 2.21 = 72.93
33 x 2.90 = 95.70
222 469.59

TWA = 469.59 / 222 = 2.115 x 2/8 = 0.529 f/cc

CONSTRUCTION PRODUCTS DIVISION

REC'D DEC 12 1979 C.P.D. ENG.

PAGE 1

NUMBER: 65515
GROUP: Attic Insulation
DATE:
CHARGE NO.: 1174
REQUESTOR: F. W. Eaton
MARKETING or MANUFACTURING NAME: F. W. Eaton
APPROVED:

REQUEST FOR TECHNICAL SERVICE

PROBLEM TITLE: Tremolite Fiber determination

SIGNIFICANCE: Determine user exposure to Tremolite Fiber during the installation of Zonolite Vermiculite Attic Insulation.

SPECIFIC OBJECTIVE:

SUGGESTED APPROACH: Phase contrast microscopy

DEADLINE (Last day information will be of value): Routine

DETAILS OF PROBLEM: Determine Engineering and personnel fiber exposure concentrati while pouring bound L-1 Attic Insulation in Cazenovia, N.Y. (Schofer) attic.

ACCEPTED BY RESEARCH DEPT.: Julie C Yang/ccc DATE:

ASSIGNED TO: J. P. Wallace

ADDITIONAL COPIES: Original to Library J. W. Wolter, E. S. Wood, J. Wilson, F. W. Eaton

CONFIDENTIAL

REQUEST FOR TECHNICAL SERVICE

NUMBER: 65515
GROUP: Attic Insulation
ACTUAL COST: $220.00
REPORTING DATE: Dec. 12, 1979

SUMMARY:

Four engineering and six personnel samples received from New York were evaluated.

DATA AND ANALYSIS:

The results are shown on the attached Air Sampling Record sheet.

Jean P. Wallace
J. P. Wallace

JPW:mlr
attachment

CONFIDENTIAL

GRACE

ENGINEERING SAMPLES

AIR SAMPLING RECORD SHEET

HEALTH, SAFETY & TOXICOLOGY DEPARTMENT

PLANT LOCATION HOME - CAZENOVIA N.Y.

CONTAMINANT FIBER

SAMPLING BY F.W. EATON

DATE: 11/27/79 & 11/28/79

SAMPLING CONDITIONS:

OUTSIDE CLEAR 50's

INSIDE DRAFT

VISIBLE DUST

HOUSEKEEPING

TYPE OF SAMPLING:

PERSONNEL ENGINEERING ✓

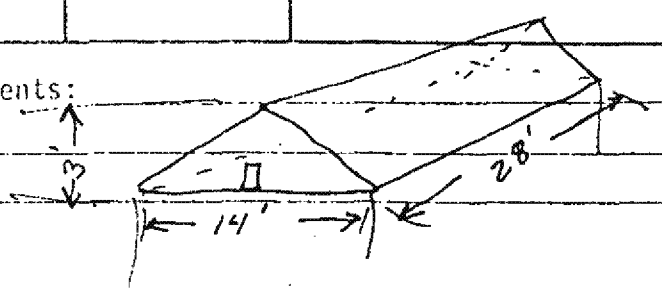
MEMBRANE (Size & Type)

IMPINGER (Soln & Vol)

PUMP (Type & Model)

Sample Number	Employee Name	SS Number	Job Location & Description	Pump Number	Pump Off	Pump On	Sampling Time	Flow Rate	Total Sampled Volume	Lab Evaluation
ES-1	ENG. SAMPLE 11/27/79		SAMPLE TAKEN IN ATTIC BEFORE POURING BOUND L-1 ATTIC FILL	34 ~~37~~	2022	1532	290	1.5		<0.01
ES-2			SAME AS ES-1	35 ~~34~~	2022	1532	290	1.5		<0.01
ES-3	ENG. SAMPLE 11/28/79		SAMPLE TAKEN IN BEDROOM 2ND FL JUST OUTSIDE ENTRANCE TO EL ATTIC	33	1236	1021	135	1.5		0.24
ES-4			SAMPLE TAKEN IN CENTER OF LIVING ROOM 1ST FL.	32	1236	1023	133	1.5		0.14
		ATTIC INSULATION WAS 60 DAY WEEDS PART L-1 BOUND w/ 0.5% CMC @ 0.28 QTS/SF		TEST MATERIAL PRODUCED 9/28/79						

Additional Comments:



Laboratory Evaluation by: Jean P. Wallace

Date: 12/6/79

ENGINEERING TEST SAMPLE

/78 - TSL

WRG00364096

ED_005351_00000368-00177

GRACE

AIR SAMPLING RECORD SHEET HOME ATTIC TEST (2.S.)

HEALTH, SAFETY & TOXICOLOGY DEPARTMENT

PLANT LOCATION HOME CAZENOVIA N.Y.

CONTAMINANT FIBER

SAMPLING BY F. W. EATON

DATE: 11/28/79

SAMPLING CONDITIONS:

OUTSIDE CLEAR/COOL

INSIDE DRAFT

VISIBLE DUST

HOUSEKEEPING

TYPE OF SAMPLING:

PERSONNEL ✓ ENGINEERING

MEMBRANE (Size & Type)

IMPINGER (Soln & Vol)

PUMP (Type & Model)

Sample Number	Employee Name	SS Number	Job Location & Description	Pump Number	Pump Off	Pump On	Sampling Time	Flow Rate	Total Sampled Volume	Lab Evaluation
S-1	HAROLD		POURING BOUND 2-1 ATTIC INSULATION. PRIOR TO STARTING TEST (AIR SAMPLES) APPROX 35 BAGS OF INSULATION WERE PLACED IN ATTIC THROUGH WALL OPENING IN 2ND FL BED ROOM.	34	1057	1015	42	1.5		1.95
S-2				35	1057	1015	42	1.5		1.41
S-3	HAROLD		SAME AS S-1 & 2		1133	1057	36	1.5		2.03
S-4					1133	1057	36	1.5		2.41
S-5	HAROLD		AFTER BREAK CARRIED APPRX 30 BAGS TO 2ND FL. STARTED AIR SAMPLING AT START OF POURING FILL. TOTAL NUMBER OF BAGS USED 64		1230	1157	33			2.21
S-6					1230	1157	33			2.90

COMMENTS CONT.

(4) DUE TO LOW HEAD ROOM, ATTIC FILL HAD TO BE PUSHED W/ TEE PUSHER BACK TO EAVE. CONSIDERING HOW ATTIC FILL WAS HANDLED, LITTLE DUST WAS GENERATED.

(5) THE ONLY ADVERSE COMMENT FROM INSTALLER WAS, ~~HE STATED~~ THAT HIS FACE AROUND RESPIRATOR FELT TIGHT DUE CMC. — ?

Additional Comments: (1) PUMP 34 LEFT SHOULDER, PUMP 35 RIGHT

(2) THIS IS 60 DA TEST MAT'L. BOUND W/ 0.5% CMC @ 0.28 QTS/CF

(3) ATTIC IS A 14'X28' EL ADDITION W/ GLASS FIBER MATS COMPACTED TO APPROX 1½". 3' HEAD ROOM AT RIDGE.

Laboratory Evaluation by: Joan P. Wallace

Date: 12/3/79

PERSONNEL SAMPLE

78 - TEH

WRG00364097

ED_005351_00000368-00178

CONSTRUCTION
PRODUCTS
DIVISION

RECD
DEC 12 1979
C.P.D. ENG.

NUMBER: 65516
GROUP: Attic Insulation
DATE:
CHARGE NO.: 1174
REQUESTOR: F. W. Eaton
MARKETING or MANUFACTURING
NAME: F. W. Eaton
APPROVED:

PAGE 1

REQUEST FOR TECHNICAL SERVICE

PROBLEM TITLE: Tremolite Fiber determination

SIGNIFICANCE: Determine user exposure to Tremolite Fiber during the installation of Zonolite Vermiculite Attic Insulation.

SPECIFIC OBJECTIVE:

SUGGESTED APPROACH: Phase contrast microscopy

DEADLINE (Last day information will be of value): Routine

DETAILS OF PROBLEM: Determine Engineering and personnel fiber exposure concentrat while pouring bound L-1 Attic Insulation in Chelmsford, MA (Walczyk) attic.

ACCEPTED BY RESEARCH DEPT.: Jarla C. Yung/CCO DATE:

ASSIGNED TO: J. P. Wallace

ADDITIONAL COPIES: Original to Library J. W. Wolter, E. S. Wood, J. Wilson, F. W. Eaton

CONFIDENTIAL

REQUEST FOR TECHNICAL SERVICE

NUMBER:	65516
GROUP:	Attic Insulation
ACTUAL COST:	$200.00
REPORTING DATE:	Dec. 12, 1979

SUMMARY:

Ten engineering and six personnel samples received from Chelmsford, Massachusetts (Walczyk attic) were evaluated.

DATA AND ANALYSIS:

The results are shown on the attached Air Sampling Record sheet.

Jean P. Wallace
J. P. Wallace

JPW:mlr
attachment

CONFIDENTIAL

GRACE

AIR SAMPLING RECORD SHEET

HEALTH, SAFETY & TOXICOLOGY DEPARTMENT

PLANT LOCATION HOMIE/CHELMSFORD (PLANT)

CONTAMINANT FIBER

SAMPLING BY EATON/WALZCYK

DATE: 11/30/79

SAMPLING CONDITIONS:

OUTSIDE CLEAR/COOL

INSIDE DRAFT

VISIBLE DUST

HOUSEKEEPING

TYPE OF SAMPLING:

PERSONNEL ✓ ENGINEERING

MEMBRANE (Size & Type)

IMPINGER (Soln & Vol)

PUMP (Type & Model)

Sample Number	Employee Name	SS Number	Job Location & Description	Pump Number	Pump Off	Pump On	Sampling Time	Flow Rate	Total Sampled Volume	Lab Evaluation
W-1	WALZCYK		① PLACED 16-3CF BAGS OF L-1 BOUND ATTIC FILL IN ATTIC BEFORE STARTING SAMPLING PUMPS.	34	1207	1124	43	1.5		F/cc 1.91
W-2			② AT 1140 STARTED CARRYING 16 BAGS TO ATTIC WITH PUMPS RUNNING. 32 BAGS PLACED IN ATTIC DURING THIS TEST.	35	1207	1124	43	1.5	*	1.59
W-3	WALZCYK		① 10 MIN COFFEE BREAK ② @ 1217 STARTED CARRYING 16 BAGS TO ATTIC ③ @ 1245 STARTED	34	1310	1207	63	1.5		1.45
W-4			CARRYING 16 BAGS TO ATTIC	35	1310	1207	63	1.5		1.23
W-5	WALZCYK		① CARRIED & SPREAD 6 BAGS IN ATTIC ② RE-ARRANGED ATTIC AND PICKED UP	34	1332	1310	22	1.5		2.90
W-6				35	1332	1310	22	1.5		2.90
⑤	THE ONLY DUST THAT APPEARED TO BE GENERATED WAS FROM EXISTING CELLULOSE INSULATION.									
⑥	TOTAL BAGS USED	70					32 16 6 54			
⑦	SAMPLE OF EXISTING CELLULOSE INSULATION SENT TO LAB									
8	FULL HEAD ROOM AT ROOF RIDGE (* VERY FINE TYPE FIBER)									

Additional Comments: ① BOUND L-1 W/0.5% CMC @ 0.25 QTS/CF MAT'L FROM ~~WEEDSPORT~~ EASTHAMPTON ② PUMP 34 LEFT SHOULDER, 35 RIGHT. ③ F. EATON WAS HELPER HANDLING FULL & EMPTY BAGS IN ATTIC ④ L-1 ATTIC FILL IS BEING PLACED OVER APPROX 5" CELLULOSE WHICH SETTLES/COMPACTS WHEN VERMICULITE IS ADDING ENOUGH VERMICULITE TO FILL APPROX 2" ABOVE JOISTS.

Laboratory Evaluation by: Jean P. Walton

Date: 12/6-/79

WRG00364100

ED_005351_00000368-00181

ENGINEERING SAMPLE

GRACE

AIR SAMPLING RECORD SHEET

HOME ATTIC TEST

HEALTH, SAFETY & TOXICOLOGY DEPARTMENT

PLANT LOCATION HOME ATTIC (DDW)

CONTAMINANT FIBER

SAMPLING BY D.D. WALZCYK

DATE: 11/29/79 & 11/30/79

SAMPLING CONDITIONS:

OUTSIDE _____

INSIDE DRAFT _____

VISIBLE DUST _____

HOUSEKEEPING _____

TYPE OF SAMPLING:

PERSONNEL _____ ENGINEERING ✓

MEMBRANE (Size & Type) _____

IMPINGER (Soln & Vol) _____

PUMP (Type & Model) _____

Sample Number	Employee Name	SS Number	Job Location & Description	Pump Number	Pump Off	Pump On	Sampling Time	Flow Rate	Total Sampled Volume	Lab Evaluation
EW-1	SAMPLE FILL	TAKEN IN	ATTIC PRIOR TO POURING ATTIC		10:55 P	6:15 P	~~10:55~~ 280	1.5		<0.01
EW-2	SAMPLE BOUND L-1	TAKEN IN INSULATION	LIVING ROOM WHILE POURING IN ATTIC	32	1422	1114	188	1.5		0.07
			ENGINEERING TEST SAMPLE							

Additional Comments: _____

Laboratory Evaluation by: Jean P. Wallace

Date: 12/6/79

8/78 - TEH

WRG00364101

ED_005351_00000368-00182

CONSTRUCTION
PRODUCTS
DIVISION

REC'D
DEC 12 1979
C.P.D. ENG.

PAGE 1

NUMBER: 65517
GROUP: Attic Insulation
DATE:
CHANGE NO.: 71-174
REQUESTOR: F. W. Eaton
MARKETING or MANUFACTURING
NAME: F. W. Eaton
APPROVED:

REQUEST FOR TECHNICAL SERVICE

PROBLEM TITLE: Tremolite Fiber determination

SIGNIFICANCE: Determine user exposure to Tremolite Fiber during the installation of Zonolite Vermiculite Attic Insulation.

SPECIFIC OBJECTIVE:

SUGGESTED APPROACH: Phase contrast microscopy

DEADLINE (Last day information will be of value): Routine

DETAILS OF PROBLEM: Determine Engineering and personnel fiber exposure concentratic while pouring bound L-1 Attic Insulation in Chelmsford, MA (Filiault) attic.

ACCEPTED BY RESEARCH DEPT.: John C. Yang/CCS DATE:

ASSIGNED TO: J. P. Wallace

ADDITIONAL COPIES: Original to Library J. W. Wolter, E. S. Wood, J. Wilson, F. W. Eaton

CONFIDENTIAL

REQUEST FOR TECHNICAL SERVICE

NUMBER: 65517
GROUP: Attic Insulation
ACTUAL COST: $140.00
REPORTING DATE: Dec. 12, 1979

SUMMARY:

Four personnel and two engineering samples received from Chelmsford, Massachusetts (Filiault attic) were evaluated.

DATA AND ANALYSIS:

The results are shown on the attached Air Sampling Record sheet.

J. P. Wallace

JPW:mlr
attachment

CONFIDENTIAL

GRACE

AIR SAMPLING RECORD SHEET

HEALTH, SAFETY & TOXICOLOGY DEPARTMENT

PLANT LOCATION Home / Chelmsford (RF)

CONTAMINANT Fiber

SAMPLING BY Eaton / Walcey / Filiault

DATE: 11/30/79

SAMPLING CONDITIONS:

OUTSIDE Clear / cool

INSIDE DRAFT

VISIBLE DUST

HOUSEKEEPING

TYPE OF SAMPLING:

PERSONNEL ✓ ENGINEERING

MEMBRANE (Size & Type)

IMPINGER (Soln & Vol)

PUMP (Type & Model)

Sample Number	Employee Name	SS Number	Job Location & Description	Pump Number	Pump Off	Pump On	Sampling Time	Flow Rate	Total Sampled Volume	Lab Evaluation
F-1	22 Filiault		Poured 22 Bags of Bound L-1	34	1528	1500	28	1.5		2.77
F-2				35	1528	1500	28	1.5		3.26
F-3	Filiault		Poured 33 Bags of L-1 (Bound)	34	1605	1528	37	1.5		2.34
F-4				35	1605	1528	37	1.5		2.22

Comments Cont.

(4) Total Number of Bags Used 55. Another 25-30 Bags Are Required To Complete Complete the Attic with Fill Level To Top of Joist.

(5) Full Head Room at Roof Ridge

(6) None of the Sampling Time was on Bring Bags To Attic — only Pouring Fill

Additional Comments: (1) Bound L-1 w/0.5% CMC @ 0.75 qts/cf Mat'l From Easthampton (2) Pump 34 Left Shoulder, 35 Right (3) L-1 Attic Fill is Being Placed over Loose Glass Fiber.

Laboratory Evaluation by: Jean P. Wallace

Date: 12/7/79

PERSONNEL SAMPLE

8/78 - TEH 55T

WRG00364104

ED_005351_00000368-00185

GRACE

ENGINEERING SAMPLE

AIR SAMPLING RECORD SHEET

HEALTH, SAFETY & TOXICOLOGY DEPARTMENT

PLANT LOCATION Home Attic (Filiault)

CONTAMINANT FIBER

SAMPLING BY D. WALCZYK

DATE: 11/29/79

SAMPLING CONDITIONS:

OUTSIDE

INSIDE DRAFT

VISIBLE DUST

HOUSEKEEPING

TYPE OF SAMPLING: Home Attic Test

PERSONNEL ENGINEERING ✓

MEMBRANE (Size & Type)

IMPINGER (Soln & Vol)

PUMP (Type & Model)

Sample Number	Employee Name	SS Number	Job Location & Description	Pump Number	Pump Off	Pump On	Sampling Time	Flow Rate	Total Sampled Volume	Lab Evaluation
EF-1	SAMPLE TAKEN IN ATTIC	FILL. PUMP	ATTIC PRIOR TO POURING BATTERY WENT DEAD. DURING TEST	33		8:45 P	APPROX 180	1.5		0.03
EF-2	SAMPLE TAKEN IN L-1 BOUND	ATTIC	LIVING ROOM WHILE PLACING ATTIC INSULATION IN ATTIC	32	1606	1445	81	1.5		0.06

ENGINEERING TEST SAMPLE

Additional Comments: (1) PUMP 33 (SAMPLE EF-1) WENT DEAD AFTER APPROX 3 HR.

Laboratory Evaluation by: Jean P. Wallace

Date: 12/6/79

9/79 - TEL

WRG00364105

ED_005351_00000368-00186

CONSTRUCTION
PRODUCTS
DIVISION

REC'D
DEC 12 1979
C.P.D. ENG.

PAGE 1

NUMBER: 65514
GROUP: Attic Insulation
DATE:
CHANGE NO.: 71-174
REQUESTOR: F. W. Eaton
MARKETING or MANUFACTURING A
NAME: F. W. Eaton
APPROVED:

REQUEST FOR TECHNICAL SERVICE

PROBLEM TITLE: Tremolite Fiber determination

SIGNIFICANCE: Determine user exposure to Tremolite Fiber during the installation of Zonolite Vermiculite Attic Insulation.

SPECIFIC OBJECTIVE:

SUGGESTED APPROACH: Phase contrast microscopy

DEADLINE (Last day information will be of value): Routine

DETAILS OF PROBLEM: Determine Engineering ~~and personnel~~ fiber ~~exposure~~ concentratio ~~while pouring~~ bound L-1 Attic Insulation in Concord, MA (Eaton) attic.

ACCEPTED BY RESEARCH DEPT.: John C. Yang/C.C.O DATE: 12/3/79

ASSIGNED TO: J. P. Wallace

ADDITIONAL COPIES: Original to Library J. W. Wolter, E. S. Wood, J. Wilson, F. W. Eaton

CONFIDENTIAL

WRG00364106
ED_005351_00000368-00187

REQUEST FOR TECHNICAL SERVICE

NUMBER: 65514
GROUP: Attic Insulation
ACTUAL COST: $100.00
REPORTING DATE: Dec. 12, 1979

SUMMARY:

Two engineering samples received from Fred Eaton were evaluated.

DATA AND ANALYSIS:

The results are shown on attached Air Sampling Record sheet.

J.P.Wallace

HCD:mlr
attachment

GRACE

ENGINEERING SAMPLES
AIR SAMPLING RECORD SHEET

L-1 ATTIC INSULATION TEST

HEALTH, SAFETY & TOXICOLOGY DEPARTMENT

PLANT LOCATION PRIVATE HOME (FWE)

CONTAMINANT FIBER

SAMPLING BY F.W. EATON

DATE: 11-21-79

SAMPLING CONDITIONS:

OUTSIDE

INSIDE DRAFT

VISIBLE DUST

HOUSEKEEPING

TYPE OF SAMPLING:

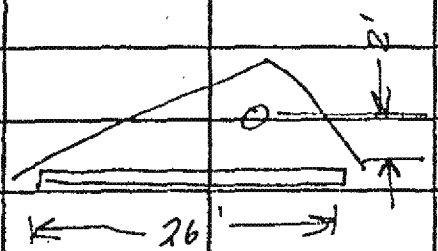
PERSONNEL ENGINEERING

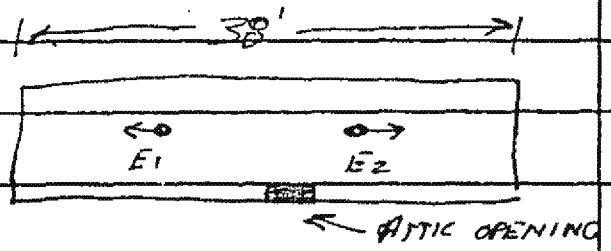
MEMBRANE (Size & Type)

IMPINGER (Soln & Vol)

PUMP (Type & Model)

Sample Number	Employee Name	SS Number	Job Location & Description	Pump Number	Pump Off	Pump On	Sampling Time	Flow Rate	Total Sampled Volume	Lab Evaluation
EE-1			ENGINEERING SAMPLE IN ATTIC OF PRIVATE HOME. WHEN HOME WAS BUILT IN 1963 3" GLASS FIBER WAS PLACED IN ATTIC, IN 1970 APPROX 100 BAGS OF L-1 FROM EASTHAMPTON WAS POURED OVER EXISTING FIBER GLASS INSULATION TO A DEPTH OF APPROX 3"	34	2048	1424	384	1.5		<0.01
EE-2				35	2048	1424	384	1.5		<0.01





THE ATTIC IS VENTED AT BOTH ENDS AND DAUGHTER'S "DON'T THROW AWAY" ITEMS ARE STORED IN ATTIC.

Additional Comments:

Laboratory Evaluation by: Jean P. Wallace

Date: 12/6/79

8/78 - TEH

WRG00364108
ED_005351_00000368-00189

CONSTRUCTION
PRODUCTS
DIVISION

NUMBER: 65525
GROUP: Attic Insulation
DATE: 2/5/80
CHARGE NO.: 711
REQUESTOR: F.W.Eaton

MARKETING or MANUFACTURING APPROVAL:
NAME:
APPROVED:

REQUEST FOR TECHNICAL SERVICE

PROBLEM TITLE: TREMOLITE FIBER DETERMINATION (of two samples)

SIGNIFICANCE: Determine residual tremolite fiber (if present) in attic and living space after bound L-1 attic insulation has been in place for approximately 2 months.

SPECIFIC OBJECTIVE:

SUGGESTED APPROACH:

DEADLINE (Last day information will be of value): 2/1/80

DETAILS OF PROBLEM: Niles Home in Concord, Mass.

REC'D
FEB 14 1980
C.P.D. ENG.

ACCEPTED BY RESEARCH DEPT.: John C. Yung DATE: 2/12/80

ASSIGNED TO: B. O'Leary

ADDITIONAL COPIES: Original to Library, H.C.Duecker, F.W.Eaton, J.Wilson, J.W.Wolter, E.S.Wood

CONFIDENTIAL

REQUEST FOR TECHNICAL SERVICE

NUMBER:	65525
GROUP:	Attic Insulation
ACTUAL COST:	$120.00
REPORTING DATE:	Feb. 6, 1980

SUMMARY:

Two Engineering samples were received from Concord, Mass. Both slides were extremely clean with no visible fibers.

DATA AND ANALYSIS:

Results are shown on attached Air Sampling Record Sheet.

Barbara J. O'Leary
B.J.O'Leary

BJO'L:mlr
attachment

GRACE

AIR SAMPLING RECORD SHEET

HEALTH, SAFETY & TOXICOLOGY DEPARTMENT

PLANT LOCATION Niles Homes Concord MA.

CONTAMINANT Fiber

SAMPLING BY F.W. Eaton

DATE: 1/31/80

SAMPLING CONDITIONS:

OUTSIDE

INSIDE DRAFT

VISIBLE DUST

HOUSEKEEPING

TYPE OF SAMPLING:

PERSONNEL

ENGINEERING ✓

MEMBRANE (Size & Type)

IMPINGER (Soln & Vol)

PUMP (Type & Model)

Sample Number	Employee Name	SS Number	Job Location & Description	Pump Number	Pump Off	Pump On	Sampling Time	Flow Rate	Total Sampled Volume	Lab Evaluation f/ml
NE-3			MIDDLE OF LIVING ROOM		1435	1020	255	1.5		<0.01*
NE-4			IN ATTIC 3" ABOVE L-1 ATTIC		1439	1031	248	1.5		<0.01*
		NOTE:	ON 12/8/79 30-3CF BAGS (BOUND W/0.5% CMC @ 0.25 OTS/CF) ATTIC (L-1) INSULATION WERE PLACED IN ATTIC. THESE ENGINEERING SAMPLES WERE TAKEN TO MONITOR ATTIC & LIVING SPACE AFTER INSULATION HAD BEEN IN PLACE APPROX 2 MO.						

ENGINEERING TEST SAMPLE

Additional Comments: * no visible fibers

Laboratory Evaluation by: Barbara J. O'Leary

Date: 2/6/80

WRG00364111

ED_005351_00000368-00192

CONSTRUCTION
PRODUCTS
DIVISION

NUMBER: 65524
GROUP: ATTIC INSULATION
DATE: 2/5/80
CHARGE NO.: 711
REQUESTOR: EATON
MARKETING or MANUFACTURING APPROVAL
NAME:
APPROVED: [illegible]

PAGE 1

REQUEST FOR TECHNICAL SERVICE

PROBLEM TITLE: TREMOLITE FIBER DETERMINATION

SIGNIFICANCE: DETERMINE RESIDUAL TREMOLITE FIBER (IF PRESENT) IN ATTIC & LIVING SPACE AFTER BOUND L-1 ATTIC INSULATION HAS BEEN IN PLACE FOR APPROX 2 YRS.

SPECIFIC OBJECTIVE:

SUGGESTED APPROACH:

DEADLINE (Last day information will be of value): 2/7/80 !

DETAILS OF PROBLEM:

SCHUFFER ~~[illegible]~~ HOME / CONCORD MA.

ACCEPTED BY RESEARCH DEPT.: [illegible] DATE: 2/5/80

ASSIGNED TO: B. O'Leary

ADDITIONAL COPIES: Original to Library, H.C.Duecker, F.W.Eaton, J.Wilson, J.W.Wolter, E.S.Wood

CONFIDENTIAL

REC'D
FEB 14 1980
C.P.D. ENG.

WRG00364112
ED_005351_00000368-00193

REQUEST FOR TECHNICAL SERVICE

NUMBER: 65524
GROUP: Attic Insulation
ACTUAL COST: $120.00
REPORTING DATE: Feb.6, 1980

SUMMARY:

Two Engineering samples were received from Cazenovia, New York. Both slides showed no visible fibers.

DATA AND ANALYSIS:

Results are shown on the attached Air Sampling Record Sheet.

Barbara J. O'Leary
B.J.O'Leary

BJO'L:mlr
attachment

GRACE

AIR SAMPLING RECORD SHEET

HEALTH, SAFETY & TOXICOLOGY DEPARTMENT

PLANT LOCATION Schofer Home Caseno via N.Y.

CONTAMINANT Fiber

SAMPLING BY F.W. Eaton

DATE: 2-1-80

SAMPLING CONDITIONS:

OUTSIDE Cold 0°F Windy

INSIDE DRAFT

VISIBLE DUST

HOUSEKEEPING

TYPE OF SAMPLING:

PERSONNEL

ENGINEERING ✓

MEMBRANE (Size & Type)

IMPINGER (Soln & Vol)

PUMP (Type & Model)

Sample Number	Employee Name	SS Number	Job Location & Description	Pump Number	Pump Off	Pump On	Sampling Time	Flow Rate	Total Sampled Volume	Lab Evaluation f/cc
SE-6	Engineering Sample		Attic	33	1400	0958	242	1.5		<0.01*
SE-7	Engineering Sample		Living Room	32	1400	1001	239	1.5		<0.01*
	Note: ① on 11/28/79		64-3CF Bags (Bound w/0.5% CMC @ 0.28 oz/cf) L-1 Attic							
			Insulation were placed in the Attic. These Engineering Samples							
			were taken to monitor Attic & Living Space after insulation had							
			been in place approx 2 mo							
	② From 1000 - 1200 owner was house cleaning									
	③ From 1130 - 1400 2 children were playing including 2 cats.									

ENGINEERING TEST SAMPLE

Additional Comments: * no visible fibers

Laboratory Evaluation by: Barbara J. O'Leary

Date: 2/5/80

WRG00364114

ED_005351_00000368-00195

CONSTRUCTION
PRODUCTS
DIVISION

NUMBER: 65522
GROUP: ATTIC INSULATION
DATE:
CHARGE NO.: 70-711
REQUESTOR: F.W. EATON
MARKETING or MANUFACTURING APPROVAL:
NAME: F.W. EATON
APPROVED:

PAGE 1

REQUEST FOR TECHNICAL SERVICE

PROBLEM TITLE: TREMOLITE FIBER DETERMINATION

SIGNIFICANCE: DETERMINE (IF PRESENT) RESIDUAL FIBER CONCENTRATIONS IN ATTIC & LIVING ROOM OF TWO HOMES INSULATED 11/30/79

~~SPECIFIC OBJECTIVE~~: WITH L-1 BOUND W/0.5% CMC @ 0.25 QTS/CF ZONOLITE ATTIC INSULATION

SUGGESTED APPROACH: PHASE CONTRAST MICROSCOPY

DEADLINE (Last day information will be of value): 2/1/80

DETAILS OF PROBLEM:

RECD
JAN 30 1980
C.P.D. ENG.

ACCEPTED BY RESEARCH DEPT.: [signature] DATE: 1/28/80

ASSIGNED TO: J.P. Wallace

ADDITIONAL COPIES: Original to Library, H.C.Duecker, F.W.Eaton, J.Wilson, J.W.Wolter, E.S.Wood

CONFIDENTIAL

REQUEST FOR TECHNICAL SERVICE

NUMBER: 65522
GROUP: Attic Insulation
ACTUAL COST: $220.00
REPORTING DATE: 1/29/80

ENGINEERING TEST SAMPLE

SUMMARY:

Four home-attic samples received from Fred Eaton were evaluated for fiber content.

DATA AND ANALYSIS:

The results are shown in the attached Air Record Sampling sheets.

Jan P. Wallace
J. P. Wallace

JPW:mlr
attachments

CONFIDENTIAL

GRACE

AIR SAMPLING RECORD SHEET

HEALTH, SAFETY & TOXICOLOGY DEPARTMENT

PLANT LOCATION Home Attic (RF) Chelmsford MA

CONTAMINANT Fiber

SAMPLING BY D.D. Walczyk

DATE:

SAMPLING CONDITIONS:

OUTSIDE

INSIDE DRAFT

VISIBLE DUST

HOUSEKEEPING

TYPE OF SAMPLING:

PERSONNEL

ENGINEERING ✓

MEMBRANE (Size & Type)

IMPINGER (Soln & Vol)

PUMP (Type & Model)

Sample Number	Employee Name	SS Number	Job Location & Description	Pump Number	Pump Off	Pump On	(MIN.) Sampling Time	Flow Rate	Total Sampled Volume	Lab Evaluation
										FIBERS/cc
EF-3	Engineering Sample		Attic - Filiault Res.	ICG-32	2:43 p	8:43 A	360 ~~6 HRS~~	1.5		<0.01*
EF-4	Engineering Sample		Living Room - Filiault Res.	ICG-34	2:40 p	8:40 A	360 ~~6 HRS~~	1.5		<0.01*

NOTE: ON NOVEMBER 30, 1979 55-3CF BAGS (BOUND W/ 0.5% OMC @ 0.25 ATS/CF) ZONOLITE ATTIC INSULATION WERE PLACED IN THE ATTIC. THESE ENGINEERING SAMPLES WERE TAKEN TO MONITOR ATTIC & LIVING SPACE AFTER INSULATION HAD BEEN IN PLACE FOR APPROX 2 MO. TS

ENGINEERING TEST ONLY

Additional Comments: * No visible fiber outside of the counting field.

Laboratory Evaluation by: Jean P. Wallace

Date: 1/28/80

WRG00364117

ED_005351_00000368-00198

GRACE

AIR SAMPLING RECORD SHEET

HEALTH, SAFETY & TOXICOLOGY DEPARTMENT

PLANT LOCATION Home Attic (DDW) CHELMSFORD MA.

CONTAMINANT Fiber

SAMPLING BY D. D. Walzcyk

DATE:

SAMPLING CONDITIONS:

OUTSIDE

INSIDE DRAFT

VISIBLE DUST

HOUSEKEEPING

TYPE OF SAMPLING:

PERSONNEL

ENGINEERING ✓

MEMBRANE (Size & Type)

IMPINGER (Soln & Vol)

PUMP (Type & Model)

ample umber	Employee Name	SS Number	Job Location & Description	Pump Number	Pump Off	Pump On	Sampling Time	(MIN.) Flow Rate	Total Sampled Volume	Lab Evaluation
EW-3	Engineering Sample		Attic - Walzcyk Res.	ICG-35	2:06 P	8:06 A	240 ~~6 HRS~~	1.5		Fibers/cc <0.01
							120	1.0		<0.03
EW-4	Engineering Sample		Living Room - Walzcyk Res.	ICG-5	2:03 P	8:03 A	~~6 HRS~~ ~~2:03 P~~ 360	1.6		<0.01
	Note: ①	On November 30, 1979 70-3CF Bags of (Bound w/0.5% CMR @ 0.25 Qts/cf)								
		Zonolite Attic Insulation were placed in the Attic. These Engineering								
		samples were taken to monitor Attic & Living space after insulation								
		had been in place for approx 2 Mo. FE								
	②	Note change in flow rate on sample EW-3								

ENGINEERING TEST SAMPLE

Additional Comments:

Laboratory Evaluation by: Jean P. Wallace

Date: 1/28/80

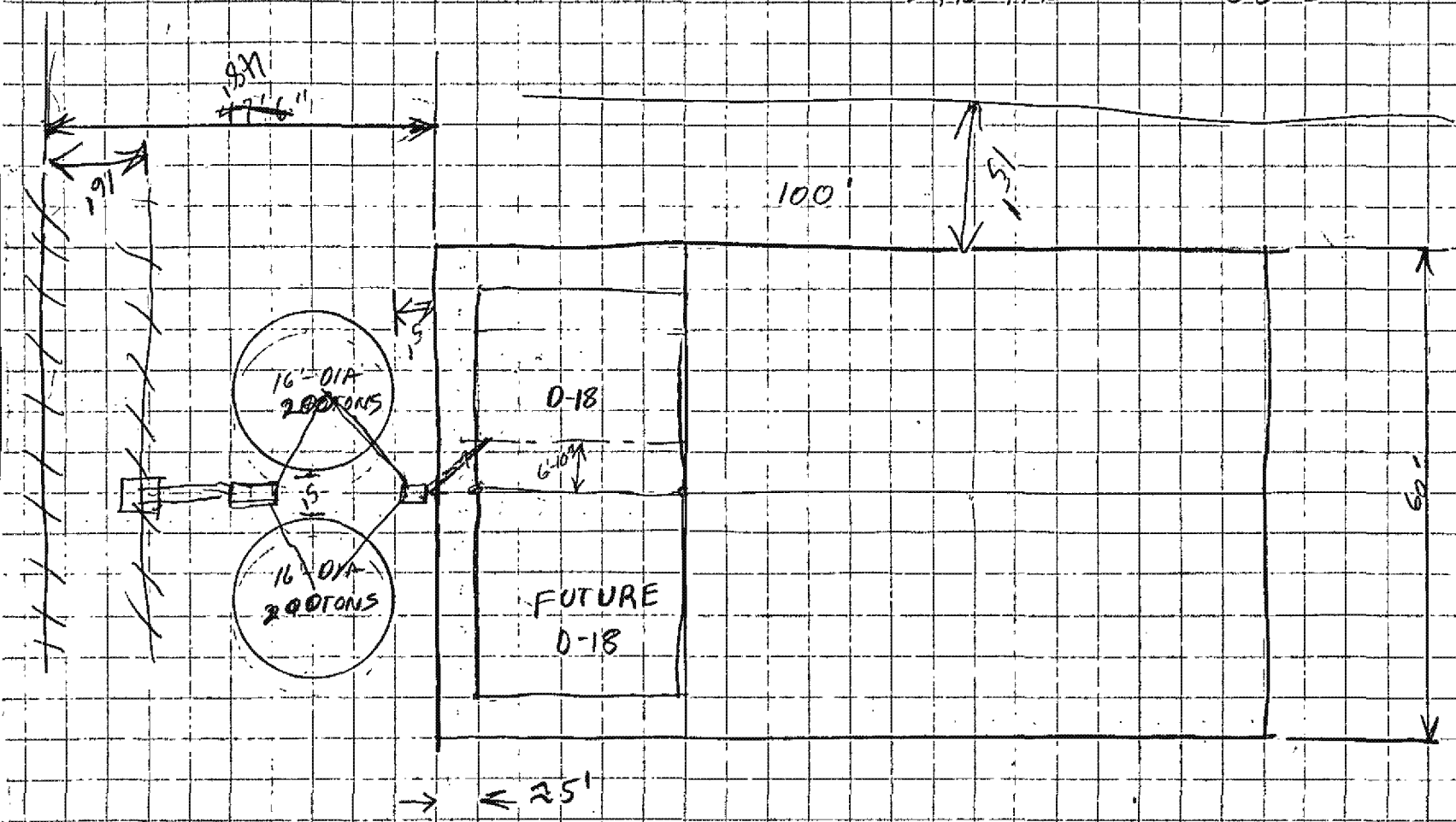
WRG00364118

ED_005351_00000368-00199

YALYE PACKERS - CANADA

ASSUME MAX HEIGHT TO PEAK OF ROOF
36'-0"
ROOF SLOPE - 1"-12"
EVE HEIGHT - 33'-6"

33
35'



YEAR 1981

NY State Elect & Gas Corp

- UTILITY BILLS -

~~VN-150516~~

VN - 150607

PERIOD	GAS - CUFT	GAS - NET $	ELECT - KWH	ELECT - NET $	SALES TAX - 7%	TOTAL BILL	CHECK #
VN-150617							
11/25/80 - 12/26/80	7010	$ 2613.95	24880 206	$ 1098.82 16.68	260.37	3979.82	149925
2/26/80 - 1/27/81	3540	1328.88	24320 203	1142.14 16.98	174.16	2662.16	154482
1/27/81 - 2/27/81	1950	755.92	24880 169	1131.47 16.76	133.28	2037.43	155652
2/27/81 - 3/27/81	3540	1355.47	19280 169	1037.48 17.43	168.72	2579.10	158558
3/27/81 4/28/81	5910	2103.29	21520 142	1040.03 16.88	221.21	3381.41	162006
4/28/81 - 5/28/81	4390	1592.54	13650 119	807.51 17.32	169.22	2586.59	164371
5/28 - 6/28	4740	1631.36	12400 119	757.76 19.26	1126.96 168.55	2576.40	168563
6/28 - 7/28	4460	1497.34	11440 125	767.59 19.17	159.88	2443.98	170636
		Total	127,490				

W. R GRACE & CO.
CAMBRIDGE MASSACHUSETTS 02140

149955

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
140013	12	26	5155103	3,979 82			3,979 82
15-060				3,979 82			3,979 82

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

149955

149955

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
01	20	81

PAY THIS AMOUNT
$ **3,979 82
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

WRG00370338
ED_005351_00000368-00203

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
11251	1226	14554A	15255E	10		701	GAS 2		
GAS USE		X 1.032	B THERM	FACTOR=		7239.9	THERMS	2663.10	2613.95
11251	1226	03268A	03579E	80	528	24880	ELEC2	1117.84	1088.82
12 1	1230	OUTDOOR LIGHTING SERVICE				206	ELEC9	17.16	16.68
						SALES TAX		260.37	260.37

1/9/81

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 4058.47

IF PAID BY JAN 20,1981 PAY THIS AMOUNT → 3979.82

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED DEC 26 80
AMOUNT OF LAST PAYMENT 3,646.37
NEXT SCHEDULED READ DATE JAN 29 81
NAME SERV. ADDR. ZONOLITE DIV OF DUNN RD
ACCOUNT NUMBER 214400655155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .134080-	$	$ .002059

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 970.73	$	$ 51.65

OFFICE FOR INFORMATION AUBURN NY

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. In Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

154482

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
020007	-01	27	5155103	2,662 16			2,662 16
15-060-7				2,662 16			2,662 16

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED, THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

154482

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

154482

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
03	03	81

PAY THIS AMOUNT	
$ **2,662	16
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3/710

NOT NEGOTIABLE

WRG00370340
ED_005351_00000368-00205

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
1226	127	15255E	15609A	10		3540	GAS 2		
GAS USE		X 1.0370	THERM	FACTOR=		3670.9	THERMS	1354.12	1328.88
1226	127	03579E	03883A	80	600	24320	ELEC2	1171.70	1142.14
1230	129	OUTDOOR LIGHTING SERVICE				293	ELEC9	17.46	16.98
						SALES TAX		174.16	174.16

PLEASE SEE ENCLOSURE RE PSC APPROVED NEW RATES

FEB 27 1981 WORLD-ACCOUNTING W. R. GRACE & CO.

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 2713.44

IF PAID BY MAR 06,1981 PAY THIS AMOUNT → 2662.16

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED JAN 23 81
AMOUNT OF LAST PAYMENT 3,979.82

NEXT SCHEDULED READ DATE MAR 02 81

NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD

ACCOUNT NUMBER 2144u0355155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .132930	$	$ .003550

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 487.97	$	$ 87.06

OFFICE FOR INFORMATION AUBURN NY

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

155652

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
120026	02	27	5155103	2,037 43			2,037 43
15-060-7				2,037 43			2,037 43

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

155652

155652

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
03	13	81

PAY THIS AMOUNT	
$ **2,037	43
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

WRG00370342
ED_005351_00000368-00207

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTAN.	BILLING DEMAND	10" CU. FT KW-HRS	RATE CODE	LATE AMOUNT	AMOUNT
127	227	15609A	15804A	10		1950	GAS 2		
GAS USE X 1.0387 THERM FACTOR=						2025.4	THERMS	770.14	755.92
127	227	03883A	04194A	80	584	24880	ELEC2	1162.15	1131.47
129	3 2	OUTDOOR LIGHTING SERVICE				169	ELEC9	17.24	16.76
							SALES TAX	33.28	133.28
					PREVIOUS BALANCE			2662.16	2662.16

PLEASE SEE ENCLOSURE RE PSC APPROVED NEW RATES

NOTE THE REVISED 'IF PAID BY' DATE RESULTING FROM THE EARLIER MAILING OF YOUR BILL.

RECEIVED MAR 12 1981 R. ACCOUNTING

2037.43

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

IF PAID BY MAR 20, 1981

TOTAL 4744.97
PAY THIS AMOUNT → 4699.59

LAST PAYMENT RECEIVED JAN 23 81
AMOUNT OF LAST PAYMENT 3,979.82

NEXT SCHEDULED READ DATE MAR 31 81

NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD

ACCOUNT NUMBER 214400655155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .140300	$	$ .002675

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 284.16	$	$ 67.00

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

158558

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
090019	03	27	5155103	2,579 10			2,579 10
15-060-7				2,579 10			2,579 10

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

158558

158558

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
04	09	81

PAY THIS AMOUNT	
$ **2,579	10
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
227	327	15804A	16158A	10		3540	GAS 2		
GAS USE X 1.0359 THERM FACTOR=						3667.0	THERMS	1380.69	1355.47
227	327	04194A	04435A	80	552	19280	ELEC2	1063.82	1037.48
3 2	331	OUTDOOR LIGHTING SERVICE				169	ELEC9	17.91	17.43
						SALES TAX		168.72	168.72

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 2631.14

IF PAID BY APR 20, 1981 PAY THIS AMOUNT → 2579.10

LAST PAYMENT RECEIVED MAR 1, 81
AMOUNT OF LAST PAYMENT 2,037.43
NEXT SCHEDULED READ DATE APR 30 81
NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD
ACCOUNT NUMBER 2144006551551 03

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .140160	$	$ .006655

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 513.97	$	$ 129.43

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilo-volt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

162006

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
140029	04	28	5155103	3,381 41			3,381 41
15-060-7				3,381 41			3,381 41

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

162006

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

162006

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
05	15	81

PAY THIS AMOUNT	
$ **3,381	*41
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3/710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
327	428	16158A	16749A	10		5910	GAS 2		
GAS USE		X 1.0305	THERM	FACTOR=		6090.2	THERMS	2144.74	2103.29
327	428	04435A	04704A	80	520	21520	ELEC2	1067.59	1040.03
331	430	OUTDOOR LIGHTING SERVICE				142	ELEC9	17.36	16.88
						SALES TAX		221.21	221.21

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

IF PAID BY MAY 21, 1981

TOTAL 3450.90

PAY THIS AMOUNT → 3381.41

LAST PAYMENT RECEIVED APR 14 81
AMOUNT OF LAST PAYMENT 2,579.10
NEXT SCHEDULED READ DATE JUN 01 81
NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD.
ACCOUNT NUMBER 21440J655155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .117580	$	$ .004019

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 716.09	$	$ 87.06

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

164371

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
090025	05	28	5155103	2,586 59			2,586 59
15-060-7				2,586 59			2,586 59

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

164371

164371

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
06	10	81

PAY THIS AMOUNT	
$ **2,586	*59
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

ZONOLITE DIVISION, W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

033030

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
170352	12	29	5155103	1,749 46	2.0	34 58	1,714 88
15-060-7				1,749 46		34 58	1,714 88

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

GRACE

033030

ZONOLITE DIVISION
W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
01	18	77

PAY THIS AMOUNT
$ **1,714 88
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL BANK AND TRUST COMPANY OF CHICAGO 2-3 710

NOT NEGOTIABLE

WRG003703419

ED_005351_00000368-00214

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
11241227		86722A	87222A	10		5000	GAS 2	981.02	960.96
11241227		05793A	060086	80	392	17200	ELEC2	605.64	591.45
11301229		OUTDOOR LIGHTING SERVICE				206	ELEC9	12.66	12.33
						SALES TAX		111.95	111.95
					PREVIOUS	BALANCE		38.19	38.19

BUDGET AMTS. BILLED

BUDGET USE BILLED

TOTAL 1749.46

IF PAID BY JAN 21,1977 PAY THIS AMOUNT → 1714.88

BALANCE

LAST PAYMENT RECEIVED DEC 27,76

AMOUNT OF LAST PAYMENT 1,741.19

NEXT SCHEDULED READ DATE JAN 28,77

NAME ZONOLITE CIV OF

SERV. ADDR. DUNN RD

ACCOUNT NUMBER 21 40065515510 3

NO. OF APTS.

RATE ADJUSTMENT PER UNIT OF USE		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ .060120	$	$ .006123

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 300.60	$	$ 106.58

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION

A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

GRACE

Construction Products Division

TO: W. R. Straker

DATE: July 21, 1981

FROM: A. E. Wade

CC: G. A. Tierney
Paul Reyer
R. E. Schneider

As we have briefly discussed, New York is another of the states that allows an exemption from payment of sales tax on that portion of utility charges (gas and electricity) that is used directly for manufacturing purposes. Unfortunately, the utility companies in New York state do not widely publish that fact, so our Weedsport plant has been charged a 7% sales tax addition to its gas and electric bills for well over the three year period allowed for refund claims.

Therefore, as we did with a New Castle activity, a study is needed at Weedsport to determine what percentage of the gas and electricity is used strictly for manufacturing. We can then proceed to the utilities and to the state and apply for refunds.

Enclosed is some data on consumption, etc. as gained from the Weedsport utility bills since 1 January 1977. Please keep me posted as to what kind of schedule we can develop, and if there is any more detail this office can supply.

3631

A. E. Wade

AEW:rm

TOTAL HRS 6498 HRS

1979

KNW

25.6	x 6498	166349
5.95	x 975	5801
7.46	x 6498	48475
		220625

240,400 total

91.8%

1980

25.6	x 5950	152320
5.95	892	5307
7.46	x 5950	44387
		~~163377~~
		202014

5950 x 9 ÷ 60 =

~~163377~~ ~~70%~~ 86.4%

233680

1981 thru July

25.6	x 2752	70451
5.95	x 412	2451
7.46	x 2752	20529
		~~20529~~
		93432

73%

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
528	629	17188A	17662A	10		4740	GAS 2		
GAS USE		X.1.0346	THERM	FACTOR=		4904.0	THERMS	1664.86	1631.36
528	629	04875A	05030A	80	360	12400	ELEC2	777.48	757.76
6 1	630	OUTDOOR	LIGHTING	SERVICE		119	ELEC9	19.26	18.73
						SALES TAX		168.55	168.55

PLEASE SEE ENCLOSURE RE PSC APPROVED NEW RATES

JUL 20 1981

BUDGET AMTS. BILLED	25	TOTAL	2630.15
BUDGET USE BILLED	IF PAID BY JUL 21, 1981	PAY THIS AMOUNT →	2576.40
BALANCE			

LAST PAYMENT RECEIVED	JUN 15 81
AMOUNT OF LAST PAYMENT	2,586.59
NEXT SCHEDULED READ DATE	JUL 30 81
NAME SERV. ADDR.	ZONOLITE DIV OF DUNN RD
ACCOUNT NUMBER	2144006551551 03

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .104260	$	$ .007001

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 511.29	$	$ 87.64

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilo-volt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

168563

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
200006	07	25	0722115	2,576 40			2,576 40
15-060-7				2,576 40			2,576 40

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

168563

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

168563

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
07	21	81

PAY THIS AMOUNT
$ **2,576*40
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

7/21 0722115 7/25

PRODUCT CODE OR MISC.	CLS	M. R. S. NO. Z15, Z16, ONLY / OUR INVOICE NO.	QUANTITY LBS. SHIPPED	ACCOUNT NUMBER L	D	DEPT.	P	PR	SUB	DISTRIBUTION AMOUNT
				X	6	153		11	004	2294 16
				N	6	653		94	007	<536 40>
				X	6	153		11	005	818 64
FLAT RATE DISCOUNT										
									INVOICE AMOUNT	2576 40

F. O. B. POINT	MATERIAL RECEIVED	AUDIT STEPS PERFORMED	APPROVED PAYMENT
			7/20

FORM 81-16E

WRG00370354
ED_005351_00000368-00219

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW. HRS.	RATE CODE	LATE AMOUNT	AMOUNT
629	728	17662A	18108A	10		(4460	GAS 2		
GAS USE		X 1.0358	THERM	FACTOR=		4619.6	THERMS	1528.94	1497.34
629	728	05030A	05173A	80	368	11440	ELEC2	786.76	767.59
630	730	OUTDOOR LIGHTING SERVICE				125	ELEC9	19.70	19.17
						SALES TAX		159.88	159.88

NOTE THE REVISED 'IF PAID BY' DATE RESULTING FROM THE EARLIER MAILING OF YOUR BILL.

AUG 10 1981

TOTAL 2495.28

BUDGET AMTS. BILLED

BUDGET USE BILLED

BALANCE

IF PAID BY AUG 19, 1981 PAY THIS AMOUNT → 2443.98

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED JUL 23 81

AMOUNT OF LAST PAYMENT 2,576.40

NEXT SCHEDULED READ DATE AUG 28 81

NAME SERV. ZONOLITE DIV OF

ADDR. DUNN RD

ACCOUNT NUMBER 21440065515510 3

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .095530	$	$ .010191

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 441.31	$	$ 117.86

OFFICE FOR INFORMATION AUBURN NY

CODE EXPLANATION

A—Actual Read

E—Estimated Read

R—Reactive Kilovolt Ampere Hrs.

D—Amt. Due Company

C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

170636

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
120007	07	23	5155103	2,495 28			2,495 28
15-060-7				2,495 28			2,495 28

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

170636

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

170636

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
08	13	81

PAY THIS AMOUNT	
$ **2,495	28
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

TERMS	DIV	DUE DATE	INVOICE NO.	INVOICE DATE	DISC %	P. O. NO.	D. L.
		8/13	5155103	7/23			

PRODUCT CODE OR MISC.	CLS	M. R. S. NO. Z15, Z16, ONLY / OUR INVOICE NO.	QUANTITY LBS. SHIPPED	ACCOUNT NUMBER L	D	DEPT.	P	PR	SUB	DISTRIBUTION AMOUNT
				X	6	153		11	005	886 40
				X	6	153		11	004	2158 64
				N	6	653		94	007	(549 76)
FLAT RATE DISCOUNT										

Y6

INVOICE AMOUNT 2495 28

F. O. B. POINT	MATERIAL RECEIVED	AUDIT STEPS PERFORMED	APPROVED PAYMENT
			8/11

FORM R1-1AF

WRG00370356

ED_005351_00000368-00221

YEAR 1977

NY State Elect & Gas Corp

— UTILITY BILLS —

VN ~~150576~~

VN 150607

PERIOD	GAS-CUFT	GAS-NET $	ELECT-KWH	ELECT-NET $	SALES TAX-7%	TOTAL BILL	CHECK #
11/24/76 - 12/27/76	5000	960.96	17200 206	591.45 12.33	111.95	1714.88	033030
12/27/76 - 1/26/77	5330	1042.49	26960 203	815.37 12.18	133.73	1965.58	034908
1/26/77 - 2/25/77	4460	902.03	19280 169	693.74 12.78	115.02	1723.57	037268
2/25/77 - 3/28/77	4780	987.44	15920 169	644.05 12.78	117.46	1796.19	039103
3/28/77 - 4/27/77	5400	1113.52	16800 142	634.42 12.27	125.75	1922.21	042124
4/27/77 - 5/26/77	4440	940.00	13600 131	502.16 11.91	103.93	1558.00	043122
5/26/77 - 6/27/77	6210	1320.69	17920 119	638.55 11.90	140.77	2111.91	044990
6/27/77 - 7/27/77	5810	1221.44	16080 125	571.94 11.83	128.98	1971.47	047777
7/27/77 - 8/25/77	5860	1213.91	18000 141	653.66 12.14	134.28	2013.99	049332
8/25/77 - 9/26/77	7680	1582.80	24000 156	816.72 12.44	172.16	2622.74	050714
9/26/77 - 10/26/77	9170	2017.78	26080	1044.70	200.35	3062.48	?
10/26/77 - 11/28/77	9750	2165.30	33040 218	1095.42 13.98	234.98	3645.88	056467
					1719.36		

YEAR 1978

NY State Elect & Gas Corp

- UTILITY BILLS -

VN 150516

150607

PERIOD	GAS-CUFT	GAS-NET $	ELECT-KWH	ELECT-NET $	SALES TAX-7%	TOTAL BILL	CHECK #
11/28/77 - 12/27/77	7270	1607.41	29760 206	1138.97 14.62	198.29	2959.29	057531
12/27/77 - 1/26/78	5420	1204.68	31040 203	1070.85 14.10	164.46	2454.09	059718
1/26/78 - 2/27/78	4550	1025.77	25120 169	1001.96 14.63	146.64	2248.91	061725
2/27/78 - 3/29/78	5830	1304.38	18240 169	852.94 14.63	156.00	2379.95	063829
3/29/78 - 4/27/78	5320	1185.07	20160 131	894.85 14.10	150.38	2244.40	065943
4/27/78 - 5/26/78	5750	1331.47	19840 131	839.53 13.89	156.90	2398.22	067897
5/26/78 - 6/27/78	3050	677.81	12960 119	611.03 13.73	91.18	1337.22	069768
6/27/78 - 7/27/78	5800	1256.11	144.00 132	626.80 13.69	132.77	2029.37	071611
						728.18	073913
8/25/78 - 9/26/78	6110	1433.60	17440 156	741.54 14.16	153.25	2400.10	077793
9/26/78 - 10/26/78	6070	1402.29	20080 182	838.69 14.42	157.88	2413.28	078918
10/26/78 - 11/28/78	7160	1644.56	26080 193	1017.40 14.58	187.36	2863.90	081781
					1695.11		

WRG00370358
ED_005351_00000368-00223

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

057531

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
120652	12	29	5155103	3,030 98	2.4	71 69	2,959 29
15-060-7				3,030 98		71 69	2,959 29

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

057531

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
01	13	78

PAY THIS AMOUNT	
$ **2,959	29
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

WRG00370359
ED_005351_00000368-00224

KEEP THIS STATEMENT FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
11281227		94111A	94838A	10		7270	GAS 2	1654.41	1607.41
11281227		08854A	09226A	80	712	29760	ELEC2	1163.28	1138.97
11301229		OUTDOOR LIGHTING SERVICE				208	ELEC9	15.00	14.62
						SALES TAX		198.29	198.29
						PREVIOUS BALANCE		~~3645.88~~	~~3645.88~~

BUDGET AMTS. BILLED

BUDGET USE BILLED

TOTAL 6676.86

IF PAID BY JAN 21, 1978 PAY THIS AMOUNT → ~~6605.17~~

If you have paid previous balance please deduct from total.

BALANCE

LAST PAYMENT RECEIVED NOV. 28, 77

AMOUNT OF LAST PAYMENT 3,008.48

NEXT SCHEDULED READ DATE JAN. 30, 78

NAME ZONOLITE DIV OF

SERV. ADDR. DUNN RD

ACCOUNT NUMBER 2144006551551 03

NO. OF APTS.

RATE ADJUSTMENT PER UNIT OF USE

GAS	POWER AUTHORITY	ELECTRIC FUEL
$ .006030	$	$ .009091

AMOUNT OF ADJUSTMENT INCLUDED IN BILL

GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 43.84	$	$ 272.42

OFFICE FOR INFORMATION AUBURN NY

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

CODE EXPLANATION

A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

059718

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
210514	01	30	5155103	2,514 00	2.4	59 91	2,454 09
15-060-7				2,514 00		59 91	2,454 09

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES.
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

059718

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
02	22	78

PAY THIS AMOUNT
$ **2,454 09
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
1227	126	94838A	95380E	10		5420	GAS 2	1240.02	1204.68
1227	126	09226A	09614A	80	648	31040	ELEC2	1095.04	1070.85
1229	130	OUTDOOR LIGHTING SERVICE				203	ELEC9	14.48	14.10
						SALES TAX		164.46	164.46

BUDGET AMTS. BILLED

BUDGET USE BILLED

BALANCE

LAST PAYMENT RECEIVED JAN 18, 78

AMOUNT OF LAST PAYMENT 2,959.29

NEXT SCHEDULED READ DATE MAR 01, 78

NAME ZONOLITE DIV OF

SERV. ADDR. DUNN RD

ACCOUNT NUMBER 2144006551551 03

TOTAL 2514.00

IF PAID BY FEB 21, 1978 PAY THIS AMOUNT → 2454.09

NO. OF APTS.

RATE ADJUSTMENT PER UNIT OF USE		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ .005530	$	$ .006670

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 29.97	$	$ 208.39

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION

A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

061725

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
170637	02	27	5155103	2,301 45	2.3	52 54	2,248 91
15-060-7				2,301 45		52 54	2,248 91

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

061725

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
03	20	78

PAY THIS AMOUNT
$ **2,248 91
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3/710

NOT NEGOTIABLE

WRG00370363
ED_005351_00000368-00228

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
1 26	2 27	95380 E	95835 E	10		4550	GAS 2	1055.63	1025.77
1 26	2 27	09614 A	09928 A	80	696	25120	ELEC2	1024.26	1001.96
1 30	3 1	OUTDOOR LIGHTING SERVICE				169	ELEC9	15.01	14.63
						SALES TAX		146.64	146.64
				PREVIOUS BALANCE				OK 59.91	59.91

BUDGET AMTS. BILLED

BUDGET USE BILLED

TOTAL 2301.45

IF PAID BY MAR 22,1978 PAY THIS AMOUNT → 2248.91

If you have paid previous balance please deduct from total.

BALANCE	
LAST PAYMENT RECEIVED	FEB 27 78
AMOUNT OF LAST PAYMENT	2,454.09
NEXT SCHEDULED READ DATE	MAR 31 78
NAME / SERV. ADDR.	ZONOLITE DIV OF / DUNN RD
ACCOUNT NUMBER	2144006515510 3

NO. OF APTS.

RATE ADJUSTMENT PER UNIT OF USE	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .007460	$	$ .011145

AMOUNT OF ADJUSTMENT INCLUDED IN BILL	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ 33.94	$	$ 207.99

OFFICE FOR INFORMATION AUBURN NY

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

063829

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
140011	03	29	5155103	2,436 58	2.3	56 63	2,379 95
15-060-7				2,436 58		56 63	2,379 95

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES.
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GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

063829

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
04	18	78

PAY THIS AMOUNT	
$ **2,379	95
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

WRG00370365

ED_005351_00000368-00230

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
2 27	3 29	95835E	96418A	10		5830	GAS, 2	1342.30	1304.38
2 27	3 29	09928A	10156A	80	592	18240	ELEC2	871.27	852.94
3 1	3 31	OUTDOOR LIGHTING SERVICE				169	ELEC9	15.01	14.63
						SALES TAX		156.00	156.00
				PREVIOUS		BALANCE		52.00	52.00

BUDGET AMTS. BILLED

BUDGET USE BILLED

TOTAL 2436.58

IF PAID BY APR 24,1978 PAY THIS AMOUNT → 2379.95

If you have paid previous balance please deduct from total.

BALANCE	
LAST PAYMENT RECEIVED	MAR,27,78
AMOUNT OF LAST PAYMENT	2,248.91
NEXT SCHEDULED READ DATE	MAY,01,78
NAME SERV. ADDR.	ZONOLITE DIV OF DUNN RD
ACCOUNT NUMBER	2,14400655155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .007460	$	$ .011145

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 43.49	$	$ 205.16

OFFICE FOR INFORMATION AUBURN NY

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

CODE EXPLANATION

A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs
D—Amt. Due Company
C—Amt. in Customer Favor

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

065943

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
150008	05	01	5155103	2,298 76	2.4	54 36	2,244 40
15-060-7				2,298 76		54 36	2,244 40

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

065943

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
05	16	78

PAY THIS AMOUNT	
$ **2,244	40
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
329	427	96418A	96950A	10		5320	GAS 2	1219.78	1185.07
329	427	10156A	10408A	80	592	20160	ELEC2	914.12	894.85
331	5 1	OUTDOOR LIGHTING SERVICE				131	ELEC9	14.48	14.10
						SALES TAX		150.38	150.38

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 2298.76

IF PAID BY MAY 21, 1978 PAY THIS AMOUNT → 2244.40

		NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
			GAS	POWER AUTHORITY	ELECTRIC FUEL
LAST PAYMENT RECEIVED	APR 21 78				
AMOUNT OF LAST PAYMENT	2,379.95		$ .005900	$	$ .010311
NEXT SCHEDULED READ DATE	MAY 31 78		AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
NAME SERV. ADDR.	ZONOLITE DIV OF DUNN RD		GAS	POWER AUTHORITY	ELECTRIC FUEL
			$ 31.39	$	$ 209.22
ACCOUNT NUMBER	214400655155103		OFFICE FOR INFORMATION	AUBURN NY	

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

RECEIVED MAY 1 1978 CPD-ACCOUNTS

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

067897

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
130008	09	11	5155103	2,398 32			2,398 32
15-060-7				2,398 32			2,398 32

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

067897

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
06	14	78

PAY THIS AMOUNT	
$ **2,398	32
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT, NEGOTIABLE

WRG00370369
ED_005351_00000368-00234

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
4 27	5 26	96950 A	97525 A	10		5750	GAS 2	1368.89	1331.47
4 27	5 26	10408 A	10656 A	80	552	19840	ELEC2	858.26	839.53
5 1	5 31	OUTDOOR LIGHTING SERVICE				131	ELEC9	14.27	13.89
						SALES TAX		156.90	156.90

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 2398.32

IF PAID BY JUN 21, 1978 PAY THIS AMOUNT → 2341.79

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED MAY 19 78
AMOUNT OF LAST PAYMENT 2,244.40
NEXT SCHEDULED READ DATE JUN 29 78

NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD

ACCOUNT NUMBER 21440065515 5103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .015200	$	$ .008691

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 87.40	$	$ 173.57

OFFICE FOR INFORMATION AUBURN NY

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

CODE EXPLANATION

A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

069768

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
130006	06	29	5155103	1,372 58	2.6	35 36	1,337 22
15-060-7				1,372 58		35 36	1,337 22

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES.
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

GRACE
INDUSTRIAL CHEMICALS GROUP,
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

069768

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
07	17	78

PAY THIS AMOUNT
$ **1,337 22
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

WRG00370371
ED_005351_00000368-00236

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
5 26	6 27	97525 A	97830 A	10		3050	GAS 2	698.22	677.8
5 26	6 27	10656 A	10818 A	80	480	12960	ELEC2	625.60	611.0
5 31	6 29	OUTDOOR LIGHTING SERVICE				119	ELEC9	14.11	13.7
						SALES TAX		91.18	91.1
				PREVIOUS BALANCE CREDIT				56.53	56.5

THE NET AMOUNT IS YOUR ACTUAL BILL; THE GROSS AMOUNT IS THE LATE PAYMENT AMOUNT.

7/10/78

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 1372.58

IF PAID BY JUL 21 1978 PAY THIS AMOUNT → 1337.22

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED JUN 19 78
AMOUNT OF LAST PAYMENT 1,328.32

NO. OF APTS.

RATE ADJUSTMENT PER UNIT OF USE		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ .000420	$	$ .008238

NEXT SCHEDULED READ DATE JUL 31 78

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 1.28	$	$ 107.74

NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD

ACCOUNT NUMBER 214400/55155103

OFFICE FOR INFORMATION AUBURN NY

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

071611

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
110011	07	21	5155103	2,029 37			2,029 37
15-060-7				2,029 37			2,029 37

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES.
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

071611

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
08	14	78

PAY THIS AMOUNT	
$ **2,029	37
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 710 — 2-3

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
627	727	97830A	98410E	10		5800	GAS 2	1293.85	1256.11
627	727	10818A	10998A	80	456	14400	ELEC2	642.14	626.80
629	731	OUTDOOR LIGHTING SERVICE				132	ELEC9	14.07	13.69
						SALES TAX		132.77	132.77

PLEASE SEE ENCLOSURE RE PSC APPROVED NEW RATES

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL. 2082.83

IF PAID BY AUG 21, 1978 PAY THIS AMOUNT → 2029.37

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED JUL 20 78
AMOUNT OF LAST PAYMENT 1,337.22
NEXT SCHEDULED READ DATE AUG 29 78

NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD

ACCOUNT NUMBER 2140JC55155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .000520-	$	$ .006921

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 3.02-	$	$ 100.58

OFFICE FOR INFORMATION AUBURN NY

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

077793

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
310005	09	28	5155103	2,400 10			2,400 10
15-051-6				2,400 10			2,400 10

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

077793

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

077793

TO THE ORDER OF

NEW YORK STATE ELEC AND GAS CORP
P O BOX 50
ITHACA N Y 14850

MO.	DAY	YR.
11	03	78

PAY THIS AMOUNT
$ **2,400 10
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

WRG00370375
ED_005351_00000368-00240

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
8 25	9 26	98332 A	98943 A	10		6110	GAS 2	1473.29	1433.60
8 25	9 26	11222 A	11440 A	80	472	17440	ELEC2	759.02	741.54
8 29	9 28	OUTDOOR LIGHTING SERVICE				156	ELEC9	14.54	14.16
						SALES TAX		153.25	153.25

Ok to pay
Gas X6-153-11-004 $1573.78
Electric X6-153-11-005 $826.32
Douglas Bowling

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

IF PAID BY OCT 21, 1978

TOTAL 2400.10
PAY THIS AMOUNT → 2342.55

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED SEP 21 78
AMOUNT OF LAST PAYMENT 728.18
NEXT SCHEDULED READ DATE OCT 28 78

NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD

ACCOUNT NUMBER 21440065155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .017400	$	$ .008378

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 106.31	$	$ 147.42

OFFICE FOR INFORMATION AUBURN NY

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

07891

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUN
140020	10	28	5155103	2,413 28			2,413 2
15-051-6				2,413 28			2,413 2

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

078918

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

07891

TO THE ORDER OF

NEW YORK STATE ELEC AND GAS CORP
P O BOX 50
ITHACA N Y 14850

MO.	DAY	YR.
11	15	78

PAY THIS AMOUNT
$ **2,413 2
DOLLARS CEN

CONTINENTAL ILLINOIS NATIONAL BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
926	1026	98943A	99550A	10		6070	GAS 2	1441.73	1402.29
926	1026	11440A	11691A	80	520	20080	ELEC2	858.22	838.69
928	1028	OUTDOOR LIGHTING SERVICE				182	ELEC9	14.80	14.42
						SALES TAX		157.88	157.88
						PREVIOUS BALANCE	pd	~~2400.10~~	~~2400.10~~
		OK to pay charge X6-153-11-004				$1487.51			
		X6-153-11-005				$3385.22	X		
		Douglas Powling							2413.28

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

IF PAID BY NOV 21,1978

TOTAL 4872.73
PAY THIS AMOUNT → ~~4813.38~~

LAST PAYMENT RECEIVED	SEP 21 78
AMOUNT OF LAST PAYMENT	728.18
NEXT SCHEDULED READ DATE	NOV 30 78
NAME SERV. ADDR.	ZONOLITE DIV OF DUNN RD
ACCOUNT NUMBER	214400655155103

NO. OF APTS.

RATE ADJUSTMENT PER UNIT OF USE

GAS	POWER AUTHORITY	ELECTRIC FUEL
$ .013750	$	$ .008635

AMOUNT OF ADJUSTMENT INCLUDED IN BILL

GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 83.46	$	$ 174.96

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

081781

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
180021	11	30	5155103	2,863 90			2,863 90
15-051-6				2,863 90			2,863 90

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

081781

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

081781

TO THE ORDER OF

NEW YORK STATE ELEC AND GAS CORP
P O BOX 50
ITHACA N Y 14850

MO.	DAY	YR.
12	19	78

PAY THIS AMOUNT	
$ **2,863	90
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
10261128		99550A	00266A	10		7160	GAS 2	1690.87	1644.56
10261128		11697A	12017A	80	608	26080	ELEC2	1040.21	1017.40
10281130		OUTDOOR LIGHTING SERVICE				193	ELEC9	14.96	14.58
						SALES TAX		187.36	187.36

RECEIVED DEC 15 1978 CPU-ACCOUNTING W. R.

RECEIVED DEC 8 1978 WEDSPORT, N.Y.

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 2933.40

IF PAID BY DEC 21, 1978 PAY THIS AMOUNT → 2863.90

LAST PAYMENT RECEIVED NOV 21 78
AMOUNT OF LAST PAYMENT 2,413.28
NEXT SCHEDULED READ DATE DEC 29 78
NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD
ACCOUNT NUMBER 2144906551551 03

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .013310	$	$ .008956

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 95.30	$	$ 235.30

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

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NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

Year 1980

NY State Dept of Corr Cap

VN ~~150376~~ 150607

- UTILITY BILLS -

Period	Gas - Cu Ft	Gas - Net $	Elect - KWH	Elect - Net $	Sales Tax - 7%	Total Bill	Check #
12/20/79 - 12/27/79	x10² 17360	2630.03	25280 206	1007.79 15.68	255.75	$3,990.88	116582
12/27/79 - 1/28/80	18950	3238.76	30880 203	1187.72 15.72	310.95	4753.09	119542
1/28/80 - 2/27/80	1940	700.31	23360 175	1017.80 15.55	121.36	1855.02	122132 (VN 150576)
2/27/80 - 3/27/80	3230	1226.20	18800 169	878.88 15.59	148.44	2245.39	124691
3/27/80 - 4/28/80	5410	2010.79	18080 142	883.25 15.50	203.68	3,113.22	126968
4/28/80 - 5/28/80	5500	2018.09	14000 131	713.08 15.43	192.27	2,939.87	130137
5/28/80 - 6/27/80	4890	1712.39	11600 119	567.56 14.77	160.63	2554.48	133082 (VN 150375)
6/27/80 - 7/28/80	4640	1628.94	10720 125	548.62 14.94	153.48	2299.44	135183
7/28/80 - 8/28/80	6850	2379.56	16720 150	793.45 16.53	223.27	3412.81	137760
8/28/80 - 9/25/80	7230	2504.87	17120 156	813.38 16.67	233.45	3568.37	141227
9/25/80 - 10/28/80	9320	3408.13	23840 182	1064.55 16.82	314.27	4803.77	143385
10/28/80 - 11/25/80	6330	2331.25	23680 206	1059.86 16.71	238.55	3646.37	146933
	56,188 29110		24880 233680		2556.10		

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

116592

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
110004	12	31	5155103	3,990 88			3,990 88
15-060-7				3,990 88			3,990 88

envelope, please correct vendor

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
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116592

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

116592

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y 14850

MO.	DAY	YR.
01	14	80

PAY THIS AMOUNT	
$**3,990	88
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
1128	1227	07389A	08125A	10		7360	GAS 2		
GAS USE		X 1.0392	THERM	FACTOR=		7648.5	THERMS	2680.38	2630.03
1128	1227	00342A	00658A	80	528	25280	ELEC2	1029.00	1007.79
1130	1231	OUTDOOR LIGHTING SERVICE				206	ELEC9	16.08	15.68
						SALES TAX		255.75	255.75
				PREVIOUS		BALANCE		81.63	81.63

TOTAL: 4062.84

BUDGET AMTS. BILLED

BUDGET USE BILLED

BALANCE

IF PAID BY JAN 22,1980 PAY THIS AMOUNT → 3990.88

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED DEC 24 79

AMOUNT OF LAST PAYMENT 4,481.13

NEXT SCHEDULED READ DATE JAN 30 80

NAME ZONOLITE DIV OF

SERV. ADDR. DUNN RD

ACCOUNT NUMBER 2144006551551 03

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .124520	$	$ .009623

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 952.39	$	$ 245.25

OFFICE FOR INFORMATION AUBURN NY

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

CODE EXPLANATION

A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

119542

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
140040	01	30	5155103	4,753 09			4,753 09
15-060-7				4,753 09			4,753 09

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
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119542

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

119542

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
02	15	80

PAY THIS AMOUNT	
$ **4,753	09
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
12 27	1 28	08125A	09020E	10		8950	GAS 2		
GAS USE		X 1.0458 THERM		FACTOR=		9359.9	THERMS	3300.18	3238.70
12 27	1 28	00658A	01044A	80	608	30880	ELEC2	1212.13	1187.72
12 31	1 30	OUTDOOR LIGHTING SERVICE				203	ELEC9	16.12	15.72
						SALES TAX		310.95	310.95

2/13/80

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

IF PAID BY FEB 21,1980

TOTAL 4839.38

PAY THIS AMOUNT → 4753.09

LAST PAYMENT RECEIVED JAN 17 80
AMOUNT OF LAST PAYMENT 3,990.88
NEXT SCHEDULED READ DATE FEB 29 80

NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD

ACCOUNT NUMBER 2144006551551 03

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .127050	$	$ .009938

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 1189.18	$	$ 308.91

OFFICE FOR INFORMATION AUBURN NY

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D—Amt. Due Company
C—Amt. In Customer Favor

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NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

122132

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
140027	02	27	5155103	1,855 02			1,855 02
15-051-6				1,855 02			1,855 02

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
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122132

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

122132

TO THE ORDER OF

NEW YORK STATE ELEC AND GAS CORP
PO BOX 370
AUBURN NY 13021

MO.	DAY	YR.
03	17	80

PAY THIS AMOUNT	
$ **1,855	02
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
128	227	09020E	09214A	10		1940	GAS 2		
GAS USE X 1.0518 THERM FACTOR=						2040.4	THERMS	714.21	700.31
128	227	01044A	01336A	80	608	23360	ELEC2	1039.20	1017.80
130	229	OUTDOOR LIGHTING SERVICE				175	ELEC9	15.95	15.55
						SALES TAX		121.36	121.36
PLEASE SEE ENCLOSURE RE PSC APPROVED NEW RATES									

RECEIVED MAR 13 P.M.

TOTAL 1890.72

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

IF PAID BY MAR 21,1980 PAY THIS AMOUNT → 1855.02

LAST PAYMENT RECEIVED FEB 15 80
AMOUNT OF LAST PAYMENT 4,753.09
NEXT SCHEDULED READ DATE MAR 31 80
NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD
ACCOUNT NUMBER 21440065515510 3

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .118150	$	$ .010635

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 241.07	$	$ 250.30

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilo-volt Ampere Hrs.
D—Amt. Due Company
C—Amt. In Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

124691

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
150024	03	31	5155103	2,245 39			2,245 39
15-060-				2,245 39			2,245 39

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES.
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124691

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

124691

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
04	16	80

PAY THIS AMOUNT
$ **2,245 39
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

126969

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
120013	04	28	5155103	3,113 22			3,113 22
15-060-7				3,113 22			3,113 22

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES

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126969

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

126969

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
05	14	80

PAY THIS AMOUNT	
$ **3,113	22
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
327	428	09537A	10078A	10		5410	GAS 2		
GAS USE		X 1.0340	THERM	FACTOR=		5593.9	THERMS	2047.79	2010.79
327	428	01571A	01797A	80	512	18080	ELEC2	901.19	883.25
331	430	OUTDOOR LIGHTING SERVICE				142	ELEC9	15.90	15.50
						SALES TAX		203.68	203.68

5/8/80

TOTAL 3168.56

BUDGET AMTS. BILLED

BUDGET USE BILLED

BALANCE

IF PAID BY MAY 21,1980 PAY THIS AMOUNT → 3113.22

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED APR 18 80

AMOUNT OF LAST PAYMENT 2,245.39

NEXT SCHEDULED READ DATE MAY 30 80

NAME ZONOLITE DIV OF

SERV. ADDR. DUNN RD

ACCOUNT NUMBER 214400655155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .138770	$	$ .013403

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 776.27	$	$ 244.23

OFFICE FOR INFORMATION AUBURN NY

CODE EXPLANATION

A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

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NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

130137

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
170032	05	28	5155103	2,938 87			2,938 87
15-037-5				2,938 87			2,938 87

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
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130137

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

130137

TO THE ORDER OF

N Y STATE ELECTRIC & GAS CORP
AUBURN NY

MO	DAY	YR
06	18	80

PAY THIS AMOUNT	
$ **2,938	87
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HPS.	RATE CODE	LATE AMOUNT	AMOUNT
428	528	10078A	10628A	10		5500	GAS 2		
GAS USE X 1.0347 THERM FACTOR=						5690.8	THERMS	2055.72	2018.09
428	528	01797A	01972A	80	400	14000	ELEC2	727.64	713.08
430	530	OUTDOOR LIGHTING SERVICE				131	ELEC9	15.83	15.43
						SALES TAX		192.27	192.27

ok Buyer
x6153

TOTAL 2991.46

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

IF PAID BY JUN 21,1980 PAY THIS AMOUNT → 2938.87

LAST PAYMENT RECEIVED MAY 16 80
AMOUNT OF LAST PAYMENT 3,113.22
NEXT SCHEDULED READ DATE JUN 30 80
NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD
ACCOUNT NUMBER 214400655155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .133980	$	$ .013934

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 762.45	$	$ 196.91

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

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NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
528	627	10628A	11117A	10		4890	GAS 2		
GAS USE		X 1.0295	THERM	FACTOR=		5034.2	THERMS	1745.75	1712.
528	627	01972A	02117A	80	352	11600	ELEC2	580.34	567.
530	630	OUTLOOR LIGHTING SERVICE				119	ELEC9	15.17	14.
						SALES TAX		160.63	160.
						PREVIOUS BALANCE		52.59	52.

RECEIVED
JUL 21 A.M.
ACCOUNTS PAYABLE

TOTAL 2554.48

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

IF PAID BY JUL 22,1980 PAY THIS AMOUNT → 2507.

LAST PAYMENT RECEIVED JUN 25 80
AMOUNT OF LAST PAYMENT 2,938.87
NEXT SCHEDULED READ DATE JUL 30 80
NAME SERV. ADDR. ZONDLITE DIV OF DUNN RD
ACCOUNT NUMBER 214400655155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .119150	$	$ .009859

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 599.82	$	$ 115.53

OFFICE FOR INFORMATION AUBURN NY

If you have paid vious balance pl deduct from tota

CODE EXPLANATI
A—Actual Read
E—Estimated Rea
R—Reactive Kilo-volt Ampere H
D—Amt. Due Com
C—Amt. in Custom Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

135183

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
140001	07	30	5155103	2,299 44			2,299 44
15-060-7				2,299 44			2,299 44

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

135183

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

135183

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
08	15	80

PAY THIS AMOUNT	
$ **2,299	44
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

133082

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
220033	06	30	5155103	2,554 48			2,554 48
15-037-5				2,554 48			2,554 48

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

133082

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

133082

TO THE ORDER OF

N Y STATE ELECTRIC & GAS CORP
~~AUBURN NY~~
Ithaca, NY 14850

MO.	DAY	YR.
07	23	80

PAY THIS AMOUNT	
$**2,554	48
DOLLARS	CENTS

CONTINENTAL ~~ILLINOIS NATIONAL~~ 2-3
BANK AND TRUST COMPANY OF CHICAGO 710

NOT NEGOTIABLE

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

137760

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
120016	08	28	5155103	3,412 81			3,412 81
15-060-7				3,412 81			3,412 81

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

137760

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

137760

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
09	15	80

PAY THIS AMOUNT	
$ **3,412	81
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO

2-3
710

NOT NEGOTIABLE

WRG00370396
ED_005351_00000368-00261

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	10 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
728	828	11581A	12266A	10		6850	GAS 2		
GAS USF		X 1.0266	THERM	FACTOR=		7032.2	THERMS	2427.14	2379.56
728	828	02251A	02460A	80	384	16720	ELEC2	813.86	793.45
730	828	OUTDOOR	LIGHTING	SERVICE		150	ELEC9	17.01	16.53
						SALES TAX		223.27	223.27
PLEASE		SEE ENCLOSURE		RE PSC		APPROVED NEW	RATES		

TOTAL 3481.28

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

IF PAID BY SEP 21,1980 PAY THIS AMOUNT → 3412.81

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED AUG 19 80
AMOUNT OF LAST PAYMENT 2,299.44
NEXT SCHEDULED READ DATE SEP 29 80
NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD
ACCOUNT NUMBER 21440065515 5103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .112240	$	$ .002576

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 789.29	$	$ 61.91

OFFICE FOR INFORMATION AUBURN NY

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

141227

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
160020	09	25	5155103	3,568 37			3,568 37
15-060-7				3,568 37			3,568 37

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

141227

141227

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
10	20	80

PAY THIS AMOUNT	
$ **3,568	37
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 23/710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
8 28	9 25	12266A	12989A	10		7230	GAS 2		
GAS USE		X 1.0215 THERM		FACTOR=		7385.4	THERMS	2555.00	2504.87
8 28	9 25	02460A	02674A	80	384	17120	ELEC2	834.81	813.38
8 28	9 29	OUTDOOR LIGHTING SERVICE				156	ELEC9	17.15	16.67
						SALES TAX		233.45	233.45
							TOTAL	3640.41	

RECEIVED OCT 14 1980 CP-Accounting

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

IF PAID BY OCT 21, 1980 PAY THIS AMOUNT → 3568.37

LAST PAYMENT RECEIVED SEP 18 80
AMOUNT OF LAST PAYMENT 3,412.81
NEXT SCHEDULED READ DATE OCT 29 80
NAME SERV. ADDR. ZONOLITE DIV OF DUNN RD
ACCOUNT NUMBER 21440065155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .112240	$	$ .002599

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 828.94	$	$ 44.90

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. In Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

143385

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
120025	10	28	5155103	4,803 77			4,803 77
15-060-7				4,803 77			4,803 77

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

143385

143385

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
11	13	80

PAY THIS AMOUNT	
$ **4,803	77
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS BILL FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
925	1028	12989A	13921A	10		9320	GAS 2		
GAS USE		X 1.0241	THERM	FACTOR=		9544.6	THERMS	3472.73	3408.13
925	1028	02674A	02972A	80	480	23840	ELEC2	1092.22	1064.55
929	1029	OUTDOOR	LIGHTING	SERVICE		182	ELEC9	17.30	16.82
						SALES TAX		314.27	314.27
					CV FT	932000			

$ = Cost/cv FT 1/5/80

TOTAL 4896.52

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

IF PAID BY NOV 21,1980 PAY THIS AMOUNT → 4803.77

LAST PAYMENT RECEIVED OCT 23 80
AMOUNT OF LAST PAYMENT 3,569.37
NEXT SCHEDULED READ DATE DEC 01 80
NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD
ACCOUNT NUMBER 21440C655155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .130630	$	$ .003104
	AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ 1246.81	$	$ 74.56
	OFFICE FOR INFORMATION	AUBURN NY	

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

146933

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
160011	12	01	5155103	3,646 37			3,646 37
15-060-7				3,646 37			3,646 37

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

146933

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
ITHACA NEW YORK 14850

MO.	DAY	YR.
12	17	80

PAY THIS AMOUNT	
$ **3,646	37
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3/710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
10281125		13921A	14554A	10		6330	GAS 2		
GAS USE		X 1.0292	THERM	FACTOR=		6514.8	THERMS	2375.55	2331.25
10281125		C2972A	03268A	80	528	23680	ELEC2	1088.04	1059.86
10291211		OUTDOOR LIGHTING SERVICE				206	ELEC9	17.19	16.71
						SALES TAX		238.55	238.55

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 3719.35

IF PAID BY DEC 21 1980 PAY THIS AMOUNT → 3646.37

LAST PAYMENT RECEIVED NOV 19 80
AMOUNT OF LAST PAYMENT 4,803.77
NEXT SCHEDULED READ DATE DEC 30 80

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .130630	$	$ .002192

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 851.03	$	$ 52.36

If you have paid previous balance please deduct from total.

NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD
ACCOUNT NUMBER 21440C655155103
OFFICE FOR INFORMATION AUBURN NY

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

Year 1979

NY State Elect & Gas Corp

— UTILITY BILLS —

VN 150516

+ 150607

Period	Gas - Cu Ft (100)	Gas - Net $	Elect - KWH	Elect - Net $	Sales Tax - 7%	Total Bill	Check #
11/28/78 - 12/27/78	6100	1485.42	26000 206	1013.93 14.64	175.98	$ 2689.97	084199
2/27/78 - 1/26/79	5160	1259.33	25840 203	1037.50 14.76	161.81	2473.40	086731
/26/79 - 2/27/79	3110	766.39	20640 169	891.28 14.35	117.04	1789.06	089364
/27/79 - 3/28/79	3250	881.90	15760 169	781.04 14.54	117.42	1794.90	092898
/28/79 - 4/27/79	6360	1691.71	22480 131	957.03 14.31	186.41	2889.67	094446
/27/79 - 5/29/79	6020	1649.00	18240 131	808.59 14.90	173.07	2645.56	097544
5/29/79 - 6/27/79	6240	1713.58	16560 119	740.48 14.86	172.82	2704.04	099979
/27/79 - 7/27/79	5220	1436.56	13920 125	649.46 14.87	147.06	2185.65	102370 (VN, 150607)
/27/79 - 8/29/79	6910	1964.68	17120 141	746.26 15.19	190.83	2916.96	105139
/29/79 - 9/26/79	6230	1758.65	16800 156	749.37 15.21	176.63	2699.86	108246
/26/79 - 10/26/79	7730	2720.19	21680 182	924.23 15.66	256.21	3916.29	113079
0/26/79 - 11/28/79	8900	3141.63	26080 193	1030.59 15.76	293.15	4481.13	114200
					2168.43		
			25280				
			240,400				

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

084199

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
160001	12	29	5155103	2,689 97			2,689 97
15-051-6				2,689 97			2,639 97

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

084199

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

084199

TO THE ORDER OF

NEW YORK STATE ELEC AND GAS CORP
P O BOX 50
ITHACA N Y 14850

MO.	DAY	YR.
01	17	79

PAY THIS AMOUNT
$ **2,689 97
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

086731

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
150012	01	30	5155103	2,473 40			2,473 40
15-051-6				2,473 40			2,473 40

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
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086731

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

086731

TO THE ORDER OF

NEW YORK STATE ELEC AND GAS CORP
P O BOX 50
ITHACA N Y 14850

MO.	DAY	YR.
02	16	79

PAY THIS AMOUNT
$ *2,473 40
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

WRG00370406
ED_005351_00000368-00271

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
12 27	1 26	00876 A	01392 A	10		5160	GAS 2	1293.04	1259.3
12 27	1 26	12342 A	12665 A	80	648	25840	ELEC2	1060.62	1037.5
12 29	1 30	OUTDOOR LIGHTING SERVICE				203	ELEC9	15.14	14.7
						SALES TAX		161.81	161.8

TOTAL 2530.61

BUDGET AMTS. BILLED

BUDGET USE BILLED

BALANCE

IF PAID BY FEB 21,1979 PAY THIS AMOUNT → 2473.4

LAST PAYMENT RECEIVED JAN 22 79

AMOUNT OF LAST PAYMENT 2,689.97

NEXT SCHEDULED READ DATE MAR 01 79

NAME ZONOLITE DIV OF

SERV. ADDR. DUNN RD

ACCOUNT NUMBER 2 1440 0655155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .025750	$	$ .009386

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 132.87	$	$ 244.44

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION

A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

089364

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
200031	03	01	5155103	1,789 06			1,789 06
15-051-6				1,789 06			1,789 06

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES.
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

089364

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

089364

TO THE ORDER OF

NEW YORK STATE ELEC AND GAS CORP
P O BOX 50
ITHACA N Y 14850

MO.	DAY	YR.
03	21	79

PAY THIS AMOUNT
$ **1,789 06
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

092898

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
200019	03	30	5155103	1,794 90			1,794 90
15-051-6				1,794 90			1,794 90

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

092898

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

092898

TO THE ORDER OF

NEW YORK STATE ELEC AND GAS CORP
P O BOX 50
ITHACA N Y 14850

MO.	DAY	YR.
04	26	79

PAY THIS AMOUNT
$ **1,794 90
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

WRG00370409
ED_005351_00000368-00274

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
227	328	01703A	02028A	10		3250	GAS 2	903.57	8[illegible]
227	328	12923A	13120A	80	640	15760	ELEC2	799.20	78[illegible]
3 1	330	OUTDOOR LIGHTING SERVICE				169	ELEC9	14.92	14.[illegible]
						SALES TAX		117.42	117.42

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 1835.11

IF PAID BY APR 21,1979 PAY THIS AMOUNT → 1794.90

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED MAR 22 79
AMOUNT OF LAST PAYMENT [illegible],789.06
NEXT SCHEDULED READ DATE MAY 01 79
NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD
ACCOUNT NUMBER 2 2 4400655155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .048990	$	$ .010018

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 159.22	$	$ 159.57

OFFICE FOR INFORMATION AUBURN NY

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs
D—Amt. Due Company
C—Amt. In Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

094446

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
140010	04	27	5155103	2,889 67			2,889 67
15-051-6				2,889 67			2,889 67

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED, THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

094446

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

094446

TO THE ORDER OF

NEW YORK STATE ELEC AND GAS CORP
P O BOX 50
ITHACA N Y 14850

MO.	DAY	YR.
05	15	79

PAY THIS AMOUNT
$ **2,889 67
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

WRG00370411
ED_005351_00000368-00276

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
328	427	02028A	02664A	10		6360	GAS 2	1732.98	1691.71
328	427	13120A	13401A	80	536	22480	ELEC2	977.68	957.03
330	5 1	OUTDOOR LIGHTING SERVICE				131	ELEC9	14.69	14.31
						SALES TAX		186.41	186.41
					PREVIOUS	BALANCE		40.21	40.21

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 2951.97

IF PAID BY MAY 22,1979 PAY THIS AMOUNT → 2889.67

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED APR 30 79
AMOUNT OF LAST PAYMENT 1,794.90

NEXT SCHEDULED READ DATE MAY 31 79

NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD

ACCOUNT NUMBER 214400655155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .048990	$	$ .011180

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 311.58	$	$ 252.79

OFFICE FOR INFORMATION AUBURN NY

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-76

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

097544

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
180019	05	29	5155103	2,645 56			2,645 56
15-051-6				2,645 56			2,645 56

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

⑆097544⑆

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

097544

TO THE ORDER OF

NEW YORK STATE ELEC AND GAS CORP
PO BOX 370
AUBURN NY 13021

MO.	DAY	YR.
06	19	79

PAY THIS AMOUNT	
$ **2,645	56
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
427	529	02664A	03266A	10		6020	GAS 2		
GAS USE		X 1.0267	THERM	FACTOR=		6180.7	THERMS	1689.60	1649.00
427	529	13401A	13629A	80	504	18240	ELEC2	826.57	808.59
5 1	531	OUTDOOR	LIGHTING	SERVICE		131	ELEC9	15.30	14.90
						SALES TAX		173.07	173.07
				PREVIOUS		BALANCE		~~2951.97~~	~~2951.97~~
PLEASE SEE ENCLOSURE RE PSC APPROVED NEW RATES									2645.56

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

LAST PAYMENT RECEIVED APR 30 79
AMOUNT OF LAST PAYMENT 1,794.90
NEXT SCHEDULED READ DATE JUN 29 79
NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD.
ACCOUNT NUMBER 2144006551551 03

IF PAID BY JUN 21, 1979

TOTAL 5656.51
PAY THIS AMOUNT → ~~5597.53~~

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .047940	$	$ .009187

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 296.61	$	$ 168.58

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

102370

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
100023	07	31	5155103	2,185 65			2,185 65
15-060-7				2,185 65			2,185 65

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

102370

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

102370

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
08	13	79

PAY THIS AMOUNT
$ **2,185 65
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
AND TRUST COMPANY OF CHICAGO
2-3
710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
627	728	11117A	11581A	10		4640	GAS 2		
GAS USE X 1.0316 THERM FACTOR=						4786.6	THERMS	1660.69	1628.94
627	728	02117A	02251A	80	344	10720	ELEC2	560.87	548.62
630	730	OUTDOOR LIGHTING SERVICE				125	ELEC9	15.34	14.94
						SALES TAX		153.48	153.48
				PREVIOUS BALANCE CREDIT				46.54	46.54

ok [signature] 8/8/80

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 2343.84

IF PAID BY AUG 21,1980 PAY THIS AMOUNT → 2299.44

LAST PAYMENT RECEIVED JUL 24 80
AMOUNT OF LAST PAYMENT 2,554.48

NO. OF APTS.

RATE ADJUSTMENT PER UNIT OF USE

GAS	POWER AUTHORITY	ELECTRIC FUEL
$ .119150	$	$ .010741

If you have paid previous balance please deduct from total.

NEXT SCHEDULED READ DATE AUG 28 80

NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD

AMOUNT OF ADJUSTMENT INCLUDED IN BILL

GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 570.32	$	$ 116.48

ACCOUNT NUMBER 214400055155103

OFFICE FOR INFORMATION AUBURN NY

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
529	627	03266A	03890A	10		6240	GAS 2		
GAS USE X 1.0259 THERM				FACTOR=		6401.6	THERMS	1755.83	1713.58
529	627	13629A	13836A	80	424	16560	ELEC2	756.61	740.48
531	629	OUTDOOR LIGHTING SERVICE				119	ELEC9	15.26	14.86
						SALES TAX		172.82	172.82
					PREVIOUS	BALANCE		62.30	62.30
						16679			

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 2762.82

IF PAID BY JUL 21,1979 PAY THIS AMOUNT → 2704.04

LAST PAYMENT RECEIVED JUN 21 79
AMOUNT OF LAST PAYMENT 2,645.56
NEXT SCHEDULED READ DATE JUL 31 79
NAME ZONOLITE DIV. OF
SERV. ADDR. DUNN RD
ACCOUNT NUMBER 2144006551551 03

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .047940	$	$ .009789

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 306.89	$	$ 163.27

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilo-volt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

102370

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
100023	07	31	5155103	2,185 65			2,185 65
15-060-7				2,185 65			2,185 65

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

102370

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

102370

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
08	13	79

PAY THIS AMOUNT
$ **2,185 65
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

RETAIN THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
627	727	03890A	04412A	10		5220	GAS 2		
GAS USE		X 1.0263	THERM	FACTOR=		5357.2	THERMS	1472.02	1436.56
627	727	13836A	14010A	80	400	13920	ELEC2	663.98	649.46
629	731	OUTDOOR	LIGHTING	SERVICE		125	ELEC9	15.27	14.87
						SALES TAX		147.06	147.06
				PREVIOUS		BALANCE	CREDIT	62.30	<62.30

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 2236.03

IF PAID BY AUG 21,1979 PAY THIS AMOUNT → 2185.65

LAST PAYMENT RECEIVED JUL 19 79
AMOUNT OF LAST PAYMENT 2,704.04
NEXT SCHEDULED READ DATE AUG 29 79
NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD
ACCOUNT NUMBER 21440065515510 3

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .047940	$	$ .009386

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 256.82	$	$ 131.82

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

105139

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
110025	08	29	5155103	2,916 96			2,916 96
15-051-6				2,916 96			2,916 96

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

105139

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

105139

TO THE ORDER OF

NEW YORK STATE, ELEC AND GAS CORP
PO BOX 370
AUBURN NY 13021

MO.	DAY	YR.
09	12	79

PAY THIS AMOUNT	
$ **2,916	96
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
727	829	04412A	05103A	10		6910	GAS 2		
GAS USE		X 1.0372	THERM	FACTOR=		7167.0	THERMS	2011.90	1964.68
727	829	14010A	14224A	80	368	17120	ELEC2	762.00	746.26
731	829	OUTDOOR	LIGHTING	SERVICE		141	ELEC9	15.59	15.19
						SALES TAX		190.83	190.83

9/7/79

TOTAL 2980.32

BUDGET AMTS. BILLED

BUDGET USE BILLED

BALANCE

IF PAID BY SEP 21, 1979 PAY THIS AMOUNT → 2916.96

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED AUG 19 79

AMOUNT OF LAST PAYMENT 2,185.65

NEXT SCHEDULED READ DATE SEP 28 79

NAME ZONOLITE DIV OF

SERV. ADDR. DUNN RD

ACCOUNT NUMBER 2144006551551 03

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .054650	$	$ .010585

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 391.68	$	$ 182.71

OFFICE FOR INFORMATION AUBURN NY

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

CODE EXPLANATION

A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

108246

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
130034	09	28	5155103	2,699 86			2,699 86
15-051-6				2,699 86			2,699 86

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES

WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

108246

GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

108246

TO THE ORDER OF

NEW YORK STATE ELEC AND GAS CORP
PO BOX 370
AUBURN NY 13021

MO.	DAY	YR.
10	16	79

PAY THIS AMOUNT
$ **2,699 86
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

11

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET A
060003	10	29	5155103	3,916 29			3,91
15-051-6				3,916 29			3,91

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED, THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

113079

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

11

TO THE ORDER OF

NEW YORK STATE ELEC AND GAS CORP
PO BOX 370
AUBURN NY 13021

MO.	DAY	YR.
12	07	79

PAY THIS AM
$ **3,91
DOLLARS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 710

NOT N

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
9 26	10 26	05726 A	06499 A	10		7730	GAS 2		
GAS USE		X 1.0315	THERM	FACTOR=		7973.4	THERMS	2772.66	2720.1
10 24	10 26	00000 A	00016 A	80	480	21680	ELEC2	943.42	924.2
9 26	10 24	14434 A	14689 A						
9 28	10 29	OUTDOOR LIGHTING SERVICE				182	ELEC9	16.06	15.6
						SALES TAX		256.21	256.2

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 3988.35

IF PAID BY DEC 11,1979 PAY THIS AMOUNT → 3916.2

LAST PAYMENT RECEIVED OCT 18 79
AMOUNT OF LAST PAYMENT 2,699.86
NEXT SCHEDULED READ. ATE NOV 30 79
NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD
ACCOUNT NUMBER 21440065515 5103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .121900	$	$ .010749

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 971.96	$	$ 235.00

OFFICE FOR INFORMATION AUBURN NY

If you have paid pr vious balance pleas deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilo-volt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

114200

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
140024	11	30	5155103	4,481 13			4,481 13
15-051-6				4,481 13			4,481 13

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

114200

GRACE
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

114200

TO THE ORDER OF

NEW YORK STATE ELEC AND GAS CORP
PO BOX 370
AUBURN N/ 13021

MO.	DAY	YR.
12	18	79

PAY THIS AMOUNT	
$ **4,481	13
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE CODE	LATE AMOUNT	AMOUNT
10 26	11 28	06499 A	07389 A	10		8900	GAS 2		
GAS USE		X 1.03	26 THERM	FACTOR=		9190.1	THERMS	3202.00	3141.63
10 26	11 28	00016 A	00342 A	80	472	26080	ELEC2	1051.45	1030.59
10 29	11 30	UTDOOR LIGHTING SERVICE				193	ELEC9	16.16	15.76
						SALES TAX		293.15	293.15
				PREVIOUS		BALANCE		3916.29	3916.29

BUDGET AMTS. BILLED
BUDGET USE BILLED
BALANCE

TOTAL 8479.05

IF PAID BY DEC 21, 1979 PAY THIS AMOUNT → ~~8397.42~~

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED OCT 18 79
AMOUNT OF LAST PAYMENT 2,699.86

NEXT SCHEDULED READ DATE DEC 31 79

NAME ZONOLITE DIV OF
SERV. ADDR. DUNN RD

ACCOUNT NUMBER 214400655155103

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .122850	$	$ .010664

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 1129.00	$	$ 280.18

OFFICE FOR INFORMATION AUBURN NY

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850 12-78

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs
D—Amt. Due Company
C—Amt. in Customer Favor

ZONOLITE DIVISION, W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

034908

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
100508	01	28	5155103	2,005 97	2.0	40 39	1,965 58
15-060-7				2,005 97		40 39	1,965 58

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

GRACE
ZONOLITE DIVISION
W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

034908

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
02	11	77

PAY THIS AMOUNT	
$ **1,965	58
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
1227	126	87222A	87755E	10		5330	GAS 2	1063.78	1042.49
1227	126	06008E	06345A	80	528	26960	ELEC2	834.14	815.37
1229	128	OUTDOOR LIGHTING SERVICE				203	ELEC9	12.51	12.18
						SALES TAX		133.73	133.73
				PREVIOUS		BALANCE	CREDIT	38.19	38.19

BUDGET AMTS. BILLED

BUDGET USE BILLED

BALANCE

TOTAL 2005.92

IF PAID BY FEB 21,1977

PAY THIS AMOUNT → 1965.58

If you have paid previous balance please deduct from total.

LAST PAYMENT RECEIVED JAN,21,77

AMOUNT OF LAST PAYMENT 1,714.88

NEXT SCHEDULED READ DAT MAR,01,77

NAME ZONOLITE DIV OF

SERV. ADDR. DUNN RD

ACCOUNT NUMBER 2144006551551 03

NO. OF APTS.

RATE ADJUSTMENT PER UNIT OF USE	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .063930	$	$ .005471

AMOUNT OF ADJUSTMENT INCLUDED IN BILL	GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ 340.75	$	$ 148.61

OFFICE FOR INFORMATION AUBURN NY

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

CODE EXPLANATION

A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

ZONOLITE DIVISION, W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

037268

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
170922	03	01	5155103	1,758 03	2.0	34 46	1,723 57
15-060-7				1,758 03		34 46	1,723 57

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

GRACE
ZONOLITE DIVISION
W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

037268

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
03	18	77

PAY THIS AMOUNT	
$ **1,723	57
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO

2-3
710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
126	225	87755E	88201A	10		4460	GAS 2	920.10	902.03
126	225	06345A	06586A	80	496	19280	ELEC2	709.80	693.74
128	3 1	OUTDOOR LIGHTING SERVICE				169	ELEC9	13.11	12.78
						SALES TAX		115.02	115.02

3/15/77

BUDGET AMTS. BILLED

BUDGET USE BILLED

IF PAID BY MAR 22,1977

TOTAL 1758.03

PAY THIS AMOUNT → 1723.57

If you have paid previous balance please deduct from total.

BALANCE

LAST PAYMENT RECEIVED FEB,15,77

AMOUNT OF LAST PAYMENT 1,965.58

NEXT SCHEDULED READ DATE MAR,30,77

NAME ZONOLITE DIV OF

SERV. ADDR. DUNN RD

ACCOUNT NUMBER 2144006551551 03

NO. OF APTS.

RATE ADJUSTMENT PER UNIT OF USE

GAS	POWER AUTHORITY	ELECTRIC FUEL
$ .069370	$	$ .010118

AMOUNT OF ADJUSTMENT INCLUDED IN BILL

GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 309.39	$	$ 141.20

OFFICE FOR INFORMATION AUBURN NY

CODE EXPLANATION

A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

ZONOLITE DIVISION, W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

039103

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
130542	03	30	5155103	1,829 90	1.8	33 71	1,796 19
15-060-7				1,829 90		33 71	1,796 19

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
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GRACE
ZONOLITE DIVISION
W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

039103

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
04	14	77

PAY THIS AMOUNT
$ **1,796 19
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO

2-3
710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
225	328	88201A	88679A	10		4780	GAS 2	1006.69	987.44
225	328	06586A	06785A	80	464	15920	ELEC2	658.18	644.05
3 1	330	OUTDOOR LIGHTING SERVICE				169	ELEC9	13.11	12.78
						SALES TAX		117.46	117.46
						PREVIOUS BALANCE		34.46	34.46

RECEIVED APR 12 1977 CPD-ACCOUNTING

BUDGET AMTS. BILLED		TOTAL	1829.90
BUDGET USE BILLED	IF PAID BY APR 21,1977	PAY THIS AMOUNT →	1796.19

BALANCE	NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE		
		GAS	POWER AUTHORITY	ELECTRIC FUEL
LAST PAYMENT RECEIVED MAR 25 77		$ .074200	$	$ .010118
AMOUNT OF LAST PAYMENT 2,723.57				
NEXT SCHEDULED READ DATE APR 29 77		AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
NAME SERV. ADDR. ZONOLITE DIV OF DUNN RD		GAS	POWER AUTHORITY	ELECTRIC FUEL
		$ 354.68	$	$ 162.79
ACCOUNT NUMBER 219400655155103		OFFICE FOR INFORMATION AUBURN NY		

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

ZONOLITE DIVISION, W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

042124

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
310601	05	21	5155103	1,922 21			1,922 21
15-060-7				1,922 21			1,922 21

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
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042124

GRACE
ZONOLITE DIVISION
W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
06	01	77

PAY THIS AMOUNT	
$ **1,922	21
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
328	427	88679A	89219A	10		5400	GAS 2	1135.06	1113.52
328	427	06785A	06995A	80	440	16800	ELEC2	648.80	634.42
330	429	OUTDOOR LIGHTING SERVICE				142	ELEC9	12.60	12.27
						SALES TAX		125.75	125.75

BUDGET AMTS. BILLED		TOTAL	1922.21
BUDGET USE BILLED	IF PAID BY MAY 21,1977	PAY THIS AMOUNT →	1885.96
BALANCE			
LAST PAYMENT RECEIVED	APR 19 77		
AMOUNT OF LAST PAYMENT	1,796.19		
NEXT SCHEDULED READ DATE	MAY 31 77		
NAME SERV. ADDR.	ZONOLITE DIV OF DUNN RD		
ACCOUNT NUMBER	2144006551551 03		

NO. OF APTS.

RATE ADJUSTMENT PER UNIT OF USE		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ .074630	$	$ .008453

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 403.00	$	$ 143.21

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
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D—Amt. Due Company
C—Amt. in Customer Favor

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NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

ZONOLITE DIVISION, W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

043122

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
140971	05	31	5155103	1,558 00			1,558 00
15-060-7				1,558 00			1,558 00

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
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GRACE
ZONOLITE DIVISION
W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

043122

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
06	15	77

PAY THIS AMOUNT
$ **1,558 00
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

ZONOLITE DIVISION, W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

044990

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
140553	06	27	5155103	2,151 72	1.9	39 81	2,111 91
15-060-7				2,151 72		39 81	2,111 91

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GRACE
ZONOLITE DIVISION
W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

044990

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN, N Y

MO.	DAY	YR.
07	15	77

PAY THIS AMOUNT	
$ **2,111	91
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

ZONOLITE DIVISION, W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

047777

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
250145	08	21	5155103	1,971 47			1,971 47
15-060-7				1,971 47			1,971 47

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GRACE
ZONOLITE DIVISION
W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

047777

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
08	26	77

PAY THIS AMOUNT	
$ **1,971	47
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
627	727	90284A	90865A	10		5810	GAS 2	1244.50	1221.44
627	727	07389A	07590A	80	424	16080	ELEC2	585.83	571.94
629	729	OUTDOOR LIGHTING SERVICE				125	ELEC9	12.16	11.83
						SALES TAX		128.98	128.98

BUDGET AMTS. BILLED

BUDGET USE BILLED

IF PAID BY AUG 21,1977

TOTAL 1921.47

PAY THIS AMOUNT → 1934.19

BALANCE

LAST PAYMENT RECEIVED JUL 21 77

AMOUNT OF LAST PAYMENT 2,111.91

NEXT SCHEDULED READ DATE AUG 29 77

NAME ZONOLITE DIV OF

SERV. ADDR. DUNN RD

ACCOUNT NUMBER 2144006551551 03

NO. OF APTS.

RATE ADJUSTMENT PER UNIT OF USE		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ .079090	$	$ .006058

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 459.51	$	$ 98.17

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION
A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

WRG00370438
ED_005351_00000368-00303

ZONOLITE DIVISION, W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

A4933

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
210606	08	29	5155103	2,052 61	1.9	38 62	2,013 99
15-060-7				2,052 61		38 62	2,013 99

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
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GRACE
ZONOLITE DIVISION
W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

04933

TO THE ORDER O

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
09	22	77

PAY THIS AMOUNT
$ **2,013 9
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

WRG00370439
ED_005351_00000368-00304

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
727	825	90865A	91451A	10		5860	GAS 2	1237.16	1213.91
727	825	07590A	07815A	80	44A	18000	ELEC2	668.70	653.66
729	829	OUTDOOR LIGHTING SERVICE				141	ELEC9	12.47	12.14
						SALES TAX		134.28	134.28

BUDGET AMTS. BILLED		TOTAL	2052.61
BUDGET USE BILLED	IF PAID BY SEP 21, 1977	PAY THIS AMOUNT →	2013.99

BALANCE		NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
LAST PAYMENT RECEIVED	AUG 30, 77		$ .076060	$	$ .007598
AMOUNT OF LAST PAYMENT	1,971.47				
NEXT SCHEDULED READ DATE	SEP 28, 77		AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
NAME / SERV. ADDR.	ZONOLITE DIV OF / DUNN RD		$ 445.71	$	$ 137.83
ACCOUNT NUMBER	2144001-55155103		OFFICE FOR INFORMATION	AUBURN NY	

If you have paid previous balance please deduct from total.

CODE EXPLANATION
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E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

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NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

ZONOLITE DIVISION, W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

REMITTANCE ADVICE

050714

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
110478	09	28	5155103	2,670 29	1.8	47 55	2,622 74
15-060-7				2,670 29		47 55	2,622 74

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
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GRACE
ZONOLITE DIVISION
W.R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

050714

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
10	12	77

PAY THIS AMOUNT
$ **2,622 74
DOLLARS CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

KEEP THIS PORTION FOR YOUR RECORDS WEEDSPORT, N. Y.

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
825	926	91451A	92219A	10		7680	GAS 2	1612.78	1582.80
825	926	07815A	08115A	80	448	24000	ELEC2	833.96	816.72
829	928	OUTDOOR LIGHTING SERVICE				156	ELEC9	12.77	12.44
						SALES TAX		172.16	172.16
					PREVIOUS	BALANCE		38.62	38.62

BUDGET AMTS. BILLED

BUDGET USE BILLED

BALANCE

LAST PAYMENT RECEIVED SEP 27 77

AMOUNT OF LAST PAYMENT 2,013.99

NEXT SCHEDULED READ DATE OCT 28 77

NAME ZONOLITE DIV OF

SERV. ADDR. DUNN RD

ACCOUNT NUMBER 2144006551551 03

IF PAID BY OCT 21, 1977

TOTAL 2670.29

PAY THIS AMOUNT → 2622.74

If you have paid previous balance please deduct from total.

NO. OF APTS.

RATE ADJUSTMENT PER UNIT OF USE		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ .076350	$	$ .008768

AMOUNT OF ADJUSTMENT INCLUDED IN BILL		
GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 586.37	$	$ 211.80

OFFICE FOR INFORMATION AUBURN NY

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

CODE EXPLANATION

A—Actual Read
E—Estimated Read
R—Reactive Kilovolt Ampere Hrs.
D—Amt. Due Company
C—Amt. In Customer Favor

INDUSTRIAL CHEMICALS GROUP, W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

056467

REMITTANCE ADVICE

OUR NO.	YOUR INVOICE MO.	DAY	NO.	INVOICE AMOUNT	%	DISCOUNT	NET AMOUNT
280622	10	26	5155103	3,645 88			3,645 88
15-060-7				3,645 88			3,645 88

DETACH CHECK BEFORE DEPOSITING AND RETAIN THIS FOR YOUR FILES
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GRACE
INDUSTRIAL CHEMICALS GROUP
W. R. GRACE & CO.
CAMBRIDGE, MASSACHUSETTS 02140

056467

TO THE ORDER OF

NEW YORK STATE
ELECTRIC & GAS CORP
AUBURN N Y

MO.	DAY	YR.
12	29	77

PAY THIS AMOUNT	
$ **3,645	88
DOLLARS	CENTS

CONTINENTAL ILLINOIS NATIONAL
BANK AND TRUST COMPANY OF CHICAGO 2-3 / 710

NOT NEGOTIABLE

WRG00370443
ED_005351_00000368-00308

KEEP THIS PORTION FOR YOUR RECORDS

SERVICE FROM	SERVICE TO	METER READING PREVIOUS	METER READING PRESENT	METER CONSTANT	BILLING DEMAND	100 CU. FT. KW-HRS.	RATE	GROSS AMOUNT	NET AMOUNT
10261128		93126A	94111A	10		9750	GAS 2	2223.38	2165.30
10261128		08441A	08854A	80	584	33040	ELEC2	1119.17	1095.42
10281130		OUTDOOR LIGHTING SERVICE				218	ELEC9	14.35	13.98
						SALES TAX		234.98	234.98
						PREVIOUS BALANCE		54.00	54.00
PLEASE SEE ENCLUSURE RE PSC APPROVED NEW RATES									

BUDGET AMTS. BILLED

BUDGET USE BILLED

BALANCE

LAST PAYMENT RECEIVED NOV. 28, 77

AMOUNT OF LAST PAYMENT 3,008.48

NEXT SCHEDULED READ DATE DEC. 29, 77

NAME ZONOLITE DIV OF

SERV. ADDR. DUNN RD

ACCOUNT NUMBER 2144006551551 03

IF PAID BY DEC 22, 1977

TOTAL 3645.88

PAY THIS AMOUNT → 3563.68

NO. OF APTS.	RATE ADJUSTMENT PER UNIT OF USE: GAS	POWER AUTHORITY	ELECTRIC FUEL
	$ .010020	$	$ .007415

AMOUNT OF ADJUSTMENT INCLUDED IN BILL: GAS	POWER AUTHORITY	ELECTRIC FUEL
$ 231.13	$	$ 246.76

OFFICE FOR INFORMATION AUBURN NY

If you have paid previous balance please deduct from total.

CODE EXPLANATION

A—Actual Read
E—Estimated Read
R—Reactive Kilo-volt Ampere Hrs.
D—Amt. Due Company
C—Amt. in Customer Favor

BILLS MAY BE PAID AND RATE SCHEDULES ARE AVAILABLE AT ANY OF THE COMPANY'S BUSINESS OFFICES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
ITHACA, N.Y. 14850

PLEASE SEE BACK FOR EXPLANATION OF ADJUSTMENTS.

CODE 05

WEYERHAUSER

QC

QC

12/27/79
BN-452467
shipped 12/21/79
cc exp - 1850

{Verm crude ore
cc exp: 1850
10.}

Mr Jerry Johnson.
Weyhauser Co. Rt 4 Box 78
Nashville, Arkansas. Byer, Ark.
71852

S. J. Morgan - QC Super.

Jerry Harrington
Lilly
406-293-4131
293-4156
X250

(what does four digit number mean)

Called Jerry Harrington 1/23/79

He will get Back to Mr. Johnson @ Weyhauser.

Al Crawford

To Bob M.

Date 1-22. Time 4:48 A.M. P.M.

WHILE YOU WERE OUT

M. Jerry Johnson

of Weyerhauser Co

Phone 501-286-3194.

Area Code Number Extension

TELEPHONED	✓	PLEASE CALL	✓
CALLED TO SEE YOU		WILL CALL AGAIN	
WANTS TO SEE YOU		URGENT	
RETURNED YOUR CALL			

Message Wants info. of expansion of vermiculite

Dunlap

Operator

AD5P50

Box# S 5-4-3 2 of 2 D.S.

1988 YTD 175,257.48
4th Quarter - 35,131.63 Hrs
mfg - plant & lab & office

Bureau of Labor Statistics
Log and Summary of Occupational Injuries and Illnesses

U.S. Department of Labor

For Calendar Year 19 88 — Page 1 of 1

Form Approved O.M.B. No. 1220-0029

NOTE: This form is required by Public Law 91-596 and must be kept in the establishment for *5 years*. Failure to maintain and post can result in the issuance of citations and assessment of penalties. *(See posting requirements on the other side of form.)*

RECORDABLE CASES: You are required to record information about every occupational death, every nonfatal occupational illness, and those nonfatal occupational injuries which involve one or more of the following: loss of consciousness, restriction of work or motion, transfer to another job, or medical treatment (other than first aid). *(See definitions on the other side of form.)*

Company Name: W. R. Grace - Construction Products Division
Establishment Name:
Establishment Address: 2051 W. 65th St. Chicago Illinois 60636

Case or File Number	Date of Injury or Onset of Illness	Employee's Name	Occupation	Department	Description of Injury or Illness	Extent of and Outcome of INJURY: Fatalities	Nonfatal Injuries: Injury Related	Injuries With Lost Workdays			Injuries Without Lost Workdays	Type of Illness (CHECK Only One Column for Each Illness)							Fatalities	Nonfatal Illnesses: Illness Related	Illnesses With Lost Workdays				Illnesses Without Lost Workdays
Enter a nondupli-cating number which will facilitate com-parisons with supple-mentary records.	Enter Mo./day.	Enter first name or initial, middle initial, last name.	Enter regular job title, not activity employee was performing when injured or at onset of illness. In the absence of a formal title, enter a brief description of the employee's duties.	Enter department in which the employee is regularly employed or a description of normal workplace to which employee is assigned, even though temporarily working in another department at the time of injury or illness.	Enter a brief description of the injury or illness and indicate the part or parts of body affected. Typical entries for this column might be: Amputation of 1st joint right forefinger; Strain of lower back; Contact dermatitis on both hands; Electrocution—body.	Enter DATE of death. Mo./day/yr.	Enter a CHECK if injury involves days away from work, or days of restricted work activity, or both.	Enter a CHECK if injury involves days away from work.	Enter number of DAYS away from work.	Enter number of DAYS of restricted work activity.	Enter a CHECK if no entry was made in columns 1 or 2 but the injury is recordable as defined above.	Occupational skin diseases or disorders	Dust diseases of the lungs	Respiratory conditions due to toxic agents	Poisoning (systemic effects of toxic materials)	Disorders due to physical agents	Disorders associated with repeated trauma	All other occupational illnesses	Enter DATE of death. Mo./day/yr.	Enter a CHECK if illness involves days away from work, or days of restricted work activity, or both.	Enter a CHECK if illness involves days away from work.	Enter number of DAYS away from work.	Enter number of DAYS of restricted work activity.	Enter a CHECK if no entry was made in columns 8 or 9.
(A)	(B)	(C)	(D)	(E)	(F)	(1)	(2)	(3)	(4)	(5)	(6)	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(8)	(9)	(10)	(11)	(12)	(13)
					PREVIOUS PAGE TOTALS																			
749	10-11-88	Javon Bates	Dry Airlen Operator		Chemical Soap in Eye						✓													
750	11-3-88	Thomas Watson	Packager	Bituthene	Back Injury		✓			1														
751	12-22	Johnnie Rodgers	Leader "A"	Bituthene	Burned Hand						✓													
					TOTALS (from totals on other side of form.)																			

INJURIES

Certification of Annual Summary Totals By: Sammy Pertington Title: Payroll Mgr. Date: 11-25-88

OSHA No. 200

11 03 16

FOLD

OSHA No. 200 — POST ONLY THIS PORTION OF THE LAST PAGE NO LATER THAN FEBRUARY 1.

WRG00371810
ED_005351_00000368-00314

FORM 45: Employers First Report of Injury or Illness

PLEASE TYPE OR PRINT

Filing of this report does not affect your liability under the Workmen's Compensation Act and is not incriminatory in any sense.

A	1 *45	Illinois Unemployment Compensation Number	2 157109	Date Of Report	3 10 Month – 25 Day – 88 Year	Case Or File Number	749
B	Employer's Name 4 W. R. Grace - Construction Products Division						
C	Doing Business Under The Name Of Same as above			6 City, State		7 Zip Code	
D	Mail Address 8 6051 W. 65th St.			9 City, State	Chicago, Illinois	10 Zip Code 60638	
E	Employer Location If Different From Mail Address 11						
F	Nature Of Business or Service Construction Products	SIC Code	12	Total Number of Employees at the Location Where Illness or Injury Occurred	13 117		
G	Name of Workmen's Comp. Insurance Carrier 14 C.N.A. Insurance	15 Policy Number		Self Insured 16 Yes ☐ 17 No ☐	Employer Location Code (If Applicable)		
H	Employee's Name (Last, First, Middle) 18 Javon Bates			Social Security Number	19 335-46-5523		
I	Home Address 20 10977 S. Racine Ave			21 City, State	Chicago, Illinois	22 Zip Code 60643	
J	Male 23 XX Female 24 ☐	Married 25 ☐ Single 26 XX Widow(er) 27 ☐ Divorced 28 ☐		Birth Date	29 09 Month – 10 Day – 52 Year	Number Of Dependent Children Under 18 At Time Of Injury or Illness	30
K	Date Of The Injury Or Exposure	31 10 Month – 11 Day – 88 Year	Employee's Average Weekly Earnings	32 $444.40	Last Day Employee Worked	33 10 Month – 25 Day – 88 Year	
L	Job Title Or Occupation Dry Airlon Utility Operator		34	Department Normally Assigned			
M	Address Of Location Where Injury Or Exposure Occurred 35 6051 W. 65th St.			36 City, State	Chicago, Illinos	37 Zip Code 60638	
N	Did Employee Die As A Result Of The Injury or Illness?	38 Yes ☐ 39 No XX	If Employee Died As A Result Of The Injury Or Illness, Give Date Of Death		40 Month – Day – Year		
O	Was The Injury Or Exposure On The Employer's Premises?	41 Yes XX 42 No ☐	Did This Incident Result In:	Occupational Injury 43 ☐	Occupational Disease 44 ☐		
P	Nature Of The Injury Chemical Soap in Left Eye					45	
Q	Part Of The Body Affected (Be Specific) Left Eye					46	
R	What Task Was Employee Performing When Illness or Injury Occured? Checking Level on Feed Tank						
S	Object Or Substance Responsible For Injury or Illness (Agency) Feed Tank					47	
T	How Did Accident Or Illness Occur (Type)? While employee was checking level on feed tank, some liquid airlon splashed in his eye.					48	
U	What Hazardous Conditions, Methods Or Lack Of Protective Devices Contributed? Employee was not wearing safety glasses					49	
V	What Unsafe Act By A Person Caused or Contributed To The Injury Or Illness? Employee was not wearing safety glasses					50	
W	Have Medical Services Been Rendered To The Employee?	51 Yes XX 52 No ☐	Is Or Has The Employee Been Hospitalized?	53 Yes ☐ 54 No XX			
X	Name And Address Of Physician Robert E. Boyd, M.D. 4949 W. 65th St.			City, State	Bedford Park, Illinois	Zip Code 60638	
Y	Name And Address Of Hospital Clearing Industrial Clinic 4949 W. 65th St.			City, State	Bedford Park, Illinoos	Zip Code 60638	
Z	Report Prepared By: (Name-Print Or Type)	Signature		Title And Telephone Number			

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GRACE

INCIDENT INVESTIGATION REPORT
PERSONAL INJURY/PROPERTY DAMAGE

AWAY FROM WORK 0

NUMBER OF RESTRICTED WORK DAYS 0

DIVISION/PLANT	PLANT LOCATION (City/State)	INJURY NUMBER (From OSHA 200 Log)
W.R. Grace - construction products division	Chicago, Il	749

LOCATION OF INCIDENT	COMPANY PREMISES	TIME OF INCIDENT	DATE OF INCIDENT
6051 W. 65th St.	XX YES ☐ NO	7:30 AM XX PM ☐	October 11, 1988

PERSONNEL

INJURED OR ILL

NAME (FIRST) Jovan (MIDDLE) (LAST) Bates

SOC SEC NO. # 335-46-5523

SEX: X MALE ☐ FEMALE

MARITAL STATUS: ☐ MARRIED X SINGLE

DATE OF BIRTH: 09 | 10 | 52

ACCIDENT CATEGORY: ☐ DAYS AWAY FROM WORK ☐ MEDICAL TREATMENT ☐ RESTRICTED WORK XX FIRST AID

OCCUPATION: Dry Airlon Utility Operator

LENGTH OF EMPLOYMENT	YEARS	MONTHS	LENGTH OF PRESENT OCC.	YEARS	MONTHS	SHIFT
	9	6		9	6	XXX REG. ☐ OVERTIME

NATURE OF INJURY/PARTS OF BODY AFFECTED: Chemical Soap In Left Eye

DATES OF PREVIOUS INJURIES:

WHAT FIRST AID: Eye Examination Irrigation - Ointment - Drops

WHERE GIVEN: Clinic

BY WHOM: Robert E. Boyd, M.D.

WHERE SENT: ☐ HOSPITAL (Name and Address) ☐ HOME X OTHER (Specify)

Clearing Industrial Clinic
4949 W. 65th St.
Bedford Park, Illinois 60638

NAME AND ADDRESS OF ATTENDING PHYSICIAN

Robert E. Boyd, M.D.
4949 W. 65th St.
Bedford Park, Illinois 60638

PROPERTY

PROPERTY DAMAGE (est. dollar value): N/A

LOST PRODUCTION (i.e. days, hours, lbs., tons) AND ESTIMATED VALUE:

LOSS TYPE (explosion, fire, wind)/IDENTIFY PROPERTY DAMAGED:

OTHER

(NEAR MISS) NATURE OF INCIDENT/DOLLAR COST (if applicable):

DESCRIPTION

DESCRIBE EVENTS LEADING TO INCIDENT/WORK IN PROGRESS/STAGE OF PROCESS/ACTUAL ACTS OF INJURED AND FELLOW EMPLOYEES

While checking level on feed tank, some liquid airlon splashed in my left eye.

DESCRIPTION

CONTINUE DESCRIPTION

ANALYSIS AND EVALUATION

IMMEDIATE CAUSE(S): WHAT SPECIFIC ACTS / FAILURE TO ACT OR CONDITIONS CONTRIBUTED DIRECTLY TO THE INCIDENT?

Recirculation Pump caused material to splash.

BASIC CAUSE(S): WHAT ARE THE BASIC CAUSES AND WHAT ARE THE REASONS FOR THESE CAUSES TO EXIST?

Recirculation Pump on failure to wear safety goggles.

EVALUATION	SEVERITY POTENTIAL			PROBABLE RECURRENCE RATE		
	☐ MAJOR	☐ SERIOUS	☐ NOT SERIOUS	☐ FREQUENT	☐ OCCASIONAL	☐ RARE

PREVENTION

WHAT CORRECTIVE ACTION HAS BEEN OR WILL BE TAKEN TO PREVENT A RECURRENCE?

Turn off recirculation Pump before checking level.

Wear Safety goggles.

COMPLETION DATE 10 | 25 | 88

INVESTIGATED BY	DATE	REVIEWED BY	DATE
Robert G. Krzystotczyk	10 | 25 | 88	[illegible]	10 | 25 | 88

REVIEWER'S COMMENTS (IS INVESTIGATION COMPLETE AND CORRECTIVE ACTION ADEQUATE?)

FORM 45: Employers First Report of Injury or Illness

PLEASE TYPE OR PRINT

Filing of this report does not affect your liability under the Workmen's Compensation Act and is not incriminatory in any sense.

A	1 / *45	Illinois Unemployment Compensation Number	2 / 157109	Date Of Report	3 / 11 Month 07 Day 88 Year	Case Or File Number	750
B	Employer's Name 4 / W. R. Grace Construction Products Division						
C	Doing Business Under The Name Of			6 / City, State		7 / Zip Code	
D	Mail Address 8 / 6051 W. 65th St.			9 / Chicago, Illinois City, State		10 / 60638 Zip Code	
E	Employer Location If Different From Mail Address 11 /						
F	Nature Of Business or Service / Construction Products	SIC Code	12 /	Total Number of Employees at the Location Where Illness or Injury Occurred	13 / 117		
G	Name of Workmen's Comp. Insurance Carrier 14 / C.N.A. Insurance	15 Policy Number /		Self Insured 16 / Yes ☐ 17 / No ☐	Employer Location Code (If Applicable)		
H	Employee's Name (Last, First, Middle) 18 / Watson, Thomas A.			Social Security Number	19 / 331-66-4339		
I	Home Address 20 / 1519 W. 77th St.			21 / Chicago, Illinois City, State		22 / 60626 Zip Code	
J	Male 23 / XX	Female 24 / ☐	Married 25 / ☐	Single 26 / XX	Widow(er) 27 / ☐	Divorced 28 / ☐	Birth Date 29 / 10 Month 19 Day 62 Year
	Number Of Dependent Children Under 18 At Time Of Injury or Illness	30 /					
K	Date Of The Injury Or Exposure	31 / 11 Month 03 Day 88 Year	Employee's Average Weekly Earnings	32 / $433.60	Last Day Employee Worked	33 / 11 Month 07 Day 88 Year	
L	Job Title Or Occupation	Packager	34 /	Department Normally Assigned	Bituthene		
M	Address Of Location Where Injury Or Exposure Occurred 35 / 6051 W. 65th St.			36 / Chicago, Illinois City, State		37 / 60638 Zip Code	
N	Did Employee Die As A Result Of The Injury or Illness?	38 / Yes ☐	39 / No ☒	If Employee Died As A Result Of The Injury Or Illness, Give Date Of Death	40 / Month Day Year		
O	Was The Injury Or Exposure On The Employer's Premises?	41 / Yes ☒	42 / No ☐	Did This Incident Result In:	Occupational Injury 43 / ☐	Occupational Disease 44 / ☐	
P	Nature Of The Injury	Back Injury				45 /	
Q	Part Of The Body Affected (Be Specific)	Back				46 /	
R	What Task Was Employee Performing When Illness or Injury Occured?	Employee was pushing off a load of Bituthene 3100					
S	Object Or Substance Responsible For Injury or Illness (Agency)	Load of Bituthene 3100				47 /	
T	How Did Accident Or Illness Occur (Type)?	Roll Became hung up as employee was pushing				48 /	
U	What Hazardous Conditions, Methods Or Lack Of Protective Devices Contributed?					49 /	
V	What Unsafe Act By A Person Caused or Contributed To The Injury Or Illness?	None *** This employee was also sent to Clearing Industrial Clinic				50 /	
W	Have Medical Services Been Rendered To The Employee?	51 / Yes ☒	52 / No ☐	Is Or Has The Employee Been Hospitalized?	53 / Yes ☐	54 / No ☒	
X	Name And Address Of Physician	Emmanuel Sareen 2701 W. 68th St.		Chicago, Illinois City, State		60629 Zip Code	
Y	Name And Address Of Hospital	Holy Cross Hospital 2701 W. 68th St.		City, State Chicago, Illinois		60629 Zip Code	
Z	Report Prepared By: (Name-Print Or Type)		Signature		Title And Telephone Number Payroll 458-9700		

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GRACE

INCIDENT INVESTIGATION REPORT
PERSONAL INJURY/PROPERTY DAMAGE

NUMBER OF DAYS AWAY FROM WORK: 0

NUMBER OF RESTRICTED WORK DAYS: 1

DIVISION/PLANT	PLANT LOCATION (City/State)	INJURY NUMBER (From OSHA 200 Log)
W.R. Grace - Construction Products Division	Chicago, Illinois	750

LOCATION OF INCIDENT	COMPANY PREMISES	TIME OF INCIDENT	DATE OF INCIDENT
6051 W. 65th St.	[X] YES [ ] NO	2:15 AM [X] PM [ ]	11 03 88

PERSONNEL

INJURED OR ILL

NAME (FIRST) Thomas (MIDDLE) Anthony (LAST) Watson

SOC SEC NO #331-66-4339

OCCUPATION: Packager - Bituthene

SEX: [X] MALE [ ] FEMALE

MARITAL STATUS: [ ] MARRIED [X] SINGLE

DATE OF BIRTH: 10 19 62

ACCIDENT CATEGORY: [ ] DAYS AWAY FROM WORK [ ] MEDICAL TREATMENT [X] RESTRICTED WORK [X] FIRST AID

LENGTH OF EMPLOYMENT	YEARS	MONTHS	LENGTH OF PRESENT OCC.	YEARS	MONTHS	SHIFT
	6	7		2	5	[X] REG. [ ] OVERTIME

NATURE OF INJURY/PARTS OF BODY AFFECTED: Back Injury

DATES OF PREVIOUS INJURIES: 6-9-87,4-20-87,4-6-87,9-11-86,5-5-86

WHAT FIRST AID	WHERE GIVEN	BY WHOM
X-Ray	Holy Cross Hospital	Emmanuel Sareen

WHERE SENT [X] HOSPITAL (Name and Address) [ ] HOME [ ] OTHER (Specify)

Holy Cross
2701 W. 68th St.
Chicago, Illinois 60629

Clearing Industrial Clinic
4949 W. 65th St.
Chicago, Illinois 60638

NAME AND ADDRESS OF ATTENDING PHYSICIAN

Emmanuel Sareen
2701 W. 68th St.
Chicago, Illinois 60629

PROPERTY

PROPERTY DAMAGE (est. dollar value)

LOST PRODUCTION (i.e. days, hours, lbs., tons) AND ESTIMATED VALUE

LOSS TYPE (explosion, fire, wind)/IDENTIFY PROPERTY DAMAGED

OTHER

(NEAR MISS) NATURE OF INCIDENT/DOLLAR COST (if applicable)

DESCRIPTION

DESCRIBE EVENTS LEADING TO INCIDENT/WORK IN PROGRESS/STAGE OF PROCESS/ACTUAL ACTS OF INJURED AND FELLOW EMPLOYEES

While pushing off a load of Bituthene 3100 the load got hung up causing unexpected increased resistance.

73-119(Rev 6/82)

WRG00371815

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DESCRIPTION

CONTINUE DESCRIPTION

ANALYSIS AND EVALUATION

IMMEDIATE CAUSE(S): WHAT SPECIFIC ACTS / FAILURE TO ACT OR CONDITIONS CONTRIBUTED DIRECTLY TO THE INCIDENT?

Unexpected resistance of load which should roll freely.

BASIC CAUSE(S): WHAT ARE THE BASIC CAUSES AND WHAT ARE THE REASONS FOR THESE CAUSES TO EXIST?

Load became hung up.

EVALUATION	SEVERITY POTENTIAL			PROBABLE RECURRENCE RATE		
	☐ MAJOR	☐ SERIOUS	☒ NOT SERIOUS	☐ FREQUENT	☐ OCCASIONAL	☒ RARE

PREVENTION

WHAT CORRECTIVE ACTION HAS BEEN OR WILL BE TAKEN TO PREVENT A RECURRENCE?

Whenever load becomes hung up use tractor to remove load.

COMPLETION DATE 11 | 04 | 88

INVESTIGATED BY	DATE	REVIEWED BY	DATE
Robert G. Krystofczyk	11 | 04 | 88	R H Hasn	11 | 7 | 88

REVIEWER'S COMMENTS (IS INVESTIGATION COMPLETE AND CORRECTIVE ACTION ADEQUATE?)

FORM 45 Employers First Report of Injury or Illness

PLEASE TYPE OR PRINT

Filing of this report does not affect your liability under the Workmen's Compensation Act and is not incriminatory in any sense.

A	1 *45	Illinois Unemployment Compensation Number	2 157109	Date Of Report	3 12 Month 22 Day 88 Year	Case Or File Number	751
B	4 W.R. Grace Construction Products Division						
C	Doing Business Under The Name Of: Same		6 City, State			7 Zip Code	
D	Mail Address: 8 6051 W. 65th St.		9 City, State: Chicago, Illinois			10 Zip Code: 60638	
E	Employer Location If Different From Mail Address: 11						
F	Nature Of Business or Service: Construction Products	SIC Code	12	Total Number of Employees at the Location Where Illness or Injury Occurred	13 111		
G	Name of Workmen's Comp. Insurance Carrier: 14 C.N.A. Insurance Company	15 Policy Number		Self Insured: 16 Yes ☐ 17 No ☐	Employer Location Code (If Applicable)		
H	Employee's Name (Last, First, Middle): 18 Rodgers, Johnnie			Social Security Number	19 428-96-1008		
I	Home Address: 20 1927 Adams Street		21 City, State: Chicago, Illinois			22 Zip Code: 60641	
J	Male 23 ☒ Female 24 ☐	Married 25 ☒ Single 26 ☐ Widow(er) 27 ☐ Divorced 28 ☐	Birth Date	29 01 Month 13 Day 45 Year	Number Of Dependent Children Under 18 At Time Of Injury or Illness	30 unknown	
K	Date Of The Injury Or Exposure	31 12 Month 21 Day 88 Year	Employee's Average Weekly Earnings	32 $466.40	Last Day Employee Worked	33 12 Month 22 Day 88 Year	
L	Job Title Or Occupation: Leader "a"		34	Department Normally Assigned	Bituthene		
M	Address Of Location Where Injury Or Exposure Occurred: 35 6051 W. 65th St.		36 City, State: Chicago, Illinois			37 Zip Code: 60638	
N	Did Employee Die As A Result Of The Injury or Illness?	38 Yes ☐	39 No ☒	If Employee Died As A Result Of The Injury Or Illness, Give Date Of Death	40 Month Day Year		
O	Was The Injury Or Exposure On The Employer's Premises?	41 Yes ☒	42 No ☐	Did This Incident Result In:	43 Occupational Injury ☐	44 Occupational Disease ☐	
P	Nature Of The Injury: Burned Hand					45	
Q	Part Of The Body Affected (Be Specific): Hand					46	
R	What Task Was Employee Performing When Illness or Injury Occured? Cleaning Hopper						
S	Object Or Substance Responsible For Injury or Illness (Agency): Hopper						
						47	
T	How Did Accident Or Illness Occur (Type)? While trying to clean line from paper break, Mastic fell from hopper on to						
	glove (cloth) burning back of left hand. Mastic fell on hand after pulling gloves off.					48	
U	What Hazardous Conditions, Methods Or Lack Of Protective Devices Contributed?						
						49	
V	What Unsafe Act By A Person Caused or Contributed To The Injury Or Illness?					50	
W	Have Medical Services Been Rendered To The Employee?	51 Yes ☒	52 No ☐	Is Or Has The Employee Been Hospitalized?	53 Yes ☐	54 No ☒	
X	Name And Address Of Physician			City, State		Zip Code	
Y	Name And Address Of Hospital: Clearing Industrial Clinic 4949 W. 65th St.			City, State: Chicago, Illinois		Zip Code: 60638	
Z	Report Prepared By: (Name-Print Or Type) Tammy Ryan	Signature: Tammy Ryan		Title And Telephone Number: Payroll (312) 458-9700			

GRACE

INCIDENT INVESTIGATION REPORT
PERSONAL INJURY/PROPERTY DAMAGE

AWAY FROM WORK (0)
NUMBER OF RESTRICTED WORK DAYS 0

DIVISION/PLANT	PLANT LOCATION (City/State)	INJURY NUMBER (From OSHA 200 Log)
W.R. Grace Construction Products Division	Chicago, Illinois	751

LOCATION OF INCIDENT	COMPANY PREMISES	TIME OF INCIDENT	DATE OF INCIDENT
Bituthene Department	[X] YES [ ] NO	AM [X] PM [ ]	12 / 21 / 88

PERSONNEL

INJURED OR ILL

NAME (FIRST) (MIDDLE) (LAST): Johnnie Rodgers

SOC SEC NO.: 428-96-1008

OCCUPATION: Leader "A"

SEX: [X] MALE [ ] FEMALE

MARITAL STATUS: [X] MARRIED [ ] SINGLE

DATE OF BIRTH: 01 / 13 / 45

ACCIDENT CATEGORY: [ ] DAYS AWAY FROM WORK [ ] MEDICAL TREATMENT [ ] RESTRICTED WORK [ ] FIRST AID

LENGTH OF EMPLOYMENT	YEARS	MONTHS	LENGTH OF PRESENT OCC.	YEARS	MONTHS	SHIFT
	18	6				[X] REG. [ ] OVERTIME

NATURE OF INJURY/PARTS OF BODY AFFECTED: Burned Hand (left)

DATES OF PREVIOUS INJURIES:

WHAT FIRST AID	WHERE GIVEN	BY WHOM
Sent to Clinic	Clearing Clinic	

WHERE SENT [ ] HOSPITAL (Name and Address) [ ] HOME [X] OTHER (Specify)

Clearing Industrial Clinic
4949 W. 65th St.
Bedford Park, Illinois 60638

NAME AND ADDRESS OF ATTENDING PHYSICIAN:

PROPERTY

PROPERTY DAMAGE (est. dollar value): None

LOST PRODUCTION (i.e. days hours dollars) AND ESTIMATED VALUE:

LOSS TYPE (explosion, fire, wind)/IDENTIFY PROPERTY DAMAGED: None

OTHER

(NEAR MISS) NATURE OF INCIDENT/DOLLAR COST (if applicable): None

DESCRIPTION

DESCRIBE EVENTS LEADING TO INCIDENT/WORK IN PROGRESS/STAGE OF PROCESS/ACTUAL ACTS OF INJURED AND FELLOW EMPLOYEES

While trying to clean line from paper break, Mastic fell from hopper on to glove (cloth) burning back of left hand. Mastic fell on hand after pulling gloves off.

73-119(Rev 6/82)

CONTINUE DESCRIPTION

DESCRIPTION

ANALYSIS AND EVALUATION

IMMEDIATE CAUSE(S): WHAT SPECIFIC ACTS / FAILURE TO ACT OR CONDITIONS CONTRIBUTED DIRECTLY TO THE INCIDENT?

BASIC CAUSE(S): WHAT ARE THE BASIC CAUSES AND WHAT ARE THE REASONS FOR THESE CAUSES TO EXIST?

Employee should be sure hopper is empty before trying to clean hopper.

EVALUATION	SEVERITY POTENTIAL			PROBABLE RECURRENCE RATE		
	☐ MAJOR	☐ SERIOUS	☒ NOT SERIOUS	☐ FREQUENT	☐ OCCASIONAL	☒ RARE

PREVENTION

WHAT CORRECTIVE ACTION HAS BEEN OR WILL BE TAKEN TO PREVENT A RECURRENCE?

COMPLETION DATE 12 | 21 | 88

INVESTIGATED BY	DATE	REVIEWED BY	DATE
Mason Newell	12-21-88	[signature]	12 | 22 | 88

REVIEWER'S COMMENTS (IS INVESTIGATION COMPLETE AND CORRECTIVE ACTION ADEQUATE?)

IF SERIOUS PROPERTY DAMAGE OR PERSONAL INJURY OCCURS, IMMEDIATELY PHONE THE ICG HEALTH AND SAFETY DEPARTMENT

4th Quarter

19 - (Office & lab)
6 - (Foreman)
25 (employees)
x 8 hrs
200 hrs
x 61 (days in quarter - 4 Holidays)
12,200 hrs

24,813.59 (reg. plant hrs)
1,046.04 (O.T. Plant)
25,859.63 total plant hrs.

12,200
25,859.63
38,059.63

Certified Copy of Death Certificate mld cc to HAE 8-18-87

STATE OF WASHINGTON DEPARTMENT OF SOCIAL AND HEALTH SERVICES
DIVISION OF HEALTH

1408

DECEDENT

Dexter Raymond WILLIAMS Male July 17 1987 — STATE FILE NUMBER

4. RACE (WHITE, BLACK, AM. IND., ETC.) (SPECIFY): White
5. AGE (LAST BIRTHDAY) (YRS): 64
6. UNDER 1 YEAR — MOS.
7. UNDER 1 DAY — DAYS, HOURS, MINS.
8. BIRTHDATE (MO DAY YR): May 8 1923
9. COUNTY OF DEATH: Spokane
10. CITY, TOWN OR LOCATION OF DEATH: Spokane
11. PLACE OF DEATH (CHECK BOX FOR PLACE; THEN GIVE ADDRESS OR INSTITUTION NAME): 0 HOME 2 IN TRANSPORT 3 EMERG. RM. OUT. PTN. X HOSP. 5 NUR. HOME 6 OTHER PLACE: Sacred Heart Medical Center
12. RECEIVED EMERGENCY CARE (AMBULANCE, FIRE/R, PARAMED.): No (YES/NO)
13. BIRTH STATE (IF NOT IN U.S.A. GIVE COUNTRY): Montana
14. CITIZEN OF WHAT COUNTRY: U.S.A.
15. MARRIED, NEVER MARRIED, WIDOWED, DIVORCED: Married
16. SPOUSE (IF WIFE GIVE MAIDEN NAME): Kathleen Shields
17. WAS DECEDENT EVER IN U.S. ARMED FORCES? (YES/NO): Yes
18. SOCIAL SECURITY NO.: 516-22-4431
19. USUAL OCCUPATION (GIVE KIND OF WORK DONE DURING MOST OF WORKING LIFE EVEN IF RETIRED): Laborer-Woods Worker
20. KIND OF BUSINESS OR INDUSTRY: U.S. Forest Service
21. RESIDENCE — NUMBER AND STREET: P.O. Box 806 / 312 Main
22. CITY, TOWN OR LOCATION: Libby
23. INSIDE CITY LIMITS? (YES/NO): yes
24. COUNTY: Lincoln
25. STATE: Montana

PARENTS

26. FATHER'S NAME (FIRST, MIDDLE, LAST): Peter Williams
27. MOTHER'S MAIDEN NAME (FIRST, MIDDLE, LAST): Mary Jane Phillips

DISPOSITION

28. INFORMANT, NAME: Kathleen Williams
29. MAILING ADDRESS — STREET OR RFD NO.: P.O. Box 806 — CITY OR TOWN: 312 Main, Libby — STATE: Montana 59923
30. BURIAL, CREMATION, REMOVAL, OTHER (SPECIFY): Burial
31. DATE (MO DAY YR): July 21, 1987
32. CEMETERY/CREMATORY NAME: City of Libby Cemetery
33. LOCATION — CITY, TOWN, STATE: Libby, Montana
34. FUNERAL DIRECTOR — SIGNATURE: X Mel Vial
35. NAME OF FACILITY: Vial Funeral Home
36. ADDRESS OF FACILITY: 422 W 2nd, Libby, Montana 59923

CERTIFIER

TO BE COMPLETED ONLY BY CERTIFYING PHYSICIAN

37. TO THE BEST OF MY KNOWLEDGE, DEATH OCCURRED AT THE TIME, DATE AND PLACE AND DUE TO THE CAUSE(S) STATED
SIGNATURE AND TITLE: X W. Bennett MD
38. DATE SIGNED (MO DAY YR): 7-22-87
39. HOUR OF DEATH (24 HRS): 2035
40. NAME AND TITLE OF ATTENDING PHYSICIAN (IF OTHER THAN CERTIFIER) (TYPE OR PRINT)
41. NAME AND ADDRESS OF CERTIFIER (PHYSICIAN, MEDICAL EXAMINER OR CORONER) (TYPE OR PRINT): W. Bennett, M.D. W 104 5th Spokane, WA 99201

TO BE COMPLETED ONLY BY MEDICAL EXAMINER OR CORONER

41. ON THE BASIS OF EXAMINATION AND/OR INVESTIGATION IN MY OPINION DEATH OCCURRED AT THE TIME, DATE AND PLACE AND DUE TO THE CAUSE(S) STATED
SIGNATURE AND TITLE: X
42. DATE SIGNED (MO DAY YR)
43. HOUR OF DEATH (24 HRS)
44. PRONOUNCED DEAD (MO DAY YR)
45. HOUR PRONOUNCED DEAD (24 HRS)
46. NAME AND ADDRESS OF CERTIFIER (PHYSICIAN, MEDICAL EXAMINER OR CORONER) (TYPE OR PRINT)

CAUSE OF DEATH

47. IMMEDIATE CAUSE (ENTER ONLY ONE CAUSE PER LINE FOR (A), (B) AND (C)): (A) CHF — INTERVAL BETWEEN ONSET AND DEATH
DUE TO, OR AS A CONSEQUENCE OF: (B) — INTERVAL BETWEEN ONSET AND DEATH
DUE TO, OR AS A CONSEQUENCE OF: (C) — INTERVAL BETWEEN ONSET AND DEATH
48. OTHER SIGNIFICANT CONDITIONS — CONDITIONS CONTRIBUTING TO DEATH BUT NOT RELATED TO CAUSE GIVEN ABOVE
49. AUTOPSY? (YES/NO): No
50. WAS CASE REFERRED TO MEDICAL EXAMINER OR CORONER? (YES/NO): No
51. ACC., SUICIDE, HOM., UNDET. OR PENDING INVEST. (SPECIFY)
52. INJURY DATE (MO DAY YR)
53. HOUR OF INJURY (24 HRS)
54. DESCRIBE HOW INJURY OCCURED
55. INJURY AT WORK? (YES/NO)
56. PLACE OF INJURY (AT HOME, FARM, STREET, FACTORY, OFFICE BLDG., ETC.) (SPECIFY)
57. LOCATION — STREET OR RFD NO., CITY, TOWN, STATE

IMMEDIATE CAUSE STATING UNDERLYING CAUSE LAST

58. REGISTRAR — SIGNATURE: X M. Luther MD
59. DATE RECEIVED (MO DAY YR): JUL 24 1987

I HEREBY CERTIFY that the foregoing is a true, full and correct copy of the original Certificate of Death on file in this office.

C0040290

SPOKANE COUNTY HEALTH DISTRICT
West 1101 College Avenue
Spokane, WA 99201

Thurston L. Luther
Health Officer and Registrar

Spokane, WA AUG 03 1987

DSHS 9-641A (11/85)

THIS IS A CERTIFIED COPY OF THE RECORD ON FILE WITH VITAL RECORDS. CERTIFIED COPIES MUST HAVE THE OFFICIAL SEAL

ED_005351_00000368-00325

PATCH II

W.R. Grace Fall 2000 Document Production Target Sheet

- [ ] Notice
  - [ ] Testing
  - [ ] Agency
- [ ] Libby Ore/Operations
- [x] Libby All Other
- [ ] Expanding Plant (see below)
- [ ] Non-Grace Expanding Plant
- [ ] Attic Insulation
- [ ] Agricultural/ Horticultural Products
- [ ] Other Consumer Products
- [ ] Workers Comp
- [ ] Medical Records and Other Personal Confidental
- [ ] Privilege
- [ ] Trade Secret

- [ ] All
- [ ] Invoices

- [ ] Albany, N.Y.
- [ ] Atlanta, Georgia
- [ ] Birmingham, Alabama
- [ ] Boca Raton, Florida
- [ ] Chicago, Illinois (Blue Island)
- [ ] Dallas, Texas
- [ ] Dearborn, Michigan
- [ ] Denver, Colorado
- [ ] Easthampton, Mass.
- [ ] Ellwood City, Penn.
- [ ] Enoree, S. Carolina
- [ ] Hialeah, Florida
- [ ] High Point, N. Carolina
- [ ] Irondale, Alabama
- [ ] Jacksonville, Florida
- [ ] Kansas City, Missouri
- [ ] Kearny, S. Carolina
- [ ] Kenilworth Ave. Washington D.C.
- [ ] Los Angeles, Calif.
- [ ] Milwaukee, Wisconsin
- [ ] Minneapolis, Minn. (Western Min. Prod.)
- [ ] Muirkirk, Maryland (Beltsville)
- [ ] Nashville, Tennessee
- [ ] Newark, California
- [ ] New Castle, Pennsylvania
- [ ] New Orleans, Louisiana
- [ ] North Billerica, Mass.
- [ ] North Little Rock, Ark.
- [ ] Oklahoma City, Oklahoma
- [ ] Omaha, Nebraska (Western Min. Prod.)
- [ ] Phoenix, Arizona (Glendale)
- [ ] Pompano Beach, Florida
- [ ] Portland, Oregon
- [ ] Rio Piedras, Puerto Rico
- [ ] Sacramento, Calif.
- [ ] San Antonio, Texas
- [ ] Santa Ana, California
- [ ] Savannah, Georgia
- [ ] Sharpsburg, Penn.
- [ ] Spokane, Washington
- [ ] St. Louis, Missouri
- [ ] Tampa, Florida
- [ ] Travelers Rest, S. Carolina
- [ ] Trenton, New Jersey (East Trenton)
- [ ] Utica, New York
- [ ] Weedsport, N. Y. (Brutus)
- [ ] West Chicago, Illinois
- [ ] Wilder, Kentucky (Newport)

- [ ] Canadian Expanding plants

Grace Box No _____

Rkpr Box No _____

F3

V83A

TYPE OR PRINT IN UNFADING BLACK INK SEE HANDBOOK FOR INSTRUCTIONS

MONTANA CERTIFICATE OF DEATH

DUPLICATE FOR CLERK AND RECORDER

LOCAL FILE NUMBER — STATE FILE NUMBER

DECEASED

NAME OF DECEASED - FIRST 1A. [illegible]	MIDDLE NAME 1B. JOHN	LAST NAME 1C. YANKEY	SEX 2. Male	DATE OF DEATH (MONTH, DAY, YEAR) 3. April 20, 1977
RACE (WHITE, NEGRO, AMERICAN INDIAN, ETC. (SPECIFY) 4. White	AGE — LAST BIRTHDAY (YEARS) 5a. 55	UNDER 1 YEAR: MOS. 5b. / DAYS	UNDER 1 DAY: HOURS 5c. / MIN.	DATE OF BIRTH (MONTH, DAY, YEAR) 6. Aug. 20, 1920 — COUNTY OF DEATH 7a. Lincoln
CITY, TOWN, OR LOCATION OF DEATH 7b. Libby	INSIDE CITY LIMITS (SPECIFY YES OR NO) 7c. No	HOSPITAL OR OTHER INSTITUTION — NAME (IF NOT IN EITHER, GIVE STREET AND NUMBER) 7d. Residence, Rt. 2, Box 730, Libby, Montana		
STATE OF BIRTH (IF NOT IN U.S.A., NAME COUNTRY) 8. Michigan	CITIZEN OF WHAT COUNTRY 9. USA	MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (SPECIFY) 10. Married	SURVIVING SPOUSE (IF WIFE, GIVE MAIDEN NAME) 11. Clara K. Meyer	
SOCIAL SECURITY NUMBER 12. 394-14-1308	USUAL OCCUPATION (GIVE KIND OF WORK DONE DURING MOST OF WORKING LIFE, EVEN IF RETIRED) 13a. Welder	KIND OF BUSINESS OR INDUSTRY 13b. Construction products		
RESIDENCE — STATE 14a. Montana	COUNTY 14b. Lincoln	CITY, TOWN, OR LOCATION 14c. Libby	INSIDE CITY LIMITS (SPECIFY YES OR NO) 14d. NO	STREET AND NUMBER 14e. Rt. 2, Box 730

USUAL RESIDENCE WHERE DECEASED LIVED. IF DEATH OCCURRED IN INSTITUTION, GIVE RESIDENCE BEFORE ADMISSION.

PARENTS

FATHER — NAME (FIRST, MIDDLE, LAST) 15. Edward K. Yankey	MOTHER — MAIDEN NAME (FIRST, MIDDLE, LAST) 16. Rebecca Staschke
INFORMANT — NAME 17a. Clara K. Yankey	MAILING ADDRESS (STREET OR R.F.D. NO., CITY OR TOWN, STATE, ZIP) 17b. Rt. 2, Box 730, Libby, Montana 59923

CAUSE

PART I. DEATH WAS CAUSED BY: (ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), AND (c))

18. IMMEDIATE CAUSE (a) Cardiac Arrest — APPROXIMATE INTERVAL BETWEEN ONSET AND DEATH: Immediate

DUE TO, OR AS A CONSEQUENCE OF: (b)

DUE TO, OR AS A CONSEQUENCE OF: (c)

CONDITIONS, IF ANY, WHICH GAVE RISE TO IMMEDIATE CAUSE (a), STATING THE UNDERLYING CAUSE LAST

PART II. OTHER SIGNIFICANT CONDITIONS: CONDITIONS CONTRIBUTING TO DEATH BUT NOT RELATED TO CAUSE GIVEN IN PART I (a) — AUTOPSY (YES OR NO) 19a. NO — IF YES WERE FINDINGS CONSIDERED IN DETERMINING CAUSE OF DEATH 19b.

ACCIDENT, SUICIDE, HOMICIDE, OR UNDETERMINED (SPECIFY) 20a.	DATE OF INJURY (MONTH, DAY, YEAR) 20b.	HOUR 20c. M.	HOW INJURY OCCURRED (ENTER NATURE OF INJURY IN PART I OR PART II, ITEM 18) 20d.
INJURY AT WORK (SPECIFY YES OR NO) 20e.	PLACE OF INJURY AT HOME, FARM, STREET, FACTORY, OFFICE BLDG., ETC. (SPECIFY) 20f.	LOCATION (STREET OR R.F.D. NO., CITY OR TOWN, STATE) 20g.	

CERTIFIER

CERTIFICATION — PHYSICIAN: I ATTENDED THE DECEASED FROM (MONTH, DAY, YEAR) 21a. TO (MONTH, DAY, YEAR) 21b. AND LAST SAW HIM/HER ALIVE ON (MONTH, DAY, YEAR) 21c. I DID/DID NOT VIEW THE BODY AFTER DEATH. 21d. DEATH OCCURRED (HOUR) 21e. AT THE PLACE, ON THE DATE, AND, TO THE BEST OF MY KNOWLEDGE, DUE TO THE CAUSE(S) STATED.

CERTIFICATION — CORONER: ON THE BASIS OF THE EXAMINATION OF THE BODY AND/OR THE INVESTIGATION, IN MY OPINION, DEATH OCCURRED ON THE DATE AND DUE TO THE CAUSE(S) STATED. 22a. 4/20/77 HOUR OF DEATH 6:30 p.m. THE DECEDENT WAS PRONOUNCED DEAD MONTH 4 DAY 20 77 AT HOUR 22c. 6:30 p.m.

CERTIFIER — NAME (TYPE OR PRINT) 23a. Mel Vial — SIGNATURE 23b. Mel Vial — CORONER (TITLE) — DATE SIGNED (MONTH, DAY, YEAR) 23c. 4/24/77

MAILING ADDRESS — CERTIFIER 24. (STREET OR R.F.D. NO.) P.O. Box 750 (CITY OR TOWN) Libby Montana 59923

BURIAL

BURIAL, CREMATION, REMOVAL (SPECIFY) 25A. Removal/Burial	CEMETERY OR CREMATORY — NAME 25B. Roselawn Memorial Park	LOCATION — CITY OR TOWN 25C. LaSalle	STATE Michigan
DATE (MONTH, DAY, YEAR) 25D. April 25, 1977	MORTUARY — NAME AND ADDRESS (STREET OR R.F.D. NO., CITY OR TOWN, STATE, ZIP) 26A. Vial Funeral Home, P.O. Box 750, Libby, Montana 59923		
FUNERAL DIRECTOR OR MORTICIAN — SIGNATURE 26B. Mel Vial	LOCAL REGISTRAR — SIGNATURE 27A. Jane Nelson	DATE RECEIVED BY LOCAL REGISTRAR 27B. April 21, 1977	

STATE OF MONTANA)
COUNTY OF LINCOLN) SS

I, ELEANOR L. VAUGHN, Clerk and Recorder, in and for Lincoln County, Montana, hereby certify that this is a true copy of a certain DEATH CERTIFICATE issued for

Edward John Yankey

as it appears on the records in my office. FILE NO. 4737

Witness my hand and seal of said County, this 29 day of April, 1977.

V88A

TYPE OR PRINT IN UNFADING BLACK INK SEE HANDBOOK FOR INSTRUCTIONS

Records & Statistics, Montana State Department of Health

MONTANA CERTIFICATE OF DEATH

DUPLICATE FOR CLERK AND RECORDER

LOCAL FILE NUMBER | STATE FILE NUMBER

DECEASED

1. DECEASED—NAME (FIRST, MIDDLE, LAST): JACK nmn YOUNG
2. SEX: Male
3. DATE OF DEATH (MONTH, DAY, YEAR): June 19, 1977
4. RACE (WHITE, NEGRO, AMERICAN INDIAN, ETC.) (SPECIFY): White
5. AGE—LAST BIRTHDAY (YEARS): 62
5b. UNDER 1 YEAR: MOS. / DAYS
5c. UNDER 1 DAY: HOURS / MIN.
6. DATE OF BIRTH (MONTH, DAY, YEAR): Dec. 19,1914
7a. COUNTY OF DEATH: Lincoln
7b. CITY, TOWN, OR LOCATION OF DEATH: Libby
7c. INSIDE CITY LIMITS (SPECIFY YES OR NO): Yes
7d. HOSPITAL OR OTHER INSTITUTION—NAME (IF NOT IN EITHER, GIVE STREET AND NUMBER): St. John Luthern Hospital
8. STATE OF BIRTH (IF NOT IN U.S.A., NAME COUNTRY): West Virginia
9. CITIZEN OF WHAT COUNTRY: USA
10. MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (SPECIFY): Divorced
11. SURVIVING SPOUSE (IF WIFE, GIVE MAIDEN NAME): None
12. SOCIAL SECURITY NUMBER: 516-20-5053
13a. USUAL OCCUPATION (GIVE KIND OF WORK DONE DURING MOST OF WORKING LIFE, EVEN IF RETIRED): Laborer
13b. KIND OF BUSINESS OR INDUSTRY: Railroad

USUAL RESIDENCE WHERE DECEASED LIVED. IF DEATH OCCURRED IN INSTITUTION, GIVE RESIDENCE BEFORE ADMISSION.

14a. RESIDENCE—STATE: Montana
14b. COUNTY: Lincoln
14c. CITY, TOWN, OR LOCATION: Troy
14d. INSIDE CITY LIMITS (SPECIFY YES OR NO): No
14e. STREET AND NUMBER: Box 19

PARENTS

15. FATHER—NAME (FIRST, MIDDLE, LAST): Albert Rufus Young
16. MOTHER—MAIDEN NAME (FIRST, MIDDLE, LAST): Leonettie unk.
17a. INFORMANT—NAME: Quentin Young
17b. MAILING ADDRESS (STREET OR R.F.D. NO., CITY OR TOWN, STATE, ZIP): Box 503, Libby, Montana 59923

CAUSE

PART I. DEATH WAS CAUSED BY: (ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), AND (c))

18. IMMEDIATE CAUSE (a) Myocardial Infarction — APPROXIMATE INTERVAL BETWEEN ONSET AND DEATH: 10 min
DUE TO, OR AS A CONSEQUENCE OF:
(b) Coronary artery disease — yrs
DUE TO, OR AS A CONSEQUENCE OF:
(c)

CONDITIONS, IF ANY, WHICH GAVE RISE TO IMMEDIATE CAUSE (a), STATING THE UNDERLYING CAUSE LAST.

PART II. OTHER SIGNIFICANT CONDITIONS: CONDITIONS CONTRIBUTING TO DEATH BUT NOT RELATED TO CAUSE GIVEN IN PART I (a): Malnutrition

19a. AUTOPSY (YES OR NO): No
19b. IF YES WERE FINDINGS CONSIDERED IN DETERMINING CAUSE OF DEATH?

20a. ACCIDENT, SUICIDE, HOMICIDE, OR UNDETERMINED (SPECIFY):
20b. DATE OF INJURY (MONTH, DAY, YEAR):
20c. HOUR: M.
20d. HOW INJURY OCCURRED (ENTER NATURE OF INJURY IN PART I OR PART II, ITEM 18):
20e. INJURY AT WORK (SPECIFY YES OR NO):
20f. PLACE OF INJURY (AT HOME, FARM, STREET, FACTORY, OFFICE BLDG., ETC.) (SPECIFY):
20g. LOCATION (STREET OR R.F.D. NO., CITY OR TOWN, STATE):

CERTIFIER

21a. CERTIFICATION—PHYSICIAN: I ATTENDED THE DECEASED FROM (MONTH, DAY, YEAR): 6 18 77
21b. TO (MONTH, DAY, YEAR): 6 19 77
21c. AND LAST SAW HIM/HER ALIVE ON (MONTH, DAY, YEAR): 6 19 77
21d. I DID/DID NOT VIEW THE BODY AFTER DEATH: did not
21e. DEATH OCCURRED (HOUR): 11:50p M. AT THE PLACE, ON THE DATE, AND, TO THE BEST OF MY KNOWLEDGE, DUE TO THE CAUSE(S) STATED.

22a. CERTIFICATION—CORONER: ON THE BASIS OF THE EXAMINATION OF THE BODY AND/OR THE INVESTIGATION, IN MY OPINION, DEATH OCCURRED ON THE DATE AND DUE TO THE CAUSE(S) STATED. HOUR OF DEATH: M.
22b. THE DECEDENT WAS PRONOUNCED DEAD (MONTH, DAY, YEAR):
22c. AT HOUR: M.

23a. CERTIFIER—NAME (TYPE OR PRINT): Dr. W. T. Matthews
23b. SIGNATURE (DEGREE OR TITLE): W.T.Matthews, M.D.
23c. DATE SIGNED (MONTH, DAY, YEAR): 6 19 77
24. MAILING ADDRESS—CERTIFIER: STREET OR R.F.D. NO.: 402 Montana Ave. CITY OR TOWN: Libby STATE: Montana ZIP: 59923

BURIAL

25A. BURIAL, CREMATION, REMOVAL (SPECIFY): Burial
25B. CEMETERY OR CREMATORY—NAME: City of Libby Cemetery
25C. LOCATION: CITY OR TOWN: Libby STATE: Montana
25D. DATE (MONTH, DAY, YEAR): June 22, 1977
26A. MORTUARY—NAME AND ADDRESS (STREET OR R.F.D. NO., CITY OR TOWN, STATE, ZIP): Vial Funeral Home, P.O. Box 750, Libby, Montana 59923
26B. FUNERAL DIRECTOR OR MORTICIAN—SIGNATURE: Niles Nelson
27A. LOCAL REGISTRAR—SIGNATURE: Janet Deshner
27B. DATE RECEIVED BY LOCAL REGISTRAR: 6-19-77

STATE OF MONTANA)
SS
COUNTY OF LINCOLN)

I, JANET B.F. SIEGEL, Clerk & Recorder, in and for Lincoln County, Montana, hereby certify that this is a true copy of a certain DEATH CERTIFICATE issued for Jack Young as it appears on the records in my office, FILE NO. 4254

Witness my hand and seal of said County, this 18th day of July, 1983.

Janet B. F. Siegel
JANET B.F. SIEGEL, Clerk and Recorder
Lincoln County, Montana

WRG00372945
ED_005351_00000368-00329

FORM V.S. 3 (1988 revision)

MONTANA CERTIFICATE OF DEATH

copy to HAE 8/31/89

Local File Number | State File Number

DECEDENT

1. DECEDENT'S NAME (First): Willard
(Middle): Fortin
(Last): ZWANG
2. SEX: male
3. DATE OF DEATH (Month, Day, Year): July 28, 1989

4. RACE — American Indian, Black White, etc. (Specify): white
5a. AGE — Last Birthday (Years): 64
5b. UNDER 1 YEAR: Months / Days
5c. UNDER 1 DAY: Hours / Minutes
6. DATE OF BIRTH (Month, Day, Year): May 4, 1925
7a. COUNTY OF DEATH: Lincoln

7b. PLACE OF DEATH (Check only one)
HOSPITAL: ☐ Inpatient ☒ ER/Outpatient ☐ DOA
OTHER: ☐ Nursing Home ☐ Residence ☐ Other (Specify)

7c. FACILITY NAME (If not institution, give street and number): St. John Lutheran Hospital
7d. CITY, TOWN, OR LOCATION OF DEATH: Libby, Montana

8. BIRTHPLACE (City and State or Foreign Country): Republic, Washington
9. MARITAL STATUS: ☐ Never Married ☐ Widowed ☒ Married ☐ Divorced
10. SURVIVING SPOUSE (If wife, give maiden surname): Florence Fennessy

11. SOCIAL SECURITY NUMBER: 534-12-6280
12a. DECEDENT'S USUAL OCCUPATION (Give kind of work done during most of working life. Do not use retired.): Pharmacist
12b. KIND OF BUSINESS/INDUSTRY: Pharmacy
13. WAS DECEDENT EVER IN U.S. ARMED FORCES? (Yes or no): Yes

14a. RESIDENCE — STATE: Montana
14b. COUNTY: Lincoln
14c. CITY, TOWN, OR LOCATION: Libby
14d. STREET NUMBER: 1105 Nevada Ave.
14e. INSIDE CITY LIMITS? (Yes or no): yes
14f. ZIP CODE: 59923
15. ANCESTRY — Mexican, Puerto Rican, Cuban, African, English, Irish-German, Hmong, etc. (Specify): German French
16. DECEDENT'S EDUCATION (Specify only highest grade completed)
Elementary/Secondary (0-12): 12
College (1-4 or 5+): 5

PARENTS

17. FATHER'S NAME (First, Middle, Last): Harold Zwang
18. MOTHER'S NAME (First, Middle, Maiden Surname): Jeannette Fortin

INFORMANT

19a. INFORMANT'S NAME (Type/Print): Florence Zwang
19b. MAILING ADDRESS (Street and Number or Rural Route Number, City or Town, State, Zip Code): 1105 Nevada Ave. Libby, Montana 59923

DISPOSITION

20a. METHOD OF DISPOSITION: XX Burial ☐ Cremation ☐ Removal from State ☐ Other (Specify)
20b. PLACE OF DISPOSITION (Name of cemetery, crematory, or other place): City of Libby Cemetery
20c. LOCATION — City or Town, State: Libby, Montana

21a. SIGNATURE OF FUNERAL SERVICE LICENSEE OR OTHER PERSON IN CHARGE OF DISPOSITION: Niles F. Nelson
21b. MONTANA LICENSE NUMBER (of Licensee): 389
22. NAME AND ADDRESS OF FACILITY: Vial Funeral Home, Inc. P.O.Box 750 Libby, Mt. 59923

CAUSE OF DEATH

23. PART I. Enter the diseases, injuries, or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock, or heart failure. List only one cause on each line. (See Instructions on other side)

Approximate Interval Between Onset and Death

IMMEDIATE CAUSE (Final disease or condition resulting in death): a. Cancer of the urinary bladder
DUE TO (OR AS A CONSEQUENCE OF):
Sequentially list conditions if any, leading to immediate cause. Enter **Underlying Cause** (Disease or injury that initiated events resulting in death) **Last**.
b. with mets to abdominal
DUE TO (OR AS A CONSEQUENCE OF):
c. metastasis
DUE TO (OR AS A CONSEQUENCE OF):
d.

PART II. Other significant conditions contributing to death but not resulting in the underlying cause given in Part I.
Hypertension
C.O.P.D.

24a. WAS AN AUTOPSY PERFORMED? (Yes or no): no
24b. WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETION OF CAUSE OF DEATH? (Yes or no): n/a
25. WAS CASE REFERRED TO CORONER? (Yes or no): no

26. MANNER OF DEATH: XX Natural ☐ Pending Investigation ☐ Accident ☐ Could not be Determined ☐ Suicide ☐ Homicide
27a. DATE OF INJURY (Month, Day, Year)
27b. TIME OF INJURY M
27c. INJURY AT WORK? (Yes or no)
27d. DESCRIBE HOW INJURY OCCURRED
27e. PLACE OF INJURY — At home, farm, street, factory, office building, etc. (Specify)
27f. LOCATION (Street and Number or Rural Route Number, City or Town, State)

CERTIFIER

28a. TO BE COMPLETED BY CERTIFYING PHYSICIAN ONLY. To the best of my knowledge, death occurred at the time, date and place and due to the cause(s) stated.
(Signature and Title) Roger H. Brus M.D.
28b. DATE SIGNED (Month, Day, Year): 7/28/89
28c. HOUR OF DEATH: 0905 M

29a. TO BE COMPLETED BY CORONER ONLY. On the basis of examination and/or investigation in my opinion death occurred at the time, date and place and due to the cause(s) and manner as stated.
(Signature and Title)
29b. DATE SIGNED (Month, Day, Year)
29c. HOUR OF DEATH M

28d. NAME OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER (Type or Print)
29d. DATE PRONOUNCED DEAD (Month, Day, Year)
29e. PRONOUNCED DEAD (Hour) M

30. NAME AND ADDRESS OF CERTIFIER (PHYSICIAN OR CORONER) (Type or Print): Roger H. Brus MD 111 E. Cedar St. Libby, Mt. 59923

REGISTRAR

31a. LOCAL REGISTRAR'S SIGNATURE: Sherry L. Hawks
31b. DATE FILED (Month, Day, Year): August 1, 1989

CLERK & RECORDER

STATE of MONTANA
COUNTY of LINCOLN

WRG00372946
ED_005351_00000368-00330

V.S. 3A—0-57—10M
STATE OF MONTANA

DUPLICATE FOR CLERK AND RECORDER

STATE BOARD OF HEALTH
Bureau of Vital Statistics

CERTIFICATE OF DEATH

Birth No. State File No.

TYPE OR WRITE PLAINLY WITH UNFADING INK

This Margin Reserved for Binding

1. PLACE OF DEATH a. COUNTY: Lincoln
b. CITY, TOWN, OR LOCATION: Libby
c. LENGTH OF STAY IN 1b: 22 hrs
d. NAME OF HOSPITAL OR INSTITUTION (If not in hospital, give street address): Lincoln Co Nursing Home
e. IS PLACE OF DEATH INSIDE CITY LIMITS? YES [X] NO [ ]

2. USUAL RESIDENCE (Where deceased lived. If institution: Residence before admission) a. STATE: Montana b. COUNTY: Lincoln
c. CITY, TOWN, OR LOCATION: Eureka
d. STREET ADDRESS: not known
e. IS RESIDENCE INSIDE CITY LIMITS? YES [ ] NO [ ] X
f. IS RESIDENCE ON A FARM? YES [ ] NO [ ] X

3. NAME OF DECEASED (Typewr. print) First: James Middle: Martin Last: VanHorn
4. DATE OF DEATH Month Day Year: 11-18-62
5. SEX: male
6. COLOR OR RACE: white
7. MARRIED [ ] NEVER MARRIED [ ] WIDOWED [X] DIVORCED [ ]
8. DATE OF BIRTH: 1-13-1886
9. AGE (In years last birthday): 76
IF UNDER 1 YEAR OR UNDER 24 HRS. Months Days Hours Min.
10a. USUAL OCCUPATION (Give kind of work done during most of working life, even if retired): woodswork
10b. KIND OF BUSINESS OR INDUSTRY: lumbering
11. BIRTHPLACE (State or foreign country): Iowa
12. CITIZEN OF WHAT COUNTRY? USA
13. FATHER'S NAME: Martin Van Horn
14. MOTHER'S MAIDEN NAME: Helen
15. WAS DECEASED EVER IN U. S. ARMED FORCES? (Yes, no, or unknown): no (If yes, give war or dates of service)
16. SOCIAL SECURITY NO.: 543-14-8128
17. INFORMANT: Lionel VanHorn, Libby Address

MEDICAL CERTIFICATION

18. CAUSE OF DEATH (Enter only one cause per line for (a), (b), and (c).)
PART I. DEATH WAS CAUSED BY:
IMMEDIATE CAUSE (a) Coronary Occluston
Conditions, if any, which gave rise to above cause (a), stating the underlying cause last: DUE TO (b) Hypertension
DUE TO (c) Old age
INTERVAL BETWEEN ONSET AND DEATH: sudden
PART II. OTHER SIGNIFICANT CONDITIONS CONTRIBUTING TO DEATH BUT NOT RELATED TO THE TERMINAL DISEASE CONDITION GIVEN IN PART I(a).
19. WAS AUTOPSY PERFORMED? YES [ ] NO [ ]
20a. ACCIDENT [ ] SUICIDE [ ] HOMICIDE [ ]
20b. DESCRIBE HOW INJURY OCCURRED. (Enter nature of injury in Part I or Part II of item 18.)
20c. TIME OF INJURY Hour a. m. p. m. Month, Day, Year
20d. INJURY OCCURRED WHILE AT WORK [ ] NOT WHILE AT WORK [ ]
20e. PLACE OF INJURY (e. g., in or about home, farm, factory, street, office bldg., etc.)
20f. CITY, TOWN, OR LOCATION COUNTY STATE
21. I attended the deceased from 11-15-62 to 11-18-62 and last saw her/him alive on 11-18-62
Death occurred at 11am m on the date stated above, and to the best of my knowledge, from the causes stated.
22a. SIGNATURE: J.M Cairn, M.D. (Degree or title)
22b. ADDRESS: Libby, Montana
22c. DATE SIGNED: 12-12-62
23a. BURIAL, CREMATION, REMOVAL (Specify): burial
23b. DATE: 11-21-62
23c. NAME OF CEMETERY OR CREMATORY: City of Libby Cem.
23d. LOCATION (City, town, or county) (State): Libby, Montana
24. FUNERAL DIRECTOR: Gompf Cutler F H
ADDRESS: Libby 619
25. DATE REC'D BY LOCAL REG.: 12-18-62
26. REGISTRAR'S SIGNATURE: Joanne Kershner

STATE OF MONTANA)
SS
COUNTY OF LINCOLN)

I, JANET B.F. SIEGEL, Clerk & Recorder, in and for Lincoln County, Montana, hereby certify that this is a true copy of a certain DEATH CERTIFICATE issued for James Martin VanHorn as it appears on the records in my office, FILE NO. 3285

Witness my hand and seal of said County, this 27th day of July, 1983.

Janet BF Siegel
JANET B.F. SIEGEL, Clerk and Recorder
Lincoln County, Montana

WRG00373085
ED_005351_00000368-00331

GRACE

Zonolite
Construction Products Division

TO: Ann Andreosatos

DATE: November 5, 1986

FROM: Rayetta Morrison

SUBJECT: Perley Vatland
Life Insurance

Per our conversation yesterday, attached please find insurance forms which we had on file in Libby. Also attached is a copy of Mr. Vatland's death certificate.

Rayetta

Attachments

Ann is checking 10/28/86

9/17/54 - Hired
Last Worked 4/18/73
Grace Pension 12/1/73
Workers Comp. 4/18/73
Birth Date - 6/12/12
Died 9/6/74 - age 62
$ 9,000 Life Ins.

Called John Starke 11/5/86
F/U - 11/17/86

C00400BB

C00400B9

WRG00373086

ED_005351_00000368-00332

VGS

TYPE OR PRINT IN UNFADING BLACK INK SEE HANDBOOK FOR INSTRUCTIONS

CERTIFICATE OF DEATH

ORIGINAL FOR STATE REGISTRAR

STATE FILE NUMBER | STATE FILE NUMBER

DECEASED

DECEASED—NAME (FIRST, MIDDLE, LAST): Perley (NMI) VATLAND

SEX: Male

DATE OF DEATH (MONTH, DAY, YEAR): September 6, 1974

RACE (WHITE, NEGRO, AMERICAN INDIAN, ETC. (SPECIFY)): White

AGE—LAST BIRTHDAY (YEARS): 62

UNDER 1 YEAR: MOS. DAYS

UNDER 1 DAY: HOURS MIN.

DATE OF BIRTH (MONTH, DAY, YEAR): June 12, 1912

COUNTY OF DEATH: Lincoln

CITY, TOWN, OR LOCATION OF DEATH: Libby

INSIDE CITY LIMITS (SPECIFY YES OR NO): Yes

HOSPITAL OR OTHER INSTITUTION—NAME (IF NOT IN EITHER, GIVE STREET AND NUMBER): St. John's Lutheran Hospital

STATE OF BIRTH (IF NOT IN U.S.A., NAME COUNTRY): North Dakota

CITIZEN OF WHAT COUNTRY: USA

MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (SPECIFY): Married

SURVIVING SPOUSE (IF WIFE, GIVE MAIDEN NAME): Margaret Rody Vatland

SOCIAL SECURITY NUMBER: 517-20-7115

USUAL OCCUPATION (GIVE KIND OF WORK DONE DURING MOST OF WORKING LIFE, EVEN IF RETIRED): Equipment Operator

KIND OF BUSINESS OR INDUSTRY: Mining

USUAL RESIDENCE WHERE DECEASED LIVED. IF DEATH OCCURRED IN INSTITUTION, GIVE RESIDENCE BEFORE ADMISSION.

RESIDENCE—STATE: Montana

COUNTY: Lincoln

CITY, TOWN, OR LOCATION: Libby

INSIDE CITY LIMITS (SPECIFY YES OR NO): Yes

STREET AND NUMBER: 1306 Minnesota Ave.

PARENTS

FATHER—NAME (FIRST, MIDDLE, LAST): Matthew Vatland

MOTHER—MAIDEN NAME (FIRST, MIDDLE, LAST): Raghnild Simidesang

INFORMANT—NAME: Mrs. Margaret Vatland

MAILING ADDRESS (STREET OR R.F.D. NO., CITY OR TOWN, STATE, ZIP): 1306 Minnesota, Libby, Montana 59923

CAUSE

PART I. DEATH WAS CAUSED BY: (ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), AND (c))

APPROXIMATE INTERVAL BETWEEN ONSET AND DEATH

IMMEDIATE CAUSE (a): [illegible]

DUE TO, OR AS A CONSEQUENCE OF: (b) [illegible]

DUE TO, OR AS A CONSEQUENCE OF: (c) [illegible]

CONDITIONS, IF ANY, WHICH GAVE RISE TO IMMEDIATE CAUSE (a), STATING THE UNDERLYING CAUSE LAST

PART II. OTHER SIGNIFICANT CONDITIONS: CONDITIONS CONTRIBUTING TO DEATH BUT NOT RELATED TO CAUSE GIVEN IN PART I (a)

AUTOPSY (YES OR NO): no

IF YES WERE FINDINGS CONSIDERED IN DETERMINING CAUSE OF DEATH

ACCIDENT, SUICIDE, HOMICIDE, OR UNDETERMINED (SPECIFY)

DATE OF INJURY (MONTH, DAY, YEAR)

HOUR

HOW INJURY OCCURRED (ENTER NATURE OF INJURY IN PART I OR PART II, ITEM 19)

INJURY AT WORK (SPECIFY YES OR NO)

PLACE OF INJURY AT HOME, FARM, STREET, FACTORY, OFFICE BLDG., ETC. (SPECIFY)

LOCATION (STREET OR R.F.D. NO., CITY OR TOWN, STATE)

CERTIFIER

CERTIFICATION—PHYSICIAN: I ATTENDED THE DECEASED FROM (MONTH, DAY, YEAR): [illegible] 74 TO (MONTH, DAY, YEAR): [illegible] 74

AND LAST SAW HIM/HER ALIVE ON (MONTH, DAY, YEAR): [illegible] 74

I DID/DID NOT VIEW THE BODY AFTER DEATH.

DEATH OCCURRED (HOUR) AT THE PLACE, ON THE DATE, AND, TO THE BEST OF MY KNOWLEDGE, DUE TO THE CAUSE(S) STATED.

CERTIFICATION—CORONER: ON THE BASIS OF THE EXAMINATION OF THE BODY AND/OR THE INVESTIGATION, IN MY OPINION, DEATH OCCURRED ON THE DATE AND DUE TO THE CAUSE(S) STATED.

HOUR OF DEATH

THE DECEDENT WAS PRONOUNCED DEAD (MONTH, DAY, YEAR)

AT HOUR

CERTIFIER—NAME (TYPE OR PRINT): Paul J. Seifert, Jr., M.D.

SIGNATURE (DEGREE OR TITLE): [illegible]

DATE SIGNED (MONTH, DAY, YEAR): Sept. 9, 1974

MAILING ADDRESS—CERTIFIER: P.O. Box 769n, Libby, Mt. 59923

Records & Statistics, Montana State Department of Health

WRG00373087

ED_005351_00000368-00333

August 10, 1973

Mr. Wes Noel
Connor Co., Inc.
P. O. Box 2024
Great Falls, Montana 59401

Dear Wes:

Enclosed is Employer's First Report and Employee's Claim for Compensation filed with us today by Perley Vatland. Also enclosed is a report on this man by Dr. M. O. Burns of Kalispell.

Mr. Vatland is claiming compensation due to disability caused by asbestosis. We will be looking forward to working with you on this claim.

Very truly yours

CONSTRUCTION PRODUCTS DIVISION
W. R. GRACE & CO.

By:

E. D. Lovick
Administrative Assistant

EDL/jbr

enc.

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WORKMEN'S COMPENSATION DIVISION

Department of Labor and Industry
815 Front Street
Helena, Montana 59601

CASE No. _____

Firm No. 2503

EMPLOYER'S FIRST REPORT OF OCCUPATIONAL INJURY OR DISEASE

INSTRUCTIONS—Employer must complete form at once after every accident or occupational disease which causes loss of time from work or requires medical attention and mail to Workmen's Compensation Division, Helena, Montana. Form must be signed in pen and ink. ALL QUESTIONS MUST BE ANSWERED FULLY. This form contains all items requested on OSHA Form No. 101, "Supplementary Record of Occupational Injuries and Illnesses."

INJURED EMPLOYEE

Full name of injured employee Perley Vatland Occupation Mill Shift Tester
Home address 1306 Minnesota Avenue, Libby (Street, City) How long has he been in your employ? 18 years
Social Security No. 517-20-7115 Sex M Age 61 Married [X] Single [ ]
Department Mill (Enter name of department or division in which the injured person is regularly employed, even though he may have been temporarily working in another department at the time of injury.)

EARNINGS

Monthly Wage _____, or Weekly Wage _____, or Daily Wage _____, or Hourly Wage 4.06
Receive board? Yes [ ] No [XX] Receive room? Yes [ ] No [X] Days worked per week 5 Hours worked per week 8 Employee's pay period? Monthly [ ], Semi-monthly [X], Weekly [ ]. List employee's gross earnings and date of last 4 pay periods
1. _____ (Date/Amount) 2. _____ (Date/Amount) 3. _____ (Date/Amount) 4. _____ (Date/Amount)
List Payroll Classification Code under which employee's wages were reported _____

ACCIDENT AND INJURY

Describe in full how accident happened and GIVE CAUSE—Tell what employee was doing when injured:

Nature or extent of injury or illness _____ (Cut-Fracture) Part of body affected _____ (Leg-Arm-Back-Head)
Did employee die? Yes [ ] No [X]
Name of witnesses to accident 1 _____ 2 _____
Date of injury or initial diagnosis of occupational illness Mo. Day Year Hour _____ A.M. _____ P.M.
Was employee injured in course of employment? Yes [ ] No [ ]
Place where accident occurred
our mill, 12 miles north of Libby (Address, City) Lincoln (County)
Was place of accident or exposure on employer's premises? Yes [X] No [ ]
Were you notified of accident? Yes [X] No [ ] How by employee Date _____
Have you reason to question this accident? Yes [ ] No [ ] If "yes," explain fully _____

SAFETY

1. Was the accident caused by an unsafe act on the part of the injured? Yes [ ] No [ ]
2. Was the accident caused by an unsafe condition? Yes [ ] No [ ]
3. What specific device, object or substance caused the injury? _____

MEDICAL ATTENTION

Name of attending physician Malcolm O. Burns, M.D.
Address 203 MedicalArts Bldg. Sunny View Lane, Kalispell, Montana 59901
Was employee hospitalized? Yes [ ] No [X] Name of hospital _____
Address _____

TIME AND WAGE

1. Will the employee return to work before or during his next scheduled shift? Yes [ ] No [X]
2. Will employee lose wages? Yes [X] No [ ]

DIVISION OF WORKMEN'S COMPENSATION

DEPARTMENT OF LABOR AND INDUSTRY
815 Front Street
Helena, Montana 59601

Case No. .....

CLAIM FOR COMPENSATION

Firm No. 2503

Handicapped Certificate No. .....

INSTRUCTIONS—This form must be filled out by the injured person or someone for him. Answer all questions. Return claim immediately.

INJURED EMPLOYEE

I hereby claim the benefits of the Workmen's Compensation Act for an accident that occurred (Date) ....., 19.....
Employee's name Perley Vatland Date of Birth June, 12, 1912 Sex Male
Mailing address 1306 Minn. Ave, Libby, Mont. (City, State) Occupation Shift Tester
Other types of work you have done: 1. Truck Driver 2. Patrol Operator
3. ..... 4. ..... Education: Grade School ☒ High School ☐ College ☐ Other ..... Social Security No. 517-20-7115
Married ☒ Single ☐ How many members in your immediate family? .....

EMPLOYEE'S EARNINGS

Monthly wage ..... or weekly wage ..... or daily wage ..... or hourly wage $406.00
Receive board? Yes ☐ No ☒ Receive room? Yes ☐ No ☒ Days worked per week 6
Hours worked per day 8 Employee's pay period: Monthly ☐ Semi-monthly ☒ Weekly ☐
Bi-weekly ☐ *List gross earnings and date for last 4 pay periods:*
1. ..... Date/Amount 2. ..... Date/Amount 3. ..... Date/Amount 4. ..... Date/Amount

IF PARTIAL WAGE LOSS NOTE DATES AND AMOUNT ON REVERSE SIDE

ACCIDENT AND INJURY

Did you notify your employer of the accident? Yes How? ..... Date .....
Describe accident fully .....
Extent of injury Total Disability Part of body ..... (Leg-Arm-Back-Head)
Witnesses: 1. ..... 2. .....
Have you ever had an industrial injury before? Yes ☐ No ☒
In what state? ..... Type of injury .....

SAFETY

Was the accident caused by an unsafe condition? Yes ☐ No ☐
If yes, please explain .....
Was accident caused by equipment not owned by your employer, or by a person not employed by your employer? Yes ☐ No ☐ If yes, state details .....

MEDICAL ATTENTION

Name of your doctor Malcolm O. Burns
Address 203 Medical Arts Bldg., Sunny View Lane, Kalispell, Mont.
Were you hospitalized? Yes ☐ No ☒ Name of hospital .....

TIME AND WAGE LOSS

Did you return to work before or during your next scheduled shift? Yes ☐ No ☒
Did you lose wages? Yes ☒ No ☐ (If partial wage loss note dates and amount on reverse side)
Date wage loss began 4-18-73, 19..... Released by doctor? Yes ☐ No ☒
Date returned to work ....., 19.....

..... W. R. Grace & Co. Nature of business

WRG00373090
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This Margin Reserved for Binding
WRITE PLAINLY WITH UNFADING INK

V. S. 3-A 220 — Stamps for Clerk and Recorder — State File No.

DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

STANDARD CERTIFICATE OF DEATH

STATE OF MONTANA — Bureau of Vital Statistics

Registrar's No.

1. PLACE OF DEATH:
(a) County Lincoln
(b) City or Town Troy, Montana (Rural) (If outside city or town limits write Rural)
(c) Name of hospital or institution Light and power company's dam
(If not in hospital or institution write street number or location)
(d) Length of stay: In hospital or institution ____ (Specify whether years, months or days) In this community 18 years Libby

2. USUAL RESIDENCE OF DECEASED:
(a) State Montana (b) County Lincoln
(c) City or town Libby (Rural) (If outside city or town limits write Rural)
(d) Street No. ____ (If rural give location)
(e) If foreign born, how long in U. S. A.? ____ years

3. (a) FULL NAME David Vaughn
3. (b) If veteran, name war 1st World
3. (c) Social Security No. 516-03-3398
4. Sex M.
5. Color or race W.
6. (a) Single, widowed, married, divorced Married
6. (b) Name of husband or wife Clara
6. (c) Age of husband or wife if alive 89 years
7. Birth date of deceased August 2 (Month) 1886 (Day) (Year)
8. Age: Years 59 Months 4 Days 13 If less than one day: hr. ____ min.
9. Birthplace Kimmard, Nebraska (City, town or county) (State or foreign country)
10. Usual occupation drilling jack hammer operating & blasting rock holes in rock
11. Industry Montana Light & Power Co.
Father: 12. Name Austin Vaughn
12. Birthplace (City, town or county) (State or foreign country)
Mother: 14. Maiden name
15. Birthplace (City, town or county) (State or foreign country)
16. (a) Informant's own signature Mrs. Clara Vaughn
(b) Address Libby, Mont., PO Bx. 109
17. (a) Burial (Burial, cremation, or removal) (b) Date thereof Dec. 21, 19 (Month) (Day) (Year)
(c) Place: burial or cremation City of Libby
18. (a) Signature of funeral director Lure Dell Compt
(b) Address Libby, Montana
19. (a) 12/21/45 (Date rec'd local registrar) (b) [signature] M.D. (Registrar's signature)

MEDICAL CERTIFICATION
20. Date of death: Month December day 15th. year 1945 hour 10 A.M. minute
21. I hereby certify that I attended the deceased from ____ 19__, to ____ 19__ that I last saw him alive on ____ 19__ and that death occurred on the date and hour stated above.
Immediate cause of death Cerebral Hemorrhage
Due to
Due to
Other conditions (Include pregnancy within 3 months of death)
Major findings: Of operations
Of autopsy

DURATION

PHYSICIAN
Underline the cause to which death should be charged statistically.

22. If death was due to external causes, fill in the following:
(a) Accident, suicide, or homicide (specify)
(b) Date of occurrence 12/15/45
(c) Where did injury occur? (City or town) (County) (State)
(d) Did injury occur in or about home, on farm, in industrial place, in public place? (Specify type of place)
(e) While at work? ____ Nature of injury None
23. Signature Fay Binney Coroner (M. D. or other)
Address Libby, Mont. Date signed 12/15/45

THE UNITED PUBLISHERS, NEWARK, N.J.

STATE OF MONTANA)
SS
COUNTY OF LINCOLN)

I, JANET B.F. SIEGEL, Clerk & Recorder, in and for Lincoln County, Montana, hereby certify that this is a true copy of a certain DEATH CERTIFICATE issued for

DAVID VAUGHN

as it appears on the records in my office, FILE NO. 1952

Witness my hand and seal of said County, this 3rd day of AUGUST, 1983.

Janet BF Siegel
JANET B.F. SIEGEL, Clerk and Recorder
Lincoln County, Montana

WRG00373091
ED_005351_00000368-00337

70-011740

STATE OF OREGON—STATE BOARD OF HEALTH
Vital Statistics Section

281 Local File Number

CERTIFICATE OF DEATH

State File Number

1. DECEASED—NAME First: VICTOR Middle: GEORGE Last: VERBONCOEUR
2. DATE OF DEATH (month, day, year): August 3, 1970
3. RACE (White, Negro, American Indian, etc. (specify): White
4. SEX: Male
5a. AGE—Last birthday (years): 55
5b. Under 1 year: mos. days
5c. Under 1 day: hours mins.
6. DATE OF BIRTH (month, day, year): March 21, 1915
7a. COUNTY OF DEATH: Douglas
7b. CITY, TOWN, OR LOCATION OF DEATH: Roseburg
7c. Inside City Limits (specify yes or no): Yes
7d. HOSPITAL OR OTHER INSTITUTION—NAME (If not in either, give street and number): Douglas Community Hospital
8. NAME OF BIRTH (If not in U.S.A., name country): Montana
9. CITIZEN OF WHAT COUNTRY: U. S. A.
10. MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (specify): Married
11. NAME OF WIDOW: Effie D. Verboncoeur
12. SOCIAL SECURITY NUMBER: 517-03-9946
13a. USUAL OCCUPATION (give kind of work done during most of working life, even if retired): Mechanic
13b. KIND OF BUSINESS OR INDUSTRY: Automotive
14a. BIRTHPLACE—STATE: Oregon
14b. COUNTY: Douglas
14c. CITY, TOWN, OR LOCATION: Roseburg
14d. Inside City Limits (specify yes or no): Yes
14e. USUAL RESIDENCE OR PLACE OF DEATH: 466 E. E. Russell
15. FATHER—NAME First middle last: William Paul
16. MOTHER—Maiden name first middle last: Marie (No Record)
17. INFORMANT—NAME and relationship to deceased: Effie D. Verboncoeur - Widow

PART I. DEATH WAS CAUSED BY: (ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), and (c)) — approximate interval between onset and death

18. Immediate cause (a): Purulent bronchitis and bronchopneumonia
due to, or as a consequence of:
(b): Pulmonary emphysema and fibrosis
due to, or as a consequence of:
(c): Silicosis Pulmonary

Conditions, if any, which gave rise to immediate cause (a), stating the underlying cause last.

PART II. OTHER SIGNIFICANT CONDITIONS: conditions contributing to death but not related to cause given in Part I (a)

19a. AUTOPSY (yes or no): yes
19b. IF YES were findings considered in determining cause of death: yes

20a. ACCIDENT (specify yes or no)
20b. DATE OF INJURY (month, day, year)
20c. HOUR
20d. HOW INJURY OCCURRED (enter nature of injury in part I or part II, items 18)
20e. INJURY AT WORK (specify yes or no)
20f. PLACE OF INJURY at home, farm, street, factory, office bldg., etc. (specify)
20g. LOCATION (street or R.F.D. No., city or town, county, state)

21. CERTIFICATION—PHYSICIAN: I attended the deceased from 2-17-70 (month day year) to 8-3-70 (month day year)
And last saw him/her alive on 8-3-70 (month day year)
I did/did not view the body after death (specify)
DEATH OCCURRED (hour) 9:45 A.M. at the place, on the date, and for the cause(s) stated.

22a. PHYSICIAN—SIGNATURE: A.N. Johnson Jr.
22b. NAME (type or print) degree or title: A.N. Johnson Jr. M.D.
22c. DATE CERTIFIED (month, day, year): 8-5-70
23. MAILING ADDRESS—PHYSICIAN (street, city or town, state, zip): 870 S.E. Jackson, Roseburg, Oregon 97470

24a. BURIAL, CREMATION, REMOVAL, MAUS. (specify): Burial
24b. CEMETERY OR CREMATORY—NAME: Catholic Cemetery
24c. LOCATION (city or town, state): Roseburg Oregon
24d. DATE (mo., day, year): 8/6/70
25a. FUNERAL DIRECTOR—SIGNATURE: Lonnie M. Wilson
25b. FUNERAL HOME—NAME AND ADDRESS (street, city or town, state, zip): LONG & SHUKLE MEMORIAL CHAPEL, P.O. Box 477, Roseburg, Ore.
26a. REGISTRAR—SIGNATURE: Lonnie Young
26b. DATE RECEIVED BY LOCAL REGISTRAR: August 7 1970
27. DATE RECEIVED BY STATE REGISTRAR: AUG 17 1970
28. RESERVED FOR REGISTRAR'S USE

515.0
13
104
0

DATE ISSUED: Dec. 4 1978

STATE OF OREGON, COUNTY OF MULTNOMAH)ss

I HEREBY CERTIFY THAT THE FOREGOING COPY HAS BEEN COMPARED BY ME WITH THE ORIGINAL DOCUMENT AND IS A TRUE, FULL AND CORRECT COPY OF THE ORIGINAL CERTIFICATE AS THE SAME APPEARS ON FILE IN THE VITAL STATISTICS SECTION OF THE OREGON STATE HEALTH DIVISION AND IN MY OFFICIAL CARE AND CUSTODY.

STATE REGISTRAR

C0040138

STATE OF WASHINGTON DEPARTMENT OF SOCIAL AND HEALTH SERVICES
DIVISION OF HEALTH
CERTIFICATE OF DEATH

DEATH OCCURRED - TIME & PLACE
HANDBOOK REGARDING COMPLETION OF RESIDENCE ITEM 6

1. NAME FIRST, MIDDLE, LAST: Robert Wayne VINION	2. SEX: Male	3. DEATH DATE (MO DAY YR): July 3, 1986	STATE FILE NUMBER: 146-8
4. RACE (WHITE, BLACK, AM. IND. ETC. (SPECIFY): White	5. AGE - LAST BIRTHDAY (YRS): 61	6. UNDER 1 YEAR: MOS. DAYS	7. UNDER 1 DAY: HOURS. MINS.
8. BIRTHDATE (MO DAY YR): Apr. 18, 1925	9. COUNTY OF DEATH: Spokane		
10. CITY, TOWN OR LOCATION OF DEATH: Spokane	11. PLACE OF DEATH (☒ BOX FOR PLACE THEN GIVE ADDRESS OR INSTITUTION NAME) 0 ☐ HOME 2 ☐ IN TRANSPORT 3 ☐ EMERG. RM/OUT. PTN. 4 ☒ HOSP. 5 ☐ NUR. HOME 6 ☐ OTHER PLACE: Deaconess Medical Center		12. RECEIVED EMERGENCY CARE AMBULANCE, FIREFTR, PARAMED?: No (YES/NO)
13. BIRTH STATE (IF NOT IN USA GIVE COUNTRY): Montana	14. CITIZEN OF WHAT COUNTRY: U.S.A.	15. MARRIED, NEVER MARRIED, WIDOWED, DIVORCED: Married	16. SPOUSE (IF WIFE GIVE MAIDEN NAME): Rae L. Leavitt
17. WAS DECEDENT EVER IN U.S. ARMED FORCES? (YES/NO): Yes			
18. SOCIAL SECURITY NO.: 516-24-1439	19. USUAL OCCUPATION (GIVE KIND OF WORK DONE DURING MOST OF WORKING LIFE EVEN IF RETIRED): Engineer	20. KIND OF BUSINESS OR INDUSTRY: Corp of Engineers	
21. RESIDENCE - NUMBER AND STREET: N. 2201 Craig Rd. #73	22. CITY/TOWN OR LOCATION: Spokane	23. INSIDE CITY LIMITS? (YES/NO): No	24. COUNTY: Spokane / 25. STATE: WA

FAMILY

26. FATHER - NAME FIRST, MIDDLE, LAST: Julius Samuel Vinion	27. MOTHER - MAIDEN NAME FIRST, MIDDLE, LAST: Emma Marie Engles
28. INFORMANT - NAME: Rae Vinion	29. MAILING ADDRESS - STREET OR RFD NO.: N. 2201 Craig Rd. #73 / CITY OR TOWN: Spokane, / STATE: WA / ZIP: 99204

DISPOSITION

30. BURIAL, CREMATION, REMOVAL, OTHER (SPECIFY): Cremation	31. DATE (MO DAY YR): July 7, 1986	32. CEMETERY/CREMATORY - NAME: Ball & Dodd Crematory	33. LOCATION - CITY/TOWN, STATE: Medical Lake, WA
34. FUNERAL DIRECTOR SIGNATURE: X Donald B. Ball	35. NAME OF FACILITY: Ball & Dodd F.H. Inc.	36. ADDRESS OF FACILITY: S. 421 Division, Spokane, WA 99202	

CERTIFICATION

TO BE COMPLETED ONLY BY CERTIFYING PHYSICIAN	TO BE COMPLETED ONLY BY MEDICAL EXAMINER OR CORONER
37. TO THE BEST OF MY KNOWLEDGE, DEATH OCCURRED AT THE TIME, DATE, AND PLACE AND DUE TO THE CAUSE(S) STATED. SIGNATURE AND TITLE: X L E Klock M.D.	41. ON THE BASIS OF EXAMINATION AND/OR INVESTIGATION, IN MY OPINION DEATH OCCURRED AT THE TIME, DATE AND PLACE AND DUE TO THE CAUSE(S) STATED. SIGNATURE AND TITLE: X
38. DATE SIGNED (MO DAY YR): 7/7/86 / 39. HOUR OF DEATH (24 HRS): 1425	42. DATE SIGNED (MO DAY YR) / 43. HOUR OF DEATH (24 HRS)
40. NAME AND TITLE OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER (TYPE OR PRINT)	44. PRONOUNCED DEAD (MO DAY YR) / 45. HOUR PRONOUNCED DEAD (24 HRS)
46. NAME AND ADDRESS OF CERTIFIER - PHYSICIAN, MEDICAL EXAMINER OR CORONER (TYPE OR PRINT): Lawrence E. Klock, M.D. 104 West 5th Spokane, WA 99204	

CAUSES OF DEATH

CONDITIONS IF ANY WHICH GAVE RISE TO IMMEDIATE CAUSE STATING UNDERLYING CAUSE LAST

47. IMMEDIATE CAUSE (ENTER ONLY ONE CAUSE PER LINE FOR (A), (B) and (C)): (A) Respiratory failure	INTERVAL BETWEEN ONSET AND DEATH
DUE TO, OR AS A CONSEQUENCE OF: (B) Malignancy of pleura and lung (type as yet undetermined)	INTERVAL BETWEEN ONSET AND DEATH
DUE TO, OR AS A CONSEQUENCE OF: (C)	INTERVAL BETWEEN ONSET AND DEATH
48. OTHER SIGNIFICANT CONDITIONS - CONDITIONS CONTRIBUTING TO DEATH BUT NOT RELATED TO CAUSE GIVEN ABOVE: Asbestosis, emphysema, cerebral vascular accident, bowel perforation	49. AUTOPSY? (YES/NO): Yes / 50. WAS CASE REFERRED TO MEDICAL EXAMINER OR CORONER? (YES/NO): No
51. ACC., SUICIDE, HOM., UNDET., OR PENDING INVEST. (SPECIFY) / 52. INJURY DATE (MO DAY YR) / 53. HOUR OF INJURY (24 HRS) / 54. DESCRIBE HOW INJURY OCCURRED	
55. INJURY AT WORK? (YES/NO) / 56. PLACE OF INJURY: AT HOME, FARM, STREET, FACTORY, OFFICE BLDG. ETC. (SPECIFY) / 57. LOCATION - STREET OR RFD NO., CITY/TOWN, STATE	
58. REGISTRAR SIGNATURE: X [signature]	59. DATE REGISTERED (MO DAY YR): JUL 07 1986

I HEREBY CERTIFY that the foregoing is a true, full and correct copy of the original Certificate of Death on file in this office.

C0040182

SPOKANE COUNTY HEALTH DISTRICT
West 1101 College Avenue
Spokane, WA 99201

[signature]
Health Officer and Registrar

Spokane, WA JUL 24 1986

DSHS 9-641A (11/85)

THIS IS A CERTIFIED COPY OF THE RECORD ON FILE WITH VITAL RECORDS. CERTIFIED COPIES MUST HAVE THE OFFICIAL SEAL

V.S. 3A—8-59—12M
STATE OF MONTANA

DUPLICATE FOR CLERK AND RECORDER

CERTIFICATE OF DEATH

STATE BOARD OF HEALTH
Bureau of Vital Statistics

Birth No.

State File No.

Type or Write Plainly With Unfading Ink
This Margin Reserved for Binding

1. PLACE OF DEATH a. COUNTY: Lincoln	2. USUAL RESIDENCE (Where deceased lived. If institution: Residence before admission) a. STATE: Montana b. COUNTY: Lincoln
b. CITY, TOWN, OR LOCATION: Libby; c. LENGTH OF STAY IN 1b: 2 hrs	c. CITY, TOWN, OR LOCATION: Libby
d. NAME OF HOSPITAL OR INSTITUTION (If not in hospital, give street address): St. Johns Lutheran Hospital	d. STREET ADDRESS: 1512 Minnesota
e. IS PLACE OF DEATH INSIDE CITY LIMITS? YES ☒ NO ☐	e. IS RESIDENCE INSIDE CITY LIMITS? YES ☒ NO ☐ — f. IS RESIDENCE ON A FARM? YES ☐ NO ☐ X

3. NAME OF DECEASED (Type or print)	First: Charles	Middle: Michael	Last: Wagner	4. DATE OF DEATH	Month Day Year: 10-14-61
5. SEX: male	6. COLOR OR RACE: white	7. MARRIED ☒ NEVER MARRIED ☐ WIDOWED ☐ DIVORCED ☐	8. DATE OF BIRTH: July 18, 1901	9. AGE (In years last birthday): 80	IF UNDER 1 YEAR: Months, Days; IF UNDER 24 HRS.: Hours, Min.
10a. USUAL OCCUPATION (Give kind of work done during most of working life, even if retired): Mechanic	10b. KIND OF BUSINESS OR INDUSTRY: Zonolight	11. BIRTHPLACE (State or foreign country): Jolliet, Illinois	12. CITIZEN OF WHAT COUNTRY? USA		
13. FATHER'S NAME: Michael C. Wagner		14. MOTHER'S MAIDEN NAME: Antonia Bertnick			
15. WAS DECEASED EVER IN U. S. ARMED FORCES? (Yes, no, or unknown): no (If yes, give war or dates of service)		16. SOCIAL SECURITY NO.: 516-16-9526	17. INFORMANT: Genevieve H. Wagner, Libby, Montana	Address	

MEDICAL CERTIFICATION

18. CAUSE OF DEATH [Enter only one cause per line for (a), (b), and (c).]

PART I. DEATH WAS CAUSED BY:
IMMEDIATE CAUSE (a) Cerebral Vascular Accident — INTERVAL BETWEEN ONSET AND DEATH: 5 hrs

Conditions, if any, which gave rise to above cause (a), stating the underlying cause last.
DUE TO (b) Cerebral Artherosclerosis — yrs
DUE TO (c) Generalized Atherosclerosis — yrs.

PART II. OTHER SIGNIFICANT CONDITIONS CONTRIBUTING TO DEATH BUT NOT RELATED TO THE TERMINAL DISEASE CONDITION GIVEN IN PART I(a): Pulmonary Fibrosis

19. WAS AUTOPSY PERFORMED? YES ☐ NO ☐

20a. ACCIDENT ☐ SUICIDE ☐ HOMICIDE ☐ — 20b. DESCRIBE HOW INJURY OCCURRED. (Enter nature of injury in Part I or Part II of item 18.)

20c. TIME OF INJURY Hour a. m. p. m. Month, Day, Year

20d. INJURY OCCURRED WHILE AT WORK ☐ NOT WHILE AT WORK ☐ — 20e. PLACE OF INJURY (e. g., in or about home, farm, factory, street, office bldg., etc.) — 20f. CITY, TOWN, OR LOCATION — COUNTY — STATE

21. I attended the deceased from 10-14-61, to 10-14-61 and last saw her/him alive on 10-14-61
Death occurred at 11:35am m on the date stated above; and to the best of my knowledge, from the causes stated.

22a. SIGNATURE (Degree or title)	22b. ADDRESS	22c. DATE SIGNED
W.T. Matthess, M.D.	Libby, Montana	10-26-61

23a. BURIAL, CREMATION, REMOVAL (Specify)	23b. DATE	23c. NAME OF CEMETERY OR CREMATORY	23d. LOCATION (City, town, or county) (State)
burial	10-17-61	City of Libby Cem.	Libby, Mont.

24. FUNERAL DIRECTOR	ADDRESS	Emb. Lic. No.	25. DATE RECD. BY LOCAL REG.	26. REGISTRAR'S SIGNATURE
Gompf Cutler F H Libby	704		10-30-61	Joanne Kerschner

STATE OF MONTANA)
SS
COUNTY OF LINCOLN)

I, ELEANOR L. VAUGHN, Clerk and Recorder, in and for Lincoln County, Montana, hereby certify that this is a true copy of a certain DEATH CERTIFICATE issued for Charles Michael Wagner as it appears on the records in my office, FILE NO. 3181

Witness my hand and seal of said County, this 20th day of August 1981.

C0040196

Eleanor L. Vaughn

ELEANOR L. VAUGHN, Clerk and Recorder

Lincoln County, Montana

WRG00373094

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MONTANA

CERTIFICATE OF DEATH

343
LOCAL FILE NUMBER

79-11-5511
STATE FILE NUMBER

DECEDENT - NAME FIRST	MIDDLE	LAST	SEX	DATE OF DEATH (Mo., Day, Yr.)
1. ROBERT	Lee	WEITZEL	2. Male	3. November 19, 1979

RACE-White, Black, American Indian, etc. (Specify)	AGE - Last Birthday (Years)	UNDER 1 YEAR: Mos	Days	UNDER 1 DAY: Hours	Min.	DATE OF BIRTH (Mo., Day, Yr.)	COUNTY OF DEATH
4. White	5a. 60	5b.		5c.		6. July 17, 1919	7a. Lewis & Clark

CITY, TOWN, OR LOCATION OF DEATH	HOSPITAL OR OTHER INSTITUTION - Name (If not in either, give street and number)	IF HOSP. OR INST. Indicate DOA, OP/Emer, Rm. Inpatient (Specify)
7b. Fort Harrison	7c. Veterans Administration Hospital	7d. Inpatient

STATE OF BIRTH (If not in U.S.A. name country)	CITIZEN OF WHAT COUNTRY	MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (Specify)	SURVIVING SPOUSE (If wife, give maiden name)
8. Colorado	9. U.S.A.	10. Never Married	11. n/a

SOCIAL SECURITY NUMBER	USUAL OCCUPATION (Give kind of work done during most of working life, even if retired)	KIND OF BUSINESS OR INDUSTRY	WAS DECEDENT EVER IN U.S. ARMED FORCES (Specify Yes or No)
12. 517 20 3615	13a. Truck Driver	13b. Commercial	14. Yes

RESIDENCE - STATE	COUNTY	CITY, TOWN, OR LOCATION	INSIDE CITY LIMITS (Specify Yes or No)	STREET AND NUMBER
15a. Montana	15b. Ravalli	15c. Corvallis	15d.	15e. P. O. Box 241

FATHER - NAME FIRST	MIDDLE	LAST	MOTHER - MAIDEN NAME FIRST	MIDDLE	LAST
16. Henry		Weitzel	17. Mary		Hein

INFORMANT - NAME (Type or Print)	MAILING ADDRESS - STREET OR R.F.D. NO.	CITY OR TOWN	STATE	ZIP
18a. V. A. Medical Records	18b. Veterans Admin. Center, Ft. Harrison, Mt. 59636			

CEMETERY OR CREMATORY - NAME	LOCATION - CITY OR TOWN	STATE
19a. Riverview Cemetery	19b. Stevensville	Montana

BURIAL, CREMATION, REMOVAL, OTHER (Specify)	MORTUARY OR OTHER - NAME AND ADDRESS
19c. Removal - Burial	20. Whitsitt Funeral Home 112 So. Church Stevensville, Mt.

DATE OF DISPOSITION (Month, Day, Year)	PERSON IN CHARGE OF DISPOSITION	License Number
21. November 20, 1979	22. (Signature) ➤ [signature]	342

To be Completed by CERTIFYING PHYSICIAN Only

23a. To the best of my knowledge, death occurred at the time, date and place and due to the cause(s) stated.

(Signature and Title) ➤ [signature] M.D.

DATE SIGNED (Month, Day, Year)	HOUR OF DEATH
23b. November 28, 1979	23c. 10:45 PM

NAME OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER (Type or Print)
23d.

To be Completed by CORONER Only

24a. On the basis of examination and/or investigation, in my opinion death occurred at the time, date and place and due to the cause(s) stated.

(Signature and Title) ➤

DATE SIGNED (Month, Day, Year)	HOUR OF DEATH
24b.	24c. M

PRONOUNCED DEAD (Mo., Day, Yr.)	PRONOUNCED DEAD (Hour)
24d. ON	24e. AT M

NAME AND ADDRESS OF CERTIFIER (PHYSICIAN OR CORONER) (Type or Print)
25. HENRY MUNIZ, M.D., Veterans Administration Hospital, Ft. Harrison, Mt. 59636

LOCAL REGISTRAR	DATE RECEIVED BY LOCAL REGISTRAR (Mo., Day, Yr.)
26a. (Signature) ➤ Deputy [signature] M.E. "Mickey" Nelson	26b. November 29, 1979

27. IMMEDIATE CAUSE (ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), AND (c))

		Interval between onset & death
PART I (a)	Interstitial Fibrosis Lungs	Years
DUE TO, OR AS A CONSEQUENCE OF: (b)	Chronic Obstructive Pulmonary Disease	
DUE TO, OR AS A CONSEQUENCE OF: (c)	Rheumatoid Arthritis	

PART II OTHER SIGNIFICANT CONDITIONS - Conditions contributing to death but not related to cause given in Part I(a)

AUTOPSY (Specify Yes or No)	WAS CASE REFERRED TO CORONER? (Specify Yes or No)
28. Yes	29. no

ACCIDENT, SUICIDE, HOMICIDE, UNDET OR PENDING INVESTIGATION (Specify)	DATE OF INJURY (Mo., Day, Yr.)	HOUR OF INJURY	DESCRIBE HOW INJURY OCCURRED
30a.	30b.	30c. M	30d.

INJURY AT WORK (Specify Yes or No)	PLACE OF INJURY - At home, farm, street, factory, office building, etc. (Specify)	LOCATION: STREET OR R.F.D. NO.	CITY OR TOWN	STATE
30e.	30f.	30g.		

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TYPE OR PRINT IN UNFADING BLACK INK SEE HANDBOOK FOR INSTRUCTIONS

LOCAL FILE NUMBER

MONTANA CERTIFICATE OF DEATH

DUPLICATE FOR CLERK AND RECORDER

STATE FILE NUMBER

Records & Statistics, Montana State Department of Health

DECEASED

DECEASED—NAME (FIRST, MIDDLE, LAST): 1 ROBERT C. WATTS

SEX: 2 Male

DATE OF DEATH (MONTH, DAY, YEAR): 3 June 19, 1977

RACE (WHITE, NEGRO, AMERICAN INDIAN, ETC. (SPECIFY)): 4 White

AGE—LAST BIRTHDAY (YEARS): 5 76

UNDER 1 YEAR: MOS. 5a DAYS

UNDER 1 DAY: HOURS 5b MIN

DATE OF BIRTH (MONTH, DAY, YEAR): 6 March 7, 1901

COUNTY OF DEATH: 7a Lincoln

CITY, TOWN, OR LOCATION OF DEATH: 7b Libby

INSIDE CITY LIMITS (SPECIFY YES OR NO): 7c Yes

HOSPITAL OR OTHER INSTITUTION—NAME (IF NOT IN EITHER, GIVE STREET AND NUMBER): 7d St. John Luthern Hospital

STATE OF BIRTH (IF NOT IN U.S.A., NAME COUNTRY): 8 Texas

CITIZEN OF WHAT COUNTRY: 9 USA

MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (SPECIFY): 10 Widowed

SURVIVING SPOUSE (IF WIFE, GIVE MAIDEN NAME): 11 None

SOCIAL SECURITY NUMBER: 12 451-05-3322 A

USUAL OCCUPATION (GIVE KIND OF WORK DONE DURING MOST OF WORKING LIFE, EVEN IF RETIRED): 13a Security Patrol

KIND OF BUSINESS OR INDUSTRY: 13b Detective

USUAL RESIDENCE WHERE DECEASED LIVED. IF DEATH OCCURRED IN INSTITUTION, GIVE RESIDENCE BEFORE ADMISSION.

RESIDENCE—STATE: 14a Montana

COUNTY: 14b Lincoln

CITY, TOWN, OR LOCATION: 14c Libby

INSIDE CITY LIMITS (SPECIFY YES OR NO): 14d No

STREET AND NUMBER: 14e Box 273

PARENTS

FATHER—NAME (FIRST, MIDDLE, LAST): 15 Robert B. Watts

MOTHER—MAIDEN NAME (FIRST, MIDDLE, LAST): 16 Calodina Whitney

INFORMANT—NAME: 17a Julius L. Robertson

MAILING ADDRESS (STREET OR R.F.D. NO., CITY OR TOWN, STATE, ZIP): 17b Rt. 4, Box 507, Libby, Montana 59923

CAUSE OF DEATH

PART I. DEATH WAS CAUSED BY: (ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), AND (c))

18. IMMEDIATE CAUSE

(a) Cardiac Arrest — APPROXIMATE INTERVAL BETWEEN ONSET AND DEATH: Minutes

DUE TO, OR AS A CONSEQUENCE OF:

(b) Arteriosclerotic Heart Disease — Years

DUE TO, OR AS A CONSEQUENCE OF:

(c)

CONDITIONS, IF ANY, WHICH GAVE RISE TO IMMEDIATE CAUSE (a), STATING THE UNDERLYING CAUSE LAST

PART II. OTHER SIGNIFICANT CONDITIONS: CONDITIONS CONTRIBUTING TO DEATH BUT NOT RELATED TO CAUSE GIVEN IN PART I (a)

AUTOPSY (YES OR NO): 19a No

IF YES WERE FINDINGS CONSIDERED IN DETERMINING CAUSE OF DEATH: 19b

ACCIDENT, SUICIDE, HOMICIDE, OR UNDETERMINED (SPECIFY): 20a

DATE OF INJURY (MONTH, DAY, YEAR): 20b

HOUR: 20c M.

HOW INJURY OCCURRED (ENTER NATURE OF INJURY IN PART I OR PART II, ITEM 18): 20d

INJURY AT WORK (SPECIFY YES OR NO): 20e

PLACE OF INJURY AT HOME, FARM, STREET, FACTORY, OFFICE BLDG., ETC. (SPECIFY): 20f

LOCATION (STREET OR R.F.D. NO., CITY OR TOWN, STATE): 20g

CERTIFIER

CERTIFICATION—PHYSICIAN: I ATTENDED THE DECEASED FROM (MONTH, DAY, YEAR) 21a TO (MONTH, DAY, YEAR) 21b

AND LAST SAW HIM/HER ALIVE ON (MONTH, DAY, YEAR) 21c

I DID/DID NOT VIEW THE BODY AFTER DEATH 21d

DEATH OCCURRED (HOUR) 21e AT THE PLACE, ON THE DATE, AND, TO THE BEST OF MY KNOWLEDGE, DUE TO THE CAUSE(S) STATED. M.

CERTIFICATION—CORONER: ON THE BASIS OF THE EXAMINATION OF THE BODY AND/OR THE INVESTIGATION, IN MY OPINION, DEATH OCCURRED ON THE DATE AND DUE TO THE CAUSE(S) STATED 22a 6/19/77

HOUR OF DEATH: 7:35p. M.

THE DECEDENT WAS PRONOUNCED DEAD (MONTH, DAY, YEAR) 22b 6 19 77

AT HOUR 22c 7:35p. M.

CERTIFIER—NAME (TYPE OR PRINT): 23a Hel Vial

SIGNATURE: 23b Hel Vial (DEGREE OR TITLE) Coroner

DATE SIGNED (MONTH, DAY, YEAR): 23c 6/22/77

MAILING ADDRESS—CERTIFIER: 24. STREET OR R.F.D. NO. P.O. Box 750 CITY OR TOWN Libby STATE Montana ZIP 59923

BURIAL

BURIAL, CREMATION, REMOVAL (SPECIFY): 25a Burial

CEMETERY OR CREMATORY—NAME: 25b City of Libby Cemetery

LOCATION (CITY OR TOWN, STATE): 25c Libby Montana

DATE (MONTH, DAY, YEAR): 25d June 22, 1977

MORTUARY—NAME AND ADDRESS (STREET OR R.F.D. NO., CITY OR TOWN, STATE, ZIP): 26a Vial Funeral Home, P.O. Box 750, Libby, Montana 59923

FUNERAL DIRECTOR OR MORTICIAN—SIGNATURE: 26b Giles T. Nelson

LOCAL REGISTRAR—SIGNATURE: 26c Dorre Reshkin

DATE RECEIVED BY LOCAL REGISTRAR: 27a 6-22-77

STATE OF MONTANA)
COUNTY OF LINCOLN) SS

I, ELEANOR L. VAUGHN, Clerk and Recorder, in and for Lincoln County, Montana, hereby certify that this is a true copy of a certain DEATH CERTIFICATE issued for

Robert C. Watts

as it appears on the records in my office. FILE NO. 4759

Witness my hand and seal of said County, this 1st day of July, 1977.

Eleanor L. Vaughn

ELEANOR L. VAUGHN, Clerk and Recorder

VS3A

TYPE OR PRINT IN UNFADING BLACK INK SEE HANDBOOK FOR INSTRUCTIONS

Records & Statistics, Montana State Department of Health

MONTANA CERTIFICATE OF DEATH

DUPLICATE FOR CLERK AND RECORDER

LOCAL FILE NUMBER — STATE FILE NUMBER

DECEASED

1. DECEASED—NAME (FIRST, MIDDLE, LAST): LILAS D. WELCH
2. SEX: Male
3. DATE OF DEATH (MONTH, DAY, YEAR): July 22, 1974
4. RACE (WHITE, NEGRO, AMERICAN INDIAN, ETC. (SPECIFY)): White
5a. AGE—LAST BIRTHDAY (YEARS): 73
5b. UNDER 1 YEAR: MOS. / DAYS
5c. UNDER 1 DAY: HOURS / MIN.
6. DATE OF BIRTH (MONTH, DAY, YEAR): Feb. 5, 1903
7a. COUNTY OF DEATH: Lincoln
7b. CITY, TOWN, OR LOCATION OF DEATH: Libby
7c. INSIDE CITY LIMITS (SPECIFY YES OR NO): Yes
7d. HOSPITAL OR OTHER INSTITUTION—NAME (IF NOT IN EITHER, GIVE STREET AND NUMBER): St. John's Lutheran Hospital Inc.
8. STATE OF BIRTH (IF NOT IN U.S.A., NAME COUNTRY): Wisconsin
9. CITIZEN OF WHAT COUNTRY: U.S.A.
10. MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (SPECIFY): Married
11. SURVIVING SPOUSE (IF WIFE, GIVE MAIDEN NAME): Christine Bassaraba
12. SOCIAL SECURITY NUMBER: 516-03-5217
13a. USUAL OCCUPATION (GIVE KIND OF WORK DONE DURING MOST OF WORKING LIFE, EVEN IF RETIRED): Retired Labor
13b. KIND OF BUSINESS OR INDUSTRY: Meat Cutter

USUAL RESIDENCE WHERE DECEASED LIVED. IF DEATH OCCURRED IN INSTITUTION, GIVE RESIDENCE BEFORE ADMISSION.

14a. RESIDENCE—STATE: Montana
14b. COUNTY: Lincoln
14c. CITY, TOWN, OR LOCATION: Libby
14d. INSIDE CITY LIMITS (SPECIFY YES OR NO): NO
14e. STREET AND NUMBER: Garren Acres

PARENTS

15. FATHER—NAME (FIRST, MIDDLE, LAST): Charles D. Welch
16. MOTHER—MAIDEN NAME (FIRST, MIDDLE, LAST): Lilly Crotteau

17a. INFORMANT—NAME: Mrs. Christine Welch
17b. MAILING ADDRESS (STREET OR R.F.D. NO., CITY OR TOWN, STATE, ZIP): Garren Acres: Libby, Montana 59923

CAUSE

18. PART I. DEATH WAS CAUSED BY: [ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), AND (c)]

		APPROXIMATE INTERVAL BETWEEN ONSET AND DEATH
IMMEDIATE CAUSE	(a) Acute Myocardical Infarct	6 yrs.
DUE TO, OR AS A CONSEQUENCE OF:	(b)	
DUE TO, OR AS A CONSEQUENCE OF:	(c)	

CONDITIONS, IF ANY, WHICH GAVE RISE TO IMMEDIATE CAUSE (a), STATING THE UNDERLYING CAUSE LAST

PART II. OTHER SIGNIFICANT CONDITIONS: CONDITIONS CONTRIBUTING TO DEATH BUT NOT RELATED TO CAUSE GIVEN IN PART I (a): Emphysema & Asbestos

19a. AUTOPSY (YES OR NO): NO
19b. IF YES WERE FINDINGS CONSIDERED IN DETERMINING CAUSE OF DEATH

20a. ACCIDENT, SUICIDE, HOMICIDE, OR UNDETERMINED (SPECIFY)
20b. DATE OF INJURY (MONTH, DAY, YEAR)
20c. HOUR M.
20d. HOW INJURY OCCURRED (ENTER NATURE OF INJURY IN PART I OR PART II, ITEM 18)
20e. INJURY AT WORK (SPECIFY YES OR NO)
20f. PLACE OF INJURY AT HOME, FARM, STREET, FACTORY, OFFICE BLDG., ETC. (SPECIFY)
20g. LOCATION (STREET OR R.F.D. NO., CITY OR TOWN, STATE)

CERTIFIER

21a. CERTIFICATION—PHYSICIAN: I ATTENDED THE DECEASED FROM (MONTH DAY YEAR) July 22, 1974
21b. TO (MONTH DAY YEAR) July 22, 74
21c. AND LAST SAW HIM/HER ALIVE ON (MONTH DAY YEAR) July 22, 74
21d. I DID/DID NOT VIEW THE BODY AFTER DEATH: Did
21e. DEATH OCCURRED (HOUR) M. AT THE PLACE, ON THE DATE, AND, TO THE BEST OF MY KNOWLEDGE, DUE TO THE CAUSE(S) STATED.

22a. CERTIFICATION—CORONER: ON THE BASIS OF THE EXAMINATION OF THE BODY AND/OR THE INVESTIGATION, IN MY OPINION, DEATH OCCURRED ON THE DATE AND DUE TO THE CAUSE(S) STATED. HOUR OF DEATH M.
22b. THE DECEDENT WAS PRONOUNCED DEAD (MONTH DAY YEAR)
22c. AT HOUR M.

23a. CERTIFIER—NAME (TYPE OR PRINT)
23b. SIGNATURE: Paul J. Seifert Jr. (DEGREE OR TITLE): M.D.
23c. DATE SIGNED (MONTH, DAY, YEAR): July 26, 1974
24. MAILING ADDRESS—CERTIFIER (STREET OR R.F.D. NO., CITY OR TOWN, STATE, ZIP)

BURIAL

25a. BURIAL, CREMATION, REMOVAL (SPECIFY): Burial
25b. CEMETERY OR CREMATORY—NAME: Libby Cemetery
25c. LOCATION (CITY OR TOWN, STATE): Libby, Montana
26. DATE (MONTH, DAY, YEAR): July 25, 1974
26a. MORTUARY—NAME AND ADDRESS (STREET OR R.F.D. NO., CITY OR TOWN, STATE, ZIP): Vialpando Funeral Home 422 W. 2nd Libby, Montana 59923
26b. FUNERAL DIRECTOR OR MORTICIAN — SIGNATURE: Wesley C. Lloyd
27a. LOCAL REGISTRAR — SIGNATURE: [illegible]
27b. DATE RECEIVED BY LOCAL REGISTRAR: July 26, 1974

STATE OF MONTANA)
County of Lincoln)

I, ELEANOR L. VAUGHN, Clerk and Recorder, in and for Lincoln County, Montana, hereby certify that this is a true copy of a certain DEATH CERTIFICATE issued for

Lilas D. Welch

as it appears on the records in my office. FILE NO. 4465

WITNESS my hand and seal of said County, this 26th day of July 1974.

WRG0037397

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John Keane November 24, 1969

E. D. Lovick

Enclosed are copies of agreements and releases pertaining to the L. D. Welch case in which he drew the $30.00 per week weekly indemnity. You will note that in the letter to Mr. Dugan it states that the claim was actually withdrawn from the Industrial Accident Board and in the release which Mr. Welch signed it states that this is a doubtful and disputed claim. I do not believe that Aetna has a good case in requesting refund of the weekly indemnity money which was paid to Mr. Welch.

EDLovick/jbg

enc.

C0040213

STATE OF MONTANA INDUSTRIAL ACCIDENT BOARD

HELENA, MONTANA

LILAS D. WELCH, Claimant vs. ZONOLITE DIVISION, W. R. GRACE & CO., Employer, and MARYLAND CASUALTY COMPANY, Defendant.	Claim: 10215-B-51 O.D. O R D E R

TO THE ABOVE-NAMED DEFENDANT AND
THE ABOVE-NAMED EMPLOYER:

You are hereby ordered to submit full and complete answers to all the following interrogatories, to the Industrial Accident Board within twenty (20) days of your receipt hereof, with a copy to the Counsel for Claimant herein. Said answers are to be in writing, under oath, and acknowledged before a person authorized to administer oaths in the State of Montana.

INTERROGATORIES

1. State whether the Claimant herein has ever been in the employ of Employer herein, W. R. Grace Co. or any of its sub-divisions or affiliates.

2. If the answer to Interrogatory 1, is yes:

(a) State the location, and commencement and termination dates for each such period of employment;

(b) State the job description and the required duties of Claimant during each such period of employment;

(c) For each such period of employment, state whether Claimant's duties required him to be exposed to atmospheric conditions which either quantitatively or qualitatively, could have been harmful to the respiratory or pulmonary tracts of a normal individual;

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3. State whether asbestos, or any of its compounds, forms or derivatives, is contained in any product produced by Employer herein, or is involved in the production of any such product.

4. If the answer to Interrogatory No. 3 is yes, state the product containing, or the process involving asbestos, and state the type, form and quantity involved.

5. If the answer to Interrogatory No. 3 is yes, state whether there is respirable (atmospheric) asbestos in powder, dust or particle form, at, in or around any of employer's plants or other operations.

6. If the answer to Interrogatory No. 5 is yes, state whether the Montana State Board of Health, or any other governmental agency, or Defendant, or Employer itself has, within the last fifteen (15) years conducted inspections, investigations or tests, of or upon the atmospheric conditions present in any of Employer's Montana operations.

7. If the answer to Interrogatory No. 6 is yes:

(a) State the dates of all such inspections, investigations or tests;

(b) State the purpose for conducting such, including in your answer whether or not such were conducted specifically to determine whether dangerous, respirable quantities of asbestos were present in such atmosphere;

(c) State the name, address, authority or official capacity, and qualifications of any and all persons conducting all such inspections, investigations or tests;

(d) State the nature, type and purpose of any scientific tests so taken or conducted, including in your answer the brand name, type and function of any special equipment or instruments used.

8. If the answer to Interrogatory No. 6 is yes, state whether any written reports were made or submitted containing results of such inspections, investigations or tests.

9. If answer to Interrogatory No. 8 is yes,

(a) State the date, contents and conclusions of each such report;

(b) State whether each such report contained any recommendation as to suggested changes in atmospheric conditions at, in or around any of employer's operations, whether such recommendations were followed, and if not, why not.

10. If the answer to Interrogatory No. 8 is yes,

produce copies of all such reports for the Industrial Accident Board and Claimant's use without the necessity of procuring a subpoena.

IT IS SO ORDERED.

~~IT IS FURTHER ORDERED pursuant to R.C.M. 1947 §92-1352 and §92-1340, that the above named Defendant's and Employer's "Answer" as filed herein, be, and hereby is stricken from the record as being largely superfluous and dilatory and [illegible] harrod[illegible]~~

C0040225

STATE OF MONTANA INDUSTRIAL ACCIDENT BOARD
HELENA, MONTANA

LILAS D. WELCH,

Claimant, * ANSWERS TO

-vs- * INTERROGATORIES

ZONOLITE DIVISION OF W. R. GRACE *
& COMPANY, Employer, and
MARYLAND CASUALTY COMPANY, *

Defendant. *

****

TO: THE INDUSTRIAL ACCIDENT BOARD OF THE
STATE OF MONTANA

Comes now R. A. BLEICH, General Manager of the Libby, Montana operations of ZONOLITE DIVISION OF W. R. GRACE & CO., who, having been duly sworn in response to the Interrogatories served upon employer in the above entitled matter, makes the following answers and responses:

INTERROGATORY NUMBER 1: State whether the Claimant herein has ever been in the employ of Employer herein, W. R. Grace Co. or any of its sub-divisions or affiliates.

ANSWER: Yes.

INTERROGATORY NUMBER 2: If the answer to Interrogatory 1 is yes:

(a) State the location, and commencement and termination dates for each such period of employment;

(b) State the job description and the required duties of claimant during each such period of employment;

(c) For each such period of employment, state whether claimant's duties required him to be exposed to atmospheric conditions which either quantitatively or qualitatively, could have been harmful to the respiratory or pulmonary tracts of a normal individual;

(b) Job descriptions and details:

(1) February 8, to March 12, 1949, Mill Maintenance Man, doing general maintenance in and around vermiculite mill.

(2) March 12-19, 1949. Laid off due to shortage of work.

(3) March 19 - May 19, 1949. Construction worker. Doing various construction and maintenance work over entire mine-mill area.

(4) May 19 - June 13, 1949. Concentrate haul truck driver. Drove ore haul truck.

(5) June 14, 1949 - March 29, 1950. Construction worker doing various construction work and acted as fill-in (spare) concentrate truck driver.

(6) For period March 19, 1949 to March 29, 1950, he drove concentrate haul truck a total of 111 days, and worked on construction jobs a total of 118 days.

(7) March 30, 1950 to September 30, 1951. Mine Dumpman and Euclid truck driver. Dumpman directs trucks dumping waste and acts as parttime Euclid driver. Euclid driver hauls mine ore and waste in mine.

(8) October 1, 1951 to December 31, 1951. Concentrate haul truck driver.

(9) January 2, December 7, 1952. Car Boarder. Prepares box cars for loading with concentrate for rail shipment. Cleans cars, boards doors.

(10) December 8, 1952 - March 1, 1953. Sand truck driver at mine. Drives truck sanding roads.

(11) March 2, 1953 to August 31, 1955. Construction worker doing various construction jobs and also filling in as temporary concentrate truck driver as needed. During this period he drove concentrate truck 108 days.

(12) September 1, 1955 - August 6, 1956. Concentrate haul truck driver.

(13) August 7, 1956 to November 1966. Warehouse assistant. Working as check-in supplies warehouse, receiving and disbursing inventory parts and supplies, assisting with inventory, preparing requisitions.

(c) Unknown.

(d) Claimant assigned to various duties for the following reasons:

INTERROGATORY NUMBER 3. State whether asbestos, or any of its compounds, forms or derivatives, is contained in any product produced by Employer herein, or is involved in the production of any such product.

ANSWER:

Yes.

INTERROGATORY NUMBER 4. If the answer to Interrogatory Number 3 is yes, state the product containing, or the process involving asbestos, and state the type, form and quantity involved.

ANSWER:

The ore from the mine contains asbestos of the type tremolite. This ore is processed in the mill, concentrating the vermiculite by separating foreign minerals, including tremolite from ore feed. Quantity of tremolite involved varies, depending on ore types. In all cases the tremolite content is less than 10% of mill feed.

INTERROGATORY NUMBER 5. If the answer to Interrogatory No. 3 is yes, state whether there is respirable (atmospheric) asbestos in powder, dust or particle form, at, in or around any of employer's plants or other operations.

ANSWER:

There would be some tremolite in particle form in the atmosphere of the mill.

INTERROGATORY NUMBER 6. If the answer to Interrogatory No. 5 is yes, state whether the Montana State Board of Health, or any other governmental agency, or Defendant, or Employer itself has, within the last fifteen (15) years conducted inspections, investigations or tests, of or upon the atmospheric conditions present in any of Employer's Montana operations.

ANSWER:

Employer and defendant have objected to Interrogatory Number 6 in separate Objections herein, as it may relate to the Montana State Board of Health.

In answer to the remaining portion of said Interrogatory, employer has conducted certain tests relating to the atmospheric conditions of the mill.

(c) State the name, address, authority or official capacity, and qualifications of any and all persons conducting all such inspections, investigations or tests;

(d) State the nature, type and purpose of any scientific tests so taken or conducted, including in your answer the brand name, type and function of any special equipment or instruments used.

ANSWER:

Employer and defendant have objected to Interrogatory Number 7 in separate Objections herein, as it may relate to the Montana State Board of Health.

The following Answers relate to tests conducted by the employer:

(a) January 1965; February 1965; April 1965; April 16, 1965; May 5, 1965; June 8, 1965; June 30, 1965; August 12, 1965; September 9, 1965; October 12, 1965; November 3, 1965; December 7, 1965; February 3, 1966; March 2, 1966; April 6, 1966; May 19, 1966; June 28, 1966; August 19, 1966; September 13, 1966; October 11, 1966; November 10, 1966; December 8, 1966; January 11, 1967; February 8, 1967; March 9, 1967; April 11, 1967; May 5, 1967; June 20, 1967; July 19, 1967; August 9, 1967.

(b) The purpose of conducting such tests was to determine the overall quantity of dust concentration in the mill atmosphere.

(c) Tests were conducted by Mr. Robert W. Vinion, of Libby, Montana, under the supervision of Mr. Ray Kujawa, of Libby, Montana, Safety Engineer.

Mr. Vinion was Quality Control Engineer, and had received his instruction in conducting such tests from the Montana State Board of Health.

(d) The tests were dust counts of the mill atmosphere which were designed to measure dust concentrations of less than ten microns in size.

Tests were conducted with an MSA Midget Impinger No. CT-44475, procured from the Mine Safety Appliance Company. This unit collects a given quantity of air and measures dust particles of less than ten microns in size.

INTERROGATORY NUMBER 8: If the answer to Interrogatory

In answer to the remaining portion of said Interrogatory, written records of the actual atmospheric test results are maintained by the employer.

INTERROGATORY NUMBER 9. If answer to Interrogatory No. 8 is yes,

(a) State the date, contents and conclusions of each such report;

(b) State whether each such report contained any recommendation as to suggested changes in atmospheric conditions at, in or around any of employer's operations, whether such recommendations were followed, and if not, why not.

ANSWER:

Employer and defendant have objected to Interrogatory Number 9 in separate Objections herein as it may relate to the Montana State Board of Health.

The following answers relate to tests conducted by the employer:

(a) As indicated above, employer does not have reports as such relative to the tests it conducts, merely maintaining records of the actual dust count.

(b) Same as (a) above.

INTERROGATORY NUMBER 10. If the answer to Interrogatory No. 8 is yes,

(a) State the name, address and authority of each person receiving a copy of such report;

(b) If defendant or Employer has custody of any or all such reports, state whether either would be willing to produce copies of all such reports for the Industrial Accident Board and Claimant's use without the necessity of procuring a Subpoena.

ANSWER:

Employer and defendant have objected to Interrogatory Number 10 in Separate Objections herein as it may relate to the Montana State Board of Health.

The following Answers relate to tests conducted by the employer:

(a) As indicated above, there are no reports as such, however record of actual dust counts are delivered to R. A. Bleich, General

STATE OF MONTANA)
) ss
County of Lincoln)

R. A. BLEICH, being first duly sworn upon oath, deposes and says: I am the General Manager of the Libby, Montana operations of Zonolite Division of W. R. Grace & Co., named as employer in the above entitled action, and have read the Interrogatories served upon said Employer by the Industrial Accident Board of the State of Montana; that the foregoing Answers to those Interrogatories are true to the best of my knowledge, information and belief.

R. A. BLEICH

Subscribed and sworn to before me this ____ day of December, 1967.

Notary Public for the State of Montana
Residing at Libby, Montana
My Commission expires _____

ED_005351_00000368-00353

STATE OF MONTANA INDUSTRIAL ACCIDENT BOARD
HELENA, MONTANA

LILAS D. WELCH, * Claim No. 10215-B-51 O.D.

Claimant, * OBJECTIONS

-vs- * TO

ZONOLITE DIVISION OF W. R. GRACE * INTERROGATORIES
& COMPANY, Employer, and
MARYLAND CASUALTY COMPANY, *

Defendant, *

****

Come now the above named Employer and Defendant, and make the following Objections to written Interrogatories served herein by mail:

Objections to Interrogatories Numbers 6, 7, 8, 9 and 10:

Employer and Defendant object to each of the said Interrogatories so far as they may relate to any activity or report of the Montana State Board of Health, upon the grounds and for the reasons that such records and reports are not admissible as evidence in the above entitled matter.

WHEREFORE, defendant and employer move the Industrial Accident Board for its Order striking out said Interrogatories as they may relate to the Montana State Board of Health, and excusing said defendant and employer from answering them.

DATED this 4th day of December, 1967.

S. Y. Larrick

S. Y. LARRICK
Attorney for Employer and
Defendant

R. W. Sterrett December 4, 1967

E. D. Lovick L. D. Welch

R. A. Bleich

As reported to you on the phone, a hearing on the L. D. Welch claim was held in Kalispell on November 29, 1967. Chuck Dugan, Dewey & Almy Counsel from Cambridge was present as an observer.

The hearing went about as anticipated. Actually, it probably went a little better than expected. There were three of our union members who testified. Ray Kujawa had been subpoenaed as Safety Engineer and R. A. Bleich was called upon to testify.

The claimants endeavored to show that we have a dust problem throughout the entire operation. They have asked for additional information through interrogation which will be filed.

There will be some time involved before a determination is made in the case. We will keep you informed on any developments.

EDLovick/jbg

C0040237

J.B. - Please make this out for L. D. Welch

2.

Industrial Accident Board, Helena, Montana, Form 37 Revised—YM - U - WU

Industrial Accident Board

HELENA, MONTANA

Firm No.....

File No.....

EMPLOYER'S FIRST REPORT OF INJURY

INSTRUCTIONS—Employer must complete form at once after every accident which causes loss of time from work or requires medical attention and mail it to the Industrial Accident Board, Helena, Montana. Form must be signed in pen and ink. ALL QUESTIONS MUST BE ANSWERED FULLY.

INJURED EMPLOYEE

Full name of injured employee Lilas D. Welch Occupation.....

Mailing address..... (Street) ..... (City) How long has he been in your employ.....

Social Security No..... Sex..... Age..... Married ☐ Single ☐

EARNINGS

Last earnings

Monthly Wage..... Weekly Wage..... Daily Wage..... Hourly Wage.....

Receive board Yes ☐ No ☐ Daily Value..... Receive room Yes ☐ No ☐ Daily Value.....

Piece Worker Yes ☐ No ☐ If yes, price per unit at piece work..... Hours worked per day.....

Days worked per week..... Employee's pay period? Monthly ☐ Semi-monthly ☐ Weekly ☐ List employee's earnings last 4 pay periods 1..... 2..... 3..... 4.....

List Payroll Classification and Code under which employee's wages were reported..... (Sawmill - Mechanic - Etc.) Code..... (2702, 5506, 8810)

ACCIDENT AND INJURY

Leave Blank

Describe in full how accident happened and GIVE CAUSE We understand Mr. Welch claims for contracted and occupational disease while in our employ.

Nature or extent of injury..... (Cut - Fracture) Part of body injured?..... (Leg - Arm - Back - Head)

Names of witnesses to accident 1..... 2.....

Date of accident..... 19..... Hour..... A. M. P. M. Was employee injured in course of employment? Yes ☐ No ☐

Place where accident occurred..... (Address) ..... (City) ..... (County)

Did you or employee's supervisor have actual knowledge of accident? Yes ☐ No ☐

Were you notified of accident by injured employee? Yes ☐ No ☐ How..... Date.....

Have you reason to question this accident? Yes ☐ No ☐ If "yes" explain fully.....

SAFETY

Leave Blank

Was employee's accident due to unsafe work practice? Yes ☐ No ☐ If "yes", what did he do unsafely?.....

Was a specific device, object or substance involved in accident? Yes ☐ No ☐ If "yes," name specific device, object or substance..... Was device or object defective? Yes ☐ No ☐

Was employee doing regular work when injured? Yes ☐ No ☐ Was employee trained to do work he was doing when injured? Yes ☐ No ☐ Were adequate safeguards provided? Yes ☐ No ☐ If "yes," were they being used at the time of accident? Yes ☐ No ☐

MEDICAL ATTENTION

Name of attending physician Dr. Marc Cathey ? Address Missoula

Was employee hospitalized? Yes ☐ No ☐ Name of hospital / Address.....

Was first aid administered by someone other than attending physician? Yes ☐ No ☐

TIME AND WAGE LOSS

Leave Blank

Will employee lose time from work due to accident? Yes ☐ No ☐ How long?..... If injury results in time loss will employee, while disabled, receive sick leave benefits? Yes ☐ No ☐ Paid vacation? Yes ☐ No ☐ Will employee lose wages? Yes ☐ No ☐ Room? Yes ☐ No ☐ Board? Yes ☐ No ☐

Date wage loss began..... Amount of weekly wage loss.....

WRG00373110

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R E L E A S E

KNOW ALL MEN BY THESE PRESENTS: That the undersigned, LILAS D. WELCH and CHRISTINE WELCH, husband and wife, for and in consideration of the sum of TEN THOUSAND AND NO/100 DOLLARS ($10,000.00), to us in hand paid by and on behalf of W. R. GRACE & CO., ZONOLITE DIVISION, and MARYLAND CASUALTY COMPANY, the receipt and sufficiency of which is hereby acknowledged, have released and discharged, and by these presents do release and forever discharge the said W. R. GRACE & CO., ZONOLITE DIVISION, and MARYLAND CASUALTY COMPANY, their successors and assigns, and also any and all other persons, associations or corporations, whether herein named or referred to or not, and who, together with the above named W. R. GRACE & CO., ZONOLITE DIVISION and MARYLAND CASUALTY COMPANY, may be liable to the undersigned, or either or both of them, under or by virtue of The Occupational Disease Act of Montana, or otherwise, of and from any and all claims for compensation benefits or medical benefits, or otherwise, or demands, damages, or causes of action of whatsoever name or nature which have arisen or which may hereafter arise in or out of, or in connection with the disease of Asbestosis claimed to have been contracted by the undersigned LILAS D. WELCH while in the employ of, and as a result of his employment with W. R. GRACE & CO., ZONOLITE DIVISION, which said employer was and is enrolled under Plan Number Two of the Occupational Disease Act of the State of Montana, and is insured for any liability to pay compensation and benefits as provided for in The Occupational Disease Act of the State of Montana through MARYLAND CASUALTY COMPANY.

IT IS UNDERSTOOD AND AGREED that this settlement is the compromise of a doubtful and disputed claim, and that the payment hereinabove referred to is not to be claimed to be, or construed to be an admission of liability under The Occupational Disease Act of the State of Montana, or otherwise, on the part of W. R. GRACE & CO., ZONOLITE DIVISION, and/or MARYLAND CASUALTY COMPANY, by whom liability is expressly denied, and that each and all of said persons, firms or corporations who are hereby released shall not be estopped or otherwise barred from asserting and expressly reserve the right to assert, any claim or any cause of action that he, she, it, or they, or any of them, may have against the undersigned, or any others.

AND FOR AND IN CONSIDERATION of the above payment made to the undersigned, and as additional consideration therefor, the undersigned, individually, hereby agree to indemnify and hold harmless the said parties released hereby, and each and all of said parties so released, whether or not specifically named herein, against loss and expense in any way connected with any and every claim and demand of every kind and character which may hereafter be asserted or attempted to be asserted by reason of, or arising in or out of, or in connection with said disease of Asbestosis, or the effects or consequences or death as a result thereof, by or on behalf of the undersigned, their personal representatives, creditors, heirs, or any of them.

IN WITNESS WHEREOF, the undersigned have hereunto set their hands and seals in duplicate, this 5th day of February, 1968.

Lilas D. Welch
LILAS D. WELCH

Christine Welch

C0040259

STATE OF MONTANA
County of Lincoln } ss

On this 5 day of February, 1968, before me, the undersigned, a Notary Public for the State of Montana, personally appeared LILAS D. WELCH and CHRISTINE WELCH, husband and wife, known to me to be the persons described in and who executed the above and foregoing instrument, and who acknowledged to me the act of the signing and sealing thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal this 5 day of February, 1968.

Willie M Rector
Notary Public for the State of Montana
Residing at Libby Montana
(SEAL) My Commission expires 1-19-69

C0040260

WRG00373112
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Zonolite
Construction Products Division

GRACE

TO: Carole Mullen

DATE: December 1, 1989

FROM: Rayetta Morrison

SUBJECT: Albert Urdahl, Sr.
SSN#517-01-6887

Attached please find a copy of the death certificate for Albert Urdahl, Sr. who passed away November 18th. His spouse preceeded him in death so there are no survivor's benefits. The family has been notified to return any further pension checks.

Rayetta

Attachment

C0040016

Zonolite
Construction Products Division

GRACE

TO: H. E. Eschenbach

DATE: December 1, 1989

FROM: Rayetta Morrison

SUBJECT: Death Certificate
Albert Urdahl, Sr.

Attached is a copy of the death certificate for our former employee, Albert Urdahl, who passed away November 18, 1989.

Rayetta

Attachment

C0040017

WRG00373114

ED_005351_00000368-00360

FORM V.S. 3 (1988 revision)

MONTANA CERTIFICATE OF DEATH

Local File Number | State File Number

DECEDENT

1. DECEDENT'S NAME (First): Albert
(Middle): (nmi)
(Last): URDAHL
2. SEX: male
3. DATE OF DEATH (Month, Day, Year): November 18, 1989

4. RACE—American Indian, Black White, etc. (Specify): white
5a. AGE—Last Birthday (Years): 79
5b. UNDER 1 YEAR: Months / Days
5c. UNDER 1 DAY: Hours / Minutes
6. DATE OF BIRTH (Month, Day, Year): May 9, 1910
7a. COUNTY OF DEATH: Lincoln

7b. PLACE OF DEATH (Check only one)
HOSPITAL: ☐ Inpatient ☐ ER/Outpatient ☐ DOA
OTHER: ☐ Nursing Home XX Residence ☐ Other (Specify)

7c. FACILITY NAME (If not institution, give street and number): residence - 617 West 1st St.
7d. CITY, TOWN, OR LOCATION OF DEATH: Libby, Montana

8. BIRTHPLACE (City and State or Foreign Country): Stavananger, Norway
9. MARITAL STATUS: ☐ Never Married X Widowed ☐ Married ☐ Divorced
10. SURVIVING SPOUSE (If wife, give maiden surname): none

11. SOCIAL SECURITY NUMBER: 517-01-6887
12a. DECEDENT'S USUAL OCCUPATION (Give kind of work done during most of working life. Do not use retired.): shop foreman
12b. KIND OF BUSINESS/INDUSTRY: mining
13. WAS DECEDENT EVER IN U.S. ARMED FORCES? (Yes or no): no

14a. RESIDENCE—STATE: Montana
14b. COUNTY: Lincoln
14c. CITY, TOWN, OR LOCATION: Libby
14d. STREET NUMBER: 617 W. 1st St.

14e. INSIDE CITY LIMITS? (Yes or no): yes
14f. ZIP CODE: 59923
15. ANCESTRY—Mexican, Puerta Rican, Cuban, African, English, Irish-German, Hmong, etc. (Specify): Norweigen
16. DECEDENT'S EDUCATION (Specify only highest grade completed)
Elementary/Secondary (0-12): 7
College (1-4 or 5 +):

PARENTS

17. FATHER'S NAME (First, Middle, Last): (unk.)
18. MOTHER'S NAME (First, Middle, Maiden Surname): Bertha Urdahl

INFORMANT

19a. INFORMANT'S NAME (Type/Print): Larry Urdahl
19b. MAILING ADDRESS (Street and Number or Rural Route Number, City or Town, State, Zip Code): 1600 Cabinet Ave. Libby, Mt. 59923

DISPOSITION

20a. METHOD OF DISPOSITION: XX Burial ☐ Cremation ☐ Removal from State ☐ Other (Specify)
20b. PLACE OF DISPOSITION (Name of cemetery, crematory, or other place): City of Libby Cemetery
20c. LOCATION—City or Town, State: Libby, Montana 59923

21a. SIGNATURE OF FUNERAL SERVICE LICENSEE OR OTHER PERSON IN CHARGE OF DISPOSITION: Mel Vial
21b. MONTANA LICENSE NUMBER (of Licensee): 238
22. NAME AND ADDRESS OF FACILITY: Vial Funeral Home, inc. P.O.Box 750 Libby, Mt. 59923

CAUSE OF DEATH

23. PART I. Enter the diseases, injuries, or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock, or heart failure. List only one cause on each line. (See Instructions on other side)

		Approximate Interval Between Onset and Death
IMMEDIATE CAUSE (Final disease or condition resulting in death)	a. Pulmonary Emboli	hrs.
	DUE TO (OR AS A CONSEQUENCE OF):	
Sequentially list conditions if any, leading to immediate cause. Enter **Underlying Cause** (Disease or injury that initiated events resulting in death) **Last.**	b.	
	DUE TO (OR AS A CONSEQUENCE OF):	
	c.	
	DUE TO (OR AS A CONSEQUENCE OF):	
	d.	

PART II. **Other significant conditions** contributing to death but not resulting in the underlying cause given in Part I.

24a. WAS AN AUTOPSY PERFORMED? (Yes or no): no
24b. WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETION OF CAUSE OF DEATH? (Yes or no): n/a
25. WAS CASE REFERRED TO CORONER? (Yes or no): yes

26. MANNER OF DEATH: XX Natural ☐ Pending Investigation ☐ Accident ☐ Could not be Determined ☐ Suicide ☐ Homicide
27a. DATE OF INJURY (Month, Day, Year)
27b. TIME OF INJURY M
27c. INJURY AT WORK? (Yes or no)
27d. DESCRIBE HOW INJURY OCCURRED
27e. PLACE OF INJURY—At home, farm, street, factory, office building, etc. (Specify)
27f. LOCATION (Street and Number or Rural Route Number, City or Town, State)

CERTIFIER

28a. TO BE COMPLETED BY CERTIFYING PHYSICIAN ONLY. To the best of my knowledge, death occurred at the time, date and place and due to the cause(s) stated.
(Signature and Title)
28b. DATE SIGNED (Month, Day, Year)
28c. HOUR OF DEATH M
28d. NAME OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER (Type or Print)

29a. TO BE COMPLETED BY CORONER ONLY. On the basis of examination and/or investigation in my opinion death occurred at the time, date and place and due to the cause(s) and manner as stated.
(Signature and Title): Mel Vial coroner
29b. DATE SIGNED (Month, Day, Year): 11/21/89
29c. HOUR OF DEATH: early a. M
29d. DATE PRONOUNCED DEAD (Month, Day, Year): 11/18/89
29e. PRONOUNCED DEAD (Hour): 1400 hrs M

30. NAME AND ADDRESS OF CERTIFIER (PHYSICIAN OR CORONER) (Type or Print): Mel Vial Lincoln County Coroner P.O.Box 750 Libby, Mt. 59923

REGISTRAR

31a. LOCAL REGISTRAR'S SIGNATURE: Henry L. Hawkes
31b. DATE FILED (Month, Day, Year): November 27, 1989

CLERK & RECORDER

WRG00373115
ED_005351_00000368-00361

CPD-VERM-LIBBY INSURANCE

~~[illegible]~~ FILE

QUITE A LOAD.
K

CNA/insurance
SEATTLE BRANCH OFFICE
Suite 808
Park Place Building
Seattle, Washington 98101

Mr. Earl Lovick
Administrative Assistant
W. R. Grace
P.O. Box 609
Libby, Montana

December 2, 1975

W. R. Grace
Marsh McLennan

W. R. Grace Company
Zonolite Division - Location #2503
Loss Prevention Service

This letter is to confirm my visit to your location on November 20, 1975. The purpose of this visit was our regular Loss Prevention survey.

I met with Mr. W. J. Melcher, your new Safety Director, who reviewed accident records with me and accompanied me on a survey of the various facilities. I also was introduced to Mr. R. L. Oliverio, Operations Manager. I am sorry that I was unable to meet with you at this time as you were on vacation.

A review of the accidents occurring since July 31 of this year revealed that the majority of accident types are in the category of struck by - 19%, yey injuries - 15%, caught-in, on, or between, and falls on level - 13% each, strains, sprains or over exertion - 15%. Approximately 83% of the accidents were the result of unsafe acts, primarily improper handling of materials, inattention, and failure to wear protective equipment.

I also conducted a management safety audit and as a result, I am submitting the following management recommendations along with the previous recommendations which were submitted during our last visit, as Mr. Melcher did not have a copy of these outstanding recommendations, and also because I did not have a chance to check on the recommendations at the time of this visit. All recommendations are being resubmitted with the exception of 75-9, as Mr. Melcher informed that this particular recommendation had been complied with.

The following are repeat recommendations:

75-1. (Mine Department) Install safety feet on all ladders

75-2. (Mine Department) Discontinue storage of any material on the electrical circuit panels.

75-3. (Mine Department) Some material was left by another department and was left lying on the ground. Housekeeping should be improved and other departments should not be allowed to leave any material in the area.

75-4. (Oil House at the Mine Department) Install drip pans below the oil discharge area at the oil storage drums.

75-5. (Oil House and the Mine Department) The solvent tank should have self-closing lid which will close automatically in the event of a fire in the tank.

75-6. (Mine Department) Install steel or concrete posts to protect propane tank from vehicle damage.

75-7. (Mine Department) All pulley belts on all machines should be completely enclosed and guarded.

75-8. (Loading Dock) Have a licensed electrician check the electrical wiring and up-grade according to code, especially the frayed wiring in the loading dock area.

75-10. Install drip pans beneath the oil discharge area of the oil cans at the loading dock area.

The Following are new recommendations:

75-11. Key management involvement should be manifested in a written safety program and key management safety tours of the premises.

75-12. All accidents, whether resulting in personal injury or property damage should be thoroughly investigated by the line supervisor with effective follow-up action.

75-13. Establish preventive maintenance program on tools and equipment with inspections recorded and effective follow-up.

75-14. General safety rules (being revised) should be enforced by management with annual management review and up-date.

75-15. Provide effective enforcement program for wearing of personal protective equipment.

75-16. Set up pre-job indoctrination of new employees, proper job instruction with new and reassigned employees, and maintain frequent employee safety contacts by line supervisors.

75-17. Provide adequate written first aid and emergency plans.

75-18. Set up emergency procedure drills.

As stated above, I made an inspection of all facilities, including mine, mill, garage, research, electrical laboratory, loading dock and in-town facilities.

I was very impressed by the proposed safety program and related safety plans as formulated by Mr. Melcher. I believe that implementatation of these plans should go a long way toward improving the loss picture at your facility. I left a supply of safety posters as well as a poster catalog with Mr. Melcher for his reference.

I have attached a copy of the Accident Analysis and Accident Cost Analysis for the period of July 1, 1974, through June 30, 1975, for your review.

I will be visiting your location again in February, but if I may be of service prior to that time, please advise.

Russell W. Huber
Senior Loss Control Representative

RWH:sla

copy

W. R. GRACE - Construction Products Division - Loc. #2503

Box 609

Libby, Montana

7/1/74 - 6/30/75

ACCIDENT TYPE	# of Accidents	% of Type	Cost	% of Cost
Striking Against	16	28.6%	$ 1,632.36	10.0%
Struck By	6	10.7%	1,133.95	6.9%
Struck By In Eye	5	8.9%	129.75	0.8%
Caught In, On Or Between	11	19.6%	2,325.00	14.2%
Falls On Level	2	3.6%	1,076.00	6.6%
Falls, Different Level	1	1.8%	55.95	0.3%
Strains, Sprains Or Overexertion	11	19.6%	9,883.63	60.5%
Exposure to Temperature Extremes	1	1.8%	54.26	0.3%
Inhalation, Ingestion or Absorption	1	1.8%	14.00	0.1%
Electric Shocks	1	1.8%	25.00	0.2%
All Others	1	1.8%	20.90	0.1%
	56	100.0%	$ 16,350.80	100.0%

W. R. GRACE - Construction Products Division - Loc. #2503

Box 609

Libby, Montana

7/1/74 - 6/30/75

Number of WC Accidents - 56

Total Cost - $16,350.80

Average Cost Per Accident - $291.97

REPEATERS

Name	# of Accidents	Dates	Cost
[redacted]	2	2/15/75 5/7/75	$ 2,050.00
[redacted]	2	1/12/75 2/23/75	$ 65.85
[redacted]	2	2/13/75 2/17/75	$ 328.94
[redacted]	3	1/14/75 3/7/75 4/23/75	$ 61.00

Nine or 16.1% of the accidents during this 12 month period involved the four repeaters listed above. These accidents accounted for $2,505.79 or 15.3% of the total cost.

LARGE LOSSES (Over $5,000)

Date	Claimant	Claim #	Description	Amount
7/9/74	[redacted]	19-126465	"Left shoulder and arm"	$ 8,000

CNA/insurance

LOSS PREVENTION DEPARTMENT

INDUSTRIAL ACCIDENT SUMMARY

INSURED W. R. GRACE - Construction Products Division - Loc. #2503

PLANT LOCATION Box 609, Libby, Montana

ACCIDENT PERIOD: FROM 7/1/74 TO 6/30/75

ACCIDENT TYPES	AGENCIES	NO OF ACCIDENTS	TOTAL TYPE	PERCENT OF TOTAL
STRIKING AGAINST	Machine 4; Blade 2; Beam 3; Unknown 7;	9 7	16	28.6%
STRUCK BY	Foreign object 1; Angle iron 1; Unknown 2; Hammer 1; Hot slag 1;	2 4	6	10.7%
STRUCK BY IN EYE	Foreign body 5;	5	5	8.9%
CAUGHT IN, ON OR BETWEEN	Machine 4; Pipe 1; Iron 1; Unknown 5;	6 5	11	19.6%
FALLS ON LEVEL	Rock 1; Unknown 1;	2	2	3.6%
FALLS, DIFFERENT LEVEL	Stairs 1;	1	1	1.8%
STRAINS, SPRAINS OR OVEREXERTION	Shovel 1; Bag 1; Hose 1; Stooping 1; Unknown 7;	3 8	11	19.6%
EXPOSURE TO TEMP. EXTREMES	Hot acid 1;	1	1	1.8%
DERMATITIS				
INHALATION, ABSORPTION OR INJESTION	Fumes 1;	1	1	1.8%
ELECTRIC SHOCKS	Unknown 1;	1	1	1.8%
ALL OTHERS	Bee sting 1;	1	1	1.8%
	TOTAL	56	56	100.0%

M5736-B

CNA/insurance

INDUSTRIAL ACCIDENT- CAUSE & INJURY ANALYSIS

INSURED W. R. GRACE - Construction Products Division - Loc. #2503

LOCATION Box 609, Libby, Montana

ACCIDENT ANALYSIS PERIOD FROM 7/1/74 TO 6/30/75

ACCIDENT CAUSES

UNSAFE ACTS	NO.	* % OF TOTAL	UNSAFE CONDITIONS	NO.	* % OF TOTAL
IMPROPER HANDLING OF MATERIALS	6	10.0	SLIPPERY FLOORS /STAIRS/AREAS		
IMPROPER LIFTING	6	10.0	DEFECTIVE FLOORS /STAIRS/AREAS		
IMPROPER USE OF TOOLS OR EQUIPMENT	8	13.3	INADEQUATE GUARDING	2	3.3
INATTENTION	9	15.0	IMPROPERLY STORED MATERIALS		
TAKING AN UNSAFE POSITION	18	30.0	ROUGH OR UNEVEN SURFACES		
FAILURE TO WEAR PROTECTIVE EQUIPMENT	6	10.0	POOR HOUSEKEEPING		
CLEANING OILING, ADJUSTING, ETC. OF MOVING MACHINERY			WINDBLOWN OR FLOATATION DUST	4	6.7
OTHER:			DEFECTIVE TOOLS OR EQUIPMENT		
			UNSAFE DESIGN OR ARRANGEMENT		
			OTHER: Bee 1;	1	1.7
TOTALS	53	88.3	TOTALS	7	11.7

* TOTAL NO. OF CAUSES-UNSAFE ACTS & UNSAFE CONDITIONS 60

INJURY SUMMARY

INJURY	NUMBER	PART OF BODY INJURED	NUMBER
BRUISES	15 - 26.8	EYES	5 - 8.9
CUTS & PUNCTURES	8 - 14.2	HEAD	4 - 7.2
STRAINS	13 - 23.3	TRUNK	13 - 23.3
EYE INJURIES	5 - 8.9	ARMS	2 - 3.6
FRACTURES	2 - 3.6	HANDS	8 - 14.2
DISMEMBERMENTS		FINGERS	8 - 14.2
DERMATITIS		LEGS	11 - 19.6
BURNS	3 - 5.4	FEET	
SLIVERS	2 - 3.6	TOES	
MULTIPLE		OTHER: Ear 2; Blood vessels 1; Teeth 2;	5 - 8.9
FATALITIES			
OTHER: Ear infection 1; Bee sting 1; Broken blood vessels 2; Broken tooth 1; Loss of teeth 1; Elec. shock 1; Inhalation 1;	8 - 14.2		

PERIOD	TOTAL ACC'S.	LOST TIME ACC'S.	DAYS LOST			MANHOURS	FREQUENCY		SEVERITY	
			CURRENT PERIOD	CARRYOVER PREV. PER.	TOTAL		MONTHLY	CUM	MONTHLY	CUM
TOTALS										

G-06340-C

CNA/insurance

INDUSTRIAL ACCIDENT CAUSE & INJURY ANALYSIS

INSURED W. R. Grace - Construction Production Division, Zonolite #2503

LOCATION Libby, Montana

ACCIDENT ANALYSIS PERIOD: FROM 3-15-75 TO 11-13-75

ACCIDENT CAUSES					
UNSAFE ACTS	NO.	* % OF TOTAL	UNSAFE CONDITIONS	NO.	* % OF TOTAL
IMPROPER HANDLING OF MATERIALS	9	23	SLIPPERY FLOORS /STAIRS/AREAS		
IMPROPER LIFTING	2	5	DEFECTIVE FLOORS /STAIRS/AREAS		
IMPROPER USE OF TOOLS OR EQUIPMENT	4	10	INADEQUATE GUARDING		
INATTENTION	9	23	IMPROPERLY STORED MATERIALS		
TAKING AN UNSAFE POSITION	3	8	ROUGH OR UNEVEN SURFACES		
FAILURE TO WEAR PROTECTIVE EQUIPMENT	5	13	POOR HOUSEKEEPING	3	8
CLEANING OILING, ADJUSTING, ETC. OF MOVING MACHINERY			WINDBLOWN OR FLOATATION DUST		
OTHER:			DEFECTIVE TOOLS OR EQUIPMENT	4	10
			UNSAFE DESIGN OR ARRANGEMENT		
			OTHER:		
TOTALS	32	82	TOTALS	7	18

* TOTAL NO. OF CAUSES-UNSAFE ACTS & UNSAFE CONDITIONS 39

INJURY SUMMARY			
INJURY	NUMBER	PART OF BODY INJURED	NUMBER
BRUISES	12	EYES	7
CUTS & PUNCTURES	8	HEAD	2
STRAINS	13	TRUNK	9
EYE INJURIES	7	ARMS	4
FRACTURES	3	HANDS	3
DISMEMBERMENTS		FINGERS	7
DERMATITIS	1	LEGS	10
BURNS		FEET	4
SLIVERS	1	TOES	
MULTIPLE		OTHER:	
FATALITIES			
OTHER:	1		

PERIOD	TOTAL ACC'S.	LOST TIME ACC'S.	DAYS LOST			MANHOURS	FREQUENCY		SEVERITY	
			CURRENT PERIOD	CARRYOVER PREV. PER.	TOTAL		MONTHLY	CUM.	MONTHLY	CUM.
15 thru 11-13-75	47	16	52	73	125					
TOTALS										

G-36340-C

WRG00373260

ED_005351_00000368-00370

CNA/insurance

LOSS PREVENTION DEPARTMENT

INDUSTRIAL ACCIDENT SUMMARY

INSURED W. R. Grace Construction Products Division Zonolite #2503

PLANT LOCATION Libby, Montana

ACCIDENT PERIOD: FROM March 15, 1975 TO November 13, 1975

ACCIDENT TYPES	AGENCIES	NO OF ACCIDENTS	TOTAL TYPE	PERCENT OF TOTAL
STRIKING AGAINST			4	8
STRUCK BY			9	19
STRUCK BY IN EYE eye injuries			7	15
CAUGHT IN, ON OR BETWEEN			6	13
FALLS ON LEVEL			6	13
FALLS, DIFFERENT LEVEL			5	11
STRAINS, SPRAINS OR OVEREXERTION			7	15
EXPOSURE TO TEMP. EXTREMES				
DERMATITIS			1	2
INHALATION, ABSORPTION OR INJESTION				
ELECTRIC SHOCKS				
ALL OTHERS	Stepped on nail	1	2	4
	TOTAL		47	100

N5736-B

Deskin, R.

907

DESKIN, ROBERT PL2 | 2/12 2/13 | GTD X | ASSURED | 6 P.M.

ARRIVAL	DEPARTURE
SGL	102
TYPE	RATE

LAST NAME FIRST

RM #

SPECIAL INSTRUCTIONS

GP31642
PL122652

B 16143

W R GRACE
52 WHITTEMORE AVE
CAMBRIDGE MA 02140

CLERK

2/4
RES. DATE

LG/OMAHA

MEMO	DATE	REFERENCE	CHARGES	CREDITS	BALANCE DUE	PICK-UP
4995						.00
1B	02/12/87	REF	2,615			
4B	02/12/87	LDST 623	.50		.50	734
9455						.50
2C	02/12/87	ROOM 623	102.[illegible]			
C	02/12/87	TAX 623	[illegible]		108.42	746

Robert Deskin

FEB 13 3 05

LAST BALANCE IS AMOUNT DUE

HYATT OAK BROOK

1909 SPRING ROAD
OAK BROOK, ILLINOIS 60521 USA
312 654-8400, TELEX: 285373

X _____
GUEST'S SIGNATURE

I AGREE THAT MY LIABILITY FOR THIS BILL IS NOT WAIVED AND I AGREE TO BE HELD PERSONALLY LIABLE IN THE EVENT THAT THE INDICATED PERSON, COMPANY OR ASSOCIATION FAILS TO PAY FOR ANY PART OR THE FULL AMOUNT OF THESE CHARGES.

BILL TO:

NAME _____
STREET _____
CITY-STATE _____
AUTHORIZED BY _____

SEND INQUIRIES TO: (1) AVIS RENT A CAR LICENSEE

MINIMUM CHARGE IS 1 DAY (24 HRS) PLUS MILEAGE. REFUELING SERVICES ADD'L.

41-07-L

844663956

(2) RENTAL AGREEMENT

METROPOLITAN AIRPORT
NASHVILLE, TN 37217
615-361-1212

AMOUNT DUE U.S.$ (62) 44.24

DOCUMENT NO.	(3) RENTAL LOC.	(4) CAR NUMBER	(5) OWN. LOC.	(6) RETURN LOCATION
844663956	1137	9300491	8388	NASHVILLE APO TN

(7) CAR DESCRIPTION	(8) LICENSE PLATE NUMBER	(9) AGREED RETURN AVIS LOCATION	(10) AGREED RETURN DATE/TIME
RED OLDS CIER 4DR	TN4N8F48	NASHVILLE APO TN	10FEB87/1200

(11)

(55) AUTHORIZATION NO. OUT/AMOUNT: 20568

(56) AUTHORIZATION NO. IN/AMOUNT: 25218

MILEAGE DETERMINED BY READING FACTORY INSTALLED ODOMETER

(24) TIME CAR WAS USED: 0 DY 3 HR

(25) FINAL MILES IN: 19253

(26) DATE/TIME WHEN RETURNED: 09FEB87/1232

(27) ORIGINAL MILES OUT: 19197

(28) DATE/TIME WHEN RENTED: 09FEB87/0846

(29) TOTAL MILES DRIVEN: 56 @ $

RATE CODE (12) T — IF I DON'T COMPLY WITH ALL SPECIAL RATE RULES, THAT RATE IS VOID AND A HIGHER RATE WILL BE CHARGED FOR THE ENTIRE RENTAL PERIOD, WHICH MAY INCLUDE MILEAGE AND/OR ONE-WAY SERVICE FEES. — FREE MILES: UNL

DISC.	ADD'L HOURS	DAILY RATE	WEEKLY RATE	ADD'L. DAYS	MILEAGE
PD	12.33	37.00	259.00	N/A	N/A

MOS 1036.00 MIN 1 DA

RATES:
(30) ADD'L. HOURS @ $ 12.33
(31) DAYS 1 @ $ 37.00
(32) WEEKS @ $ 259.00

A REFUELING SERVICE CHARGE WILL BE APPLIED IF I CHOOSE TO RETURN THE CAR WITH LESS FUEL THAN WHEN RENTED, AS EXPLAINED ON REVERSE SIDE.

(33) MOS1036.00

FUEL OUT: B — FUEL IN:
(13) REFUELING SERVICE CHG. PER MILE: .0781/MIL
(13A) REFUELING SERVICE CHG. PER GAL: 1.650

(34) MINIMUM/OT/E 56 FM 37.00

(14) LOCAL CONTACT/ADDITIONAL INFORMATION: HILTON

(35) ADJUSTMENTS —

(15) AWD NUMBER: A/A186817

(15A) FREQUENT FLYER NO./REMARKS: AD/0942292

(37) ARC/IATA NO.

(36) ADD 29 THRU 35: 37.00

(16) CX4115800003099
DESKIN,ROBERT C
N R GRACE CAMB LEX
397 HIGHLAND AVE
WINCHESTER,MA,01890

CV

(37A) YES — TA COM

(37B) PD %

RENTAL WILL BE PAID BY

(38) TIME AND MILEAGE CHARGE: 37.00

(39) ONE-WAY SERVICE FEE

(40) MISCELLANEOUS +

(42A) (CDW) COLLISION DAMAGE WAIVER READ TERMS ON OTHER SIDE.
I ACCEPT | I DON'T ACCEPT: X | RATE PER DAY: N/A

(41) REFUELING SERVICE (TAXABLE) +

(42) RESPONSIBILITY $ 3000 +

(17) DRIVER'S LICENSE NUMBER: MA493287834

(18) SPACE #

(46A) PERSONAL EFFECTS PROTECTION (PEP) INSURANCE READ OTHER SIDE.
I ACCEPT | I DON'T ACCEPT | RATE PER DAY

(43) SUB TOTAL: 37.00

(19) WIZARD NUMBER: W/ER890K

(20) RESERVATION NUMBER

(44) TAX OR SURCHG. 7.754: 2.87

IF I ACCEPT PERSONAL ACCIDENT INSURANCE THEN MY BENEFICIARY IS (YOU WILL PAY MY ESTATE IF NO BENEFICIARY IS NAMED). STATE RELATIONSHIP.

(46B) (PAI) PERSONAL ACCIDENT INSURANCE READ INSURANCE CERTIFICATE ON BACK OF COPY 4
I ACCEPT | I DON'T ACCEPT: X | RATE PER DAY: 3.00

(45) REFUELING SERVICE (NON-TAXABLE) +: 4.37

(46) TOTAL PAI, PEP +

(21) I HAVE READ AND AGREE TO THE TERMS ON BOTH SIDES OF THIS AGREEMENT. IF I HAVE PRESENTED A CREDIT CARD FOR PAYMENT, ALL CHARGES, INCLUDING PARKING TICKETS, MAY BE BILLED TO THE CREDIT CARD AND MY SIGNATURE BELOW WILL BE CONSIDERED TO HAVE BEEN MADE ON THE APPLICABLE CREDIT CARD VOUCHER.

(23) PREPAYMENT: CASH | CHK | VOUCH.
$ NPR

(47) TOTAL CHARGE: 44.24

(48) ON-THE-ROAD EXPENSES —

$

(49) NET CHARGE: 44.24

$ —

X

(22) CORRECTED BILLING NAME AND ADDRESS

CLUB BILLING

(50) CASH | CENT. | CLUB: CX | DIRECT | AMT. DUE U.S. $: 44.24

(51) CASH REFUND REC'D. X — REFUND FROM HQ'S | TRAVEL AGENT

(52) RENTAL AGENT ID: 41753

(53) RETURN AGENT ID: 41761

(54) ACTUAL RETURN LOC.: 1137

(61) LAST EXCHANGE LOCATION

DOCUMENT NUMBER — THIS 9 DIGIT NUMBER MUST BE WRITTEN ON ALL LETTERS AND PAYMENTS: 844663956

(69) CASH REFUND RECEIVED X $

(42) RESPONSIBILITY — IF CDW IS NOT ACCEPTED, RENTER WILL BE RESPONSIBLE FOR ALL DAMAGE TO THE CAR AT THE PREVAILING RETAIL PRICE FOR PARTS AND LABOR UP TO A MAXIMUM OF THE PREVAILING RETAIL VALUE OF THE RENTAL CAR IF IT IS DAMAGED BEYOND REPAIR.

	CHECK-OUT WIZARD III	CHECK-IN CORPORATE	CHECK-IN LICENSEE
	SEND WITH CUSTOMER	CUSTOMER COPY	CUSTOMER COPY

CONTROL NUMBER

CUSTOMER'S MEMO 5

I AGREE TO PAY ALL CHARGES FOR PARKING AND TRAFFIC VIOLATIONS.

F-19 (Rev. 7/86) Page 2 Copyright © 1986 Avis Rent A Car System, Inc

B 069142

ROOM	LAST (NAME)	FIRST	INITIAL	RATE	OUT DATE
302	Deskin, Robert		2/9 2	26	

CITY	STATE	IN DATE
Franchester, Ma.		

STREET	R	C.R.	N.R.

ROOM CLERK: JAB 2/8

DATE	REFERENCE	CHARGES	CREDITS	BALANCE	PICKUP
FEB-8	ROOM 302	* 26.00		* 29.06	* A* 29.06
FEB-8	TAX 302	* 3.06			
FEB-9	PHONE 302	* 1.20	A* 1.20	* 29.06	
FEB-9 CASH	302				

I AGREE THAT MY LIABILITY FOR THIS BILL IS NOT WAIVED AND AGREE TO BE HELD PERSONALLY LIABLE IN THE EVENT THAT THE INDICATED PARTY FAILS TO PAY FOR ANY PART OR THE FULL AMOUNT OF THESE CHARGES.

GUEST SIGNATURE

American Airlines
CHARGE TO
151602
STREET
CITY STATE

HILTON AIRPORT INN
#1 INTERNATIONAL PLAZA
NASHVILLE, TENNESSEE 37217

Rates do not include applicable Sales, Occupational, or other

FO-190

Form, Serial Number

789207970 9 WESTWW

HPSGRCPN

ARC PASSENGER COUPON

ORIGIN/DESTINATION BOSTON

DATE OF ISSUE 04 FEB 87

BOOKING REFERENCE

NOT TRANSFERABLE

ISSUED IN EXCHANGE FOR

ENDORSEMENTS/RESTRICTIONS (CARBON)

PASSENGER NAME DESKIN/R

XO	FROM	TO	CARRIER	FLIGHT	CLASS	DATE	TIME	STATUS-FARE BASIS/TKT. DESIGNATOR	BAGGAGE CHECKED UNCHECKED	PCS.	WT.	UNCHECKED	PCS.	WT.
	BOSTON	CHICAGO-O'HARE	UA	317	Y	12FEB	0630A	ON Y						
	CHICAGO-O'HARE	BOSTON	UA	1007	Y	15FEB	0210P	ON Y						
	BOSTON													

NOT GOOD FOR PASSAGE BEYOND

FARE CALCULATION BOS UA CHI 317.51 291.97 UA BOS 291.97 583.95

FARE 583.95

EQUIV. FARE PD.

TAX 46.00

TOTAL

FORM OF PAYMENT TP 1015 AA1 AA1 AA1

CPN 016 AIRLINE CODE FORM SERIAL NUMBER 7892079709 3 CK

ORIGINAL ISSUE

TOUR CODE

DO NOT MARK OR WRITE IN THE SPACE ABOVE

AL-AGT INFO. 552.54

CONTROL NO. 3341035788222

PRINTED IN U.S.A. BY RANO MONALLY

AVIS

TRANSACTION RECORD

RENTAL NUMBER	CAR NUMBER	CAR GROUP
338776583	7350486	C

DESKIN,R

*CU CX4115800003099

OUT ORD 12FEB87/0852

IN ORD 13FEB87/1243

MI-OUT 08748 MI-IN 08891

143 MI@	=	
3 HR@ 13.33	=	39.99
1 DY@ 40.00	=	40.00
WK@280.00	=	
TOTAL TIME/MIL	=	79.99
NET TIME/MIL	=	79.99
ONE WAY FEE/MSC	=	
TAXABLE SUBTOT	=	79.99
TAX 12.000%	=	10.60
REFUELING CHG	=	
CDW	=	
PAI	=	
AMOUNT DUE	=	90.59

* SEE REVERSE

LOGAN INTERNATIONAL AIRPORT

EAST BOSTON, MASS.

DATE 2 0

THANK YOU

THIS IS YOUR RECEIPT

SOUTHLAND PRINTING
SHREVEPORT, LA.
80405

RC-31

MOBIL OIL CORP. 0/0885 0A515
SCHILLER PK,IL, EAST
2 4.3196AL BL @ 0.949 = 4.10
TOTAL SALES = 4.10
AMOUNT DUE = 4.10

WRG0037469

W.R. Grace & Co. 62 WHITTEMORE AVE., CAMBRIDGE, MA 02140

GRACE

INVOICE NUMBER	INVOICE DATE	VOUCHER NUMBER	GROSS AMOUNT	DISCOUNT	NET AMOUNT
021487	021487	601701	307.66		307.66

FEB 23 1987

FEB 23 1987

CHECK NUMBER	CHECK DATE	VENDOR NO.	VENDOR NAME	TOTAL AMOUNT OF THIS CHECK
150638	022387	493287834	ROBERT C. DESKIN	307.66

WHEN ENDORSED THE ATTACHED CHECK IS AN ACKNOWLEDGMENT OF THE RECEIPT OF FULL PAYMENT OF THE ITEMS DESCRIBED IN THIS STATEMENT.

150638

CHECK NUMBER

GRACE

W.R. Grace & Co.
CAMBRIDGE, MA 02140

6-39
110

TO: FIRST NATIONAL BANK OF BOSTON
BOSTON, MASSACHUSETTS

150638

PAY

THREE HUNDRED SEVEN AND 66/100 DOLLARS

PAYMENT DATE	AMOUNT
02 23 87	$ ********307.66

W.R. Grace & Co.

TO THE ORDER OF ROBERT C. DESKIN
CAMBRIDGE

NON-NEGOTIABLE

⑈150638⑈ ⑆011000390⑆529⑈2052⑈

WRG00373470

ED_005351_00000368-00377

FORM 87-27M (10/83)

ROUTING
1. ~~J W Wolter~~
2. CPD CASHIER
3.
4.

WEEKLY EXPENSE REPORT

GRACE

CONSTRUCTION PRODUCTS DIVISION

C P D

VOUCHER # DATE

NAME: ROBERT C. DESKIN (PLEASE PRINT)

493 287 834 (SOCIAL SEC. NO.)

VOUCHER NO.

(1) DATE	(2) LOCATION FROM/TO	(3) DAILY MILES	CODE	(4) G-Gas H-Hire M-Maint O-Oil P-Park T-Toll W-Wash	(5) A-AIRLINE R-RAILROAD	(6) A-AIRLINE R-RAILROAD	(7) B-BUS C-LIMO S-SUBWAY T-TAXI	(8) HOTEL ROOM	(9) MEALS (INCLUDE TIPS)	(10) TELEPHONE & TELEGRAPH	(11) CUSTOMER & MISC. EXPENSE (EXPLAIN IN BLOCK 12)
SUN. MO. DAY 2 8									B L D		
MON. MO. DAY 2 9	NASHVILLE		H	44 24					B 4 15 L D	1 20	
TUE. MO. DAY 2 10									B L D		
WED. MO. DAY 2 11									B L D		
THUR. MO. DAY 2 12	BOSTON/ CHICAGO	13	T	2 70		A 632 50		108 12	B L D 16 75	75	
FRI. MO. DAY 2 13	CHICAGO/ BUSTON	13	P T H G	20 00 2 20 90 59 4 10					B 3 65 L 3 75 D		
SAT. MO. DAY 2 14									B L D		
TOTALS	WK'S MI. @ 21 / PERS. MI. @ / AUTO EXPENSES	26 ( )	$ 5 46 ($) $ 169 29	$	$ 632 50	$	$ 108 12	$ 28 30	$ 1 95	$

TRANSPORTATION: AUTOMOBILE; AIRLINE & RAILROAD PAID BY ME; AIRLINE & RAILROAD COMPANY PAID; LOCAL

BATCH 0 1 7 0 1 FEB 20 87

BUS DATE

ITEM	D	LL	BC	DEPT	PRIM	SUB	AMOUNT
TELEPHONE	6	01	98	9070	X015	0000	1 95
TRAVEL	6	01	98	9070	X016	0000	~~28 30~~ 909 91
CUSTOMER ENTERTAINMENT	6				X016	0001	
LEASED CAR EXPENSES	6				X017	0000	
OTHER(S) SPECIFY Meals	6	01	98	9070	X016	0002	28 30

FINAL APPROVAL: Paul Wolter

TOTAL EXPENSES → 940 16

AIR TRAVEL CHARGED TO COMPANY

LAST TEN DIGITS OF TICKET NUMBER	D	LL	BC	DEPT	PRIM	SUB	AMOUNT
7892079709	6			0000	B385	0000	632 50
MSG	6			0000	B385	0000	
TOTAL OF B385 →							
TOTAL CREDIT ADVANCE ACCOUNT	6		00		A511	0000	
PLEASE PAY ME BY CHECK →							307 66

SEE REVERSE SIDE FOR SPECIAL INSTRUCTIONS. NOTE: REVERSE SIDE MUST BE COMPLETED PRIOR TO YOUR RECEIVING PAYMENT.

☐ OWN CAR
☐ CO. CAR

	PERSONAL	COMPANY
PREVIOUS MILES		
WEEKS MILES		26
YEAR-TO-DATE MILES		

ADVANCE ACCOUNT RECONCILIATION	AMOUNT
BALANCE BEGINNING OF WEEK	
ADVANCES	
TOTAL EXPENSE REPORT	( )
BALANCE END OF WEEK	

(12) CUSTOMER & MISCELLANEOUS EXPENSE EXPLANATION

MO. DAY
MO. DAY
MO. DAY
MO. DAY
MO. DAY

EXPENSES FOR WEEK-ENDING Feb 14, 1987

SIGNED: R C Deskin DATE: 2-18-87

MAIL CHECK: Cambridge office

APPROVAL FOR PAYMENT:

HAFF BUSINESS FORMS, HINGHAM, MA (617) 749-4456

WRG00373471

ED_005351_00000368-00378

Encore
1996

FAX COVER PAGE

To: Joe Rogan		From : Mike Balcer
Fax Number : 1-617-547-7663		Company : W.R. Grace & Co.
Date : 9/6/96	Time : 10:55:14	For Information Call: 864-969-3353 ext. 279
Subject : FW:		Fax Number : 864-969-3800

fyi

Michael J. Balcer

Created using WinFax PRO 3.0 Delrina Technology Inc.

F.Y.I. 1/6/96
Mike Balcer

Fatalgram

Date

U.S. Department of Labor
Mine Safety and Health Administration
Metal and Nonmetal Mine Safety and Health

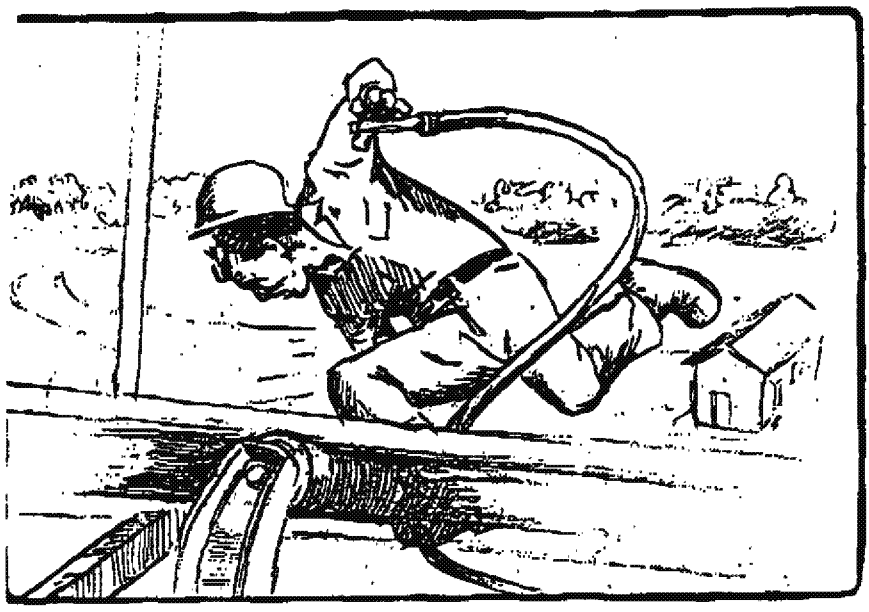
MSHA 8000-7, June 87

A 24 YEAR OLD EQUIPMENT OPERATOR WITH 13 MONTHS MINING EXPERIENCE WAS FATALLY INJURED WHEN HE FELL 30 FEET FROM THE HEAD PULLEY OF A 24-INCH WIDE INCLINED CONVEYOR. THE CONVEYOR WAS USED AS A WALKWAY TO ACCESS THE HEAD PULLEY AND AS A WORK PLATFORM TO WASH OUT THE TRANSFER CHUTES. STEEL CABLE HANDRAILS WERE LOCATED 3 FEET ABOVE THE WALKING SURFACE ALONG THE LENGTH OF THE BELT WITH THE EXCEPTION OF THE LAST 10 FEET WHERE THE HANDRAILS SLOPED TO JUST 12 INCHES ABOVE THE CONVEYOR NEAR THE HEAD PULLEY. IT IS BELIEVED HE WAS STANDING ON THE HEAD PULLEY WHEN HE LOST HIS BALANCE AND FELL OVER THE 12-INCH HIGH CABLE HANDRAIL TO THE DOCK BELOW.

RECOMMENDATIONS:

*ELEVATED WALKWAYS SHOULD BE PROVIDED WITH SUITABLE HANDRAILS THAT ARE MAINTAINED IN GOOD CONDITION.

*SAFETY BELTS AND LINES SHOULD BE WORN WHERE THERE IS A DANGER OF FALLING.



96-221

Death Toll	Period Covered:			
Year	Underground	Surface	Mills	Total

Do Your Part to Keep the Toll Down!
Safety is Everybody's Business

Fatalgram

U.S. Department of Labor
Mine Safety and Health Administration
Metal and Nonmetal Mine Safety and Health
MSHA 8000-7, June 87

Date

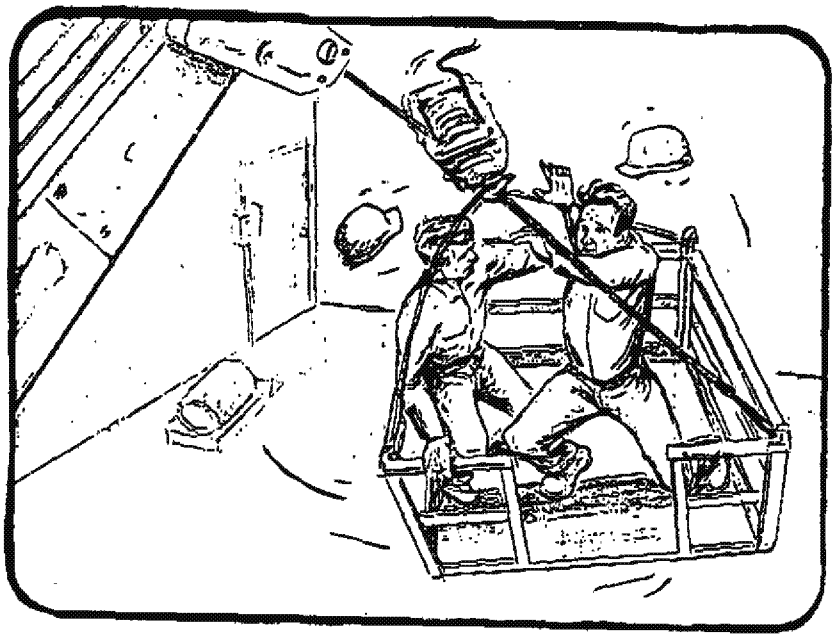
Potential problem

A 44-YEAR OLD MAINTENANCE WORKER WITH 1 YEAR AND 9 MONTHS EXPERIENCE WAS FATALLY INJURED AND A 39-YEAR OLD LABORER WITH 5 MONTHS EXPERIENCE WAS SERIOUSLY HURT WHEN A CRANE HOIST CABLE BROKE AND THE WORK BASKET FELL TO THE GROUND. THE TWO MEN WERE PREPARING TO REPLACE A MOTOR ON TOP OF A MILL CYCLONE AND HAD BEEN LIFTED IN THE BASKET BY A MOBILE CRANE ABOUT 12 FEET WHEN THE MAIN SHEAVE BLOCK CONTACTED THE STATIONARY SHEAVE BLOCK. THE HOIST ROPE BROKE AND THE BASKET FELL TO THE GROUND FOLLOWED BY THE MAIN SHEAVE BLOCK WHICH STRUCK THE TWO MEN. AN INVESTIGATION DETERMINED THAT THE CRANE HAD SEVERAL SAFETY DEFECTS WHICH CONTRIBUTED TO THE ACCIDENT AND THAT THE CRANE WAS NOT DESIGNED TO LIFT PEOPLE.

RECOMMENDATIONS:

DEFECTS AFFECTING SAFETY SHOULD BE CORRECTED IN A TIMELY MANNER. WHEN DEFECTS ARE NOT IMMEDIATELY CORRECTED, EQUIPMENT SHOULD BE TAKEN OUT OF SERVICE UNTIL THE DEFECTS ARE REPAIRED.

EQUIPMENT SHOULD NOT BE USED BEYOND ITS DESIGN CAPACITY.



96-222

Death Toll Period Covered:

Year	Underground	Surface	Mills	Total

Do Your Part to Keep the Toll Down!
Safety is Everybody's Business

Fatalgram

U.S. Department of Labor
Mine Safety and Health Administration
Metal and Nonmetal Mine Safety and Health
MSHA 8000-7, June 87

Date

Potential problem

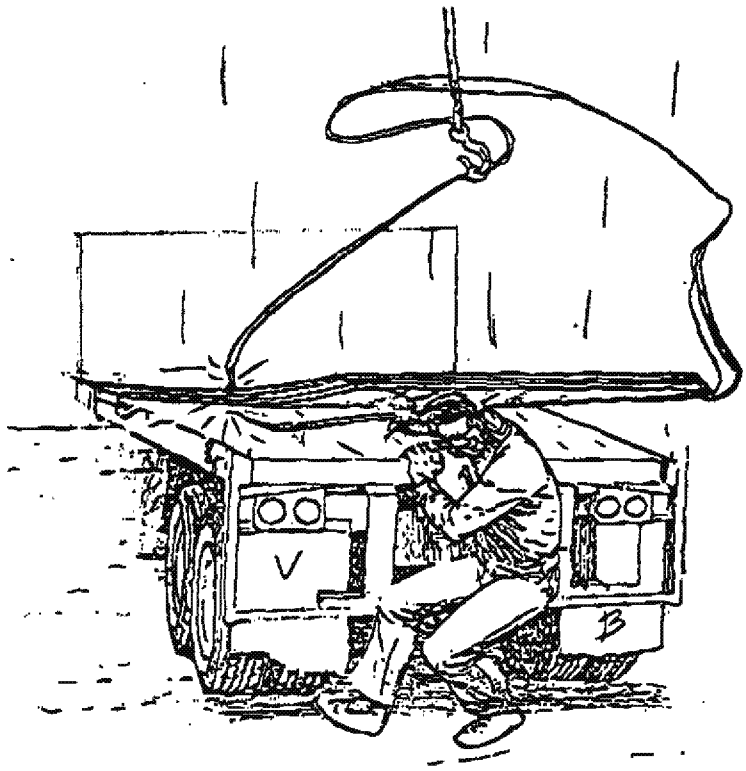
A CONTRACTOR TRUCK DRIVER WAS FATALLY INJURED WHEN HE LEFT HIS CAB AND WALKED TO THE REAR OF A TRUCK WHILE HAVING STEEL SHEETS OFF-LOADED AT A MILL SITE. ONE END OF THREE 8 FEET BY 24 FEET BY 1/4-INCH STEEL SHEETS WEIGHING A TOTAL OF 5,875 LBS. EXTENDED OVER THE REAR OF THE TRUCK. A 4-INCH BY 20-FEET NYLON SLING WAS USED TO RAISE THE EXTENDED END OF THE SHEETS WAS CUT BY THE SHARP EDGES OF THE STEEL CAUSING THE SHEETS TO FALL STRIKING THE VICTIM. THE VICTIM WAS NOT WEARING A HARD HAT.

RECOMMENDATIONS:

*PERSONS SHOULD STAY CLEAR OF SUSPENDED LOADS.

*SLINGS USED TO HOIST MATERIALS SHOULD BE SUITABLE FOR THE PARTICULAR MATERIAL BEING HANDLED.

*PERSONS SHOULD WEAR HARD HATS WHERE FALLING OBJECTS MAY CREATE A HAZARD.



96-223

Death Toll	Period Covered:			
Year	Underground	Surface	Mills	Total

Do Your Part to Keep the Toll Down!
Safety is Everybody's Business

GRACE

Grace ConstructionProducts
Enoree/Kearney Operations

2/12/96

TO: Steve Munyan, Lyle Kuper, Jim Briggs

FROM: Mike Balcer

SUBJECT: February Safety audit (Fuel Tank farm, Scales Shack, Used Oil tank Monitor Shack, Pit Area & Truck, Wet Mogensen Building, Reagent tank farm)

cc: Jeremy Gray
Dick Lyons
Ron Mercer
Richard Wright (Mine Crew)

Audit was conducted on February 9, 1996. The session lasted approximately 2 hours starting at 7:30 am. Audit team consisted of myself, Ron Mercer (Expander Dept.), Richard Wright (Mine Dept.). I chose to use people from outside the area inspected to facilitate some different comments and observations. I initially described the obvious things to look for as well as giving them the option of writing down their own concerns. Across the board we all made the same conclusions.

Weather conditions in the past three weeks have made the road surface through the plant site muddy even on paved surfaces. At present time of this audit it was a windy, sunny day, with morning dampness.

Fuel Tank farm Observations

- Expanded metal casing over the drain pipes on the exterior wall was loose and easily moved by applying foot pressure, needs to be secured properly.
- Walkway and gas tank showing signs of paint erosion.
- Loose items on containment wall, such debris, and other items need to stored properly or discarded.
- Gas fuel pump had loose molding jutting out from frame, puncture hazards on both sides.
- Placards on backside of Diesel tanks peeling off
- Diesel fuel housing needs to have better securement to frame, currently being held by elastic rubber strap.
- Hoses on all fuel stations showing cracks and fraying

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- Warning signs are on the pumps themselves, they were visible but dirty, but there should be signs in the containment area itself.
- Piping needs painting as well as pipe identiciation
- Flooring footing was slimy and slippery, still some residue left over from last week cleanup
- Hand rail should be provided for cross over walkway to second containment area.
- Some ground erosion in front of gas pumps
- Gasoline sign not listed or visible.

Scales House

- Awning over door needs repair or replacing, jagged edges and poor securing to building
- Door needs to be replaced, extremely flimsy, cracked around lock casing, multiple glass panes cracked or broken, held to together by tape.
- Door to computer housing open leaving wires exposed
- Wire from ceiling dangling down to the deck area
- Drop cords in the middle of the floor
- Items stored in room need to stored properly or removed
- Miscellaneous scale parts that are broken laying around building
- Fan without ground plug
- Mud collected around stairway leading to shop area, leaving a few steps unusable
- Mud in ditch has reached the bridge section, obscuring walkway
- Building in need of painting, shrubbery overgrown
- weeds along side of building
- Bay window, bottom middle pane cracked
- Glass top on table is cracked in several places, covered by duct tape, needs to be discarded

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Used Oil containment tank Observations

- No sign to disclose tank contents
- "No Flames and lighted matches": on tank, but in need of being replaced, weathered badly
- Containment tank has @ 8 inches of water inside
- Weeds and rag debris in and around pit area, road sign leaning into road surface, pole has been bent
- Roof material is from metal siding, has sharp edges all around it
- framing could use new paint
- Oil measuring stick needs to be properly stored

Monitor Pit, building & Rock truck Observations

- Lots of hoses, conduit, metal, wire and process debris laying around building and in front of monitor pit, all in walking areas
- Pit area needs railing along the edge of containment wall
- Truck sitting in very muddy area, truck had back wheels perched on what seemed to be the retaining wall
- Road surface breaking up and broken leading to Monitor
- Road surface in the immediate area very muddy, rocks in area, there was no berming along either drop off, driver had to enter from passenger side when we asked to check out truck
- Exterior Hydraulic pump to the Ramie Loader covered in mud and debris
- Wood retaining wall on east side is rotting
- Drain near the Ramie loader almost closed off by debris
- Road surface on bank side of road rail is eroding
- Walk ways to Mill staircase and Mogenson building muddy and uneven
- Signs needed around Ramie loader warning of possible danger

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- Drop cord plugged into outside electrical plug draped into building for no apparent reason

Rock truck

- Windows, mirrors, truck very dirty inside and out, front windshield had a @ 11 inch half moon crack in it
- Floor of truck had a lot of dried mud on it
- Windshield wipers need replacing
- Right rear brake canister housing missing, right rear running light out, right outside front tire was flat
- Box exterior rough and rusting, numerous spot welding observed
- No tailgate on truck, process spillage and water evident when truck pulled away from parking area

Monitor building

- Fluorescent lighting flickering on and off, bulbs need replacing
- Debris in building, mud, tools, hose pieces, clothing, nut and bolts, magazines
- Large radio did not have approved grounding plug, antennas were at eye level
- Plexiglas windows severely scratched
- Railing and steps, and building need to painted

Mogenson building

- Road surface to walkway is several inches higher, surface uneven due to road condition, railing should be extended to compensate
- Break in the expanded metal walkway, 4 sections down, @ 3-4 inch hole
- Railing and elevated walking ramp need to painted
- Half deck of building had some process overflow on steps, top of the rod mill building had at least 1 ton of overflow. This structure will not support this type of weight.
- Debris such hoses, screens, pieces of metal strewn along walkway
- Crawl space behind screens showing process overflow on floor several inches deep

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- Door leading into main floor severely rusted at bottom, ragged, jutting metal exposed
- Hoses, metal bars, nuts and bolts, welding leads either strewn on floor or not properly stored
- Flooring felt spongy in some areas, rusting obvious where spillage wasn't covering it
- Spillage was throughout the building form a light covering on walls and fire extinguisher to several inches deep on floor and cyclone deck
- Chains not set in place on elevated surface
- Several pipes had small leaks evident
- Double doors both rusted severely, jagged, rough edges exposed, need replacing. A kick plate needs to be put at base of the door way
- Electrical cord left on floor
- Open area around piping through floor needs to have toe guards around them
- Broken window pane on opposite wall
- East wall showed numerous signs of rusted , broken wall structure

Reagent Tank Farm

- Debris along walkways and landings in the form of buckets, shovels, caulking, rain caps, etc. Square head shovel upright through the expanded metal
- Chain guards along the driving surface should be replaced with more rigid material such as pipe rail
- Containment has no signs as to "No Smoking or Open flames" variety
- Need for more fire extinguishers
- Evidence of Amine, Alum, and Oil spills of varying amounts, Alum residue as well as oil residue on tanks at least their entire length
- Combination of debris, mud, remnants of reagents made for very treacherous walking while auditing
- Some exterior debris in the form of pipes and tools noted
- Fuel oil placard not visible due to spill down tank side

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- Lines from tank farm to mill as well as hookup lines need to labeled for contents
- Sump pump pit open and exposed with no covering, 1-1/2 ft drop off
- Pump seems to be suspended and anchored by a long 2x4 straddling the edge of containment wall and bailing wire
- Exposed wiring leading to pump should be in conduit

Conclusion:

Depending on the area that was audited, please indicate an action plan for the affected areas this week and submit it to me in writing by 2/19/96. There are obvious short term corrections that can be easily dealt with, and long term corrections that may facilitate doing them at a later date. These sites will be re-audited at the end of the month to see how we have progressed in the corrections. I would like to thank Richard Wright, Ron Mercer for their time and effort and insights during the audit. I also would like to extend a thank you to Steve Munyan for allowing the use of Richard's services, especially being short handed with the Haul crew.

Fax Cover Page

SUBJECT:

Jeremy,

First of many audits! Session lasted 2 hours. FYI.

Sincerely,

Mike B

To: Gray, Jeremy	From : Mike Balcer
For Information Call: 864-969-3353 ext. 279	At: W.R. Grace & Co., Enoree, SC
Pages: 7	My Fax Number : 864-969-3800

Created using WinFax PRO 3.0 Delrina Technology Inc.

June '96 EHS Report

lume 3, No. 6 Enoree / Kearney Environmental, Health & Safety Monthly Report for the month of June 1996 JUNE 24, 1996

SAFETY - (ENOREE)
Accidents, Incidents, Near Misses

Enoree had 1 incident , no accidents, & or near miss reported during the month.

96 - 013 - (6/19 /96) The Mine Dept. Had an incident involving a wasp sting to a Summer Student laborer. Employee was weed eating on a hillside near the mill. He had no allergic reaction, he required no first aid, and was instructed to isolate area from any further work till area could be sprayed.

There were no recordable accidents or lost time accidents this month.

SAFETY - (Kearney)
Accidents, Incidents, Near Misses

Kearney had one first aid accident, no near misses reported during the month.

96 - 011 - (6/14 /96) The Expander Dept. had a first aid accident involving a bagger / loader when he bruised his ribs when he walked into the side of one the sewing machines. In effort to try to keep the loading station from backing up the furnace, employee was hurrying to keep up and became

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HEALTH

Attended Worker's Compensation Commission informal meeting in Prosperity, SC for determination of permanent disability rating on Johnny Sherbert's hand. Case was actually postponed as Commissioner suggested that a second physician's option be attained.

TRAINING

New Employee Safety orientation training for 2 new Expander employees completed week of June 21. Class session lasted 6+ hours

24 hour New Miner training completed for Neil Stephens (summer student).

MSHA refresher training completed for 2 returning summer students, Jarvis Reeeder and Drew Munyan last week in May.

The first 8 hours of MSHA 24 hour New Miner training completed for Laurie Riser (summer student) June 21. An additional 16 hours remain for completion.

SPECIAL PROJECTS

Due to involved month of MSHA New miner training, Expander New Employee training and finally MSHA refresher training, the normal audit program was not continued as normal. The attached quick audit was conducted to take advantage of the 1 day break in our MSHA inspection (see attached report).

WRG00373717
ED_005351_00000368-00391

June '96 EHS Report

ENVIRONMENTAL

After a several weeks of hard work, correspondence & conference calls between myself, Jay Burrill - Camb, Maria Knutsen - Legal/Boca, Thomas Pritcher & Dale Haase of Rogers & Callcott Engineers about our potential compliance issue with NSPS Subpart OOO standard for stack emissions, we received the following letter from SCDHEC. I would personally like to thank those mentioned for their diligence, patience and hard work in helping us draft a response letter correct this situation. Issue has been cleared up and DHEC has agreed with our explanation (see attached letter).

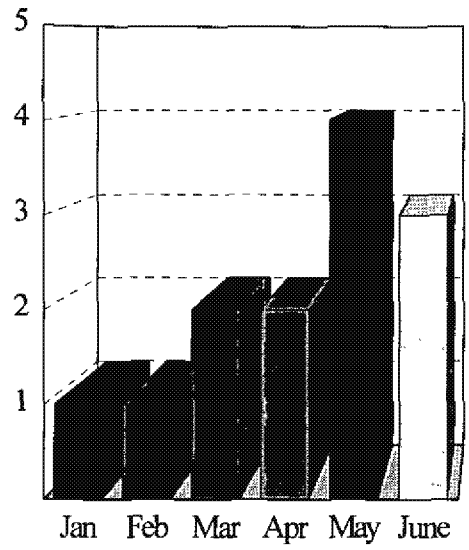
Attended a meeting with David Scott of Rogers & Callcott Engineers on status of Storm water & NPDES permits for mill and Mine sites. We are working with SCDHEC to affirm status of current permits, opened, closed and reclaimed sites to minimize duplication work. This is an ongoing project.

Met also with Lee Bryson and Thomas Pritcher on setting up the compliance testing of the 5th furnace that went on line in April. There are many issues to complete before the actual testing. I will be updating Ron Mercer as to the needs and requirements for the said testing, current date set is 2nd week in August.

OTHER

We received our second bi-annual MSHA safety inspection by Inspector Lee Killian and regional Supervisor Merle Slayton. Conclusion of inspection resulted in 3 Single Penalty Assessments, considered as minor citations. (See attached report)

1996
PossibleAccident/Incident/Near Miss



Totals

1996 incidents by month for Enoree / Kearney operations. January & February incidents resulted in 1 OSHA recordable, 1 MSHA recordable. Neither was a lost time accident. Current total of 13 possible accidents, incidents, or near misses reported.

GRACE

Grace Construction Products
Enoree / Kearney Operations

TO: Lyle Kuper, Jim Briggs

FROM: Mike Balcer

SUBJECT: Wednesday Morning Quick checklist for Thursday Morning MSHA Inspection

DATE: Wednesday, June 12, 1996

cc: Joe Rogan
Dick Lyons

The following list of items are observations made from a walk around of the Dry & Wet Mill areas that can be quickly attended or fixed in anticipation of our scheduled MSHA inspection by Lee Killian & Merle Slayton on Thursday.

Wet Mill

➢ Remove Mud pile from yard and scrap mud away from doorway, wash down immediate area

➢ Bottom floor (in the hole) wash debris from grating and walkway, remove all limbs. Check all grating and clean

➢ ***Flood light along wall out, half way down before sump***

➢ Same goes for half deck near rock belts lots of rock, limbs and other debris should be moved

➢ ***Guard rail has broken weld on pipe leaving substantial opening***

➢Same goes for Trommel rock screen near rock belt, lots of rock, limbs and other debris should be moved

➢ Walkway ramp leading out to back side of mill near mixing tanks, needs material to shoveled off ramp

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➢ ***Rock belt stairwell has limbs on stairs, Wash down of Trommel rock truck area would be wise***

➢Hose down of 2nd floor Table area near east wall

➢4th floor near #5 cells needs shovel and hose work

➢ Fluorescent light out on 3rd floor near manilift - 4 ft section, both bulbs

➢ Top swing gate bracket broken leading to manlift

Dry Mill

➢ Bottom floor behind dryer, large piles, shovel and wheel barrow work

➢ Large piles near Dryer screw leading to Dry Mill Elevator, shovel and wheel barrow work

➢ 3rd floor Mogensen control panel debris and other items on top, large piles of material near cyclones, Dust throughout floor, 2nd hose off vacuum truck might help

➢ Dust throughout floor, 2nd hose off vacuum truck might help cleanup

➢ Coil droplight to 4th floor check ports of silos

➢ Large pile around load out belts and around floor

➢ Large pile around stairwell in #3 building

➢ Checkout Michigan loader for any problems and fix

Mill Offices

➢ Minor cleanup of Hot plate room, cleanup floor

➢ Move 2nd row of Verxspand samples form walkway and away from door area, store in less traveled area

➢ Clean off outside porches

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South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201-1708

Commissioner: Douglas E. Bryant

Board: John H. Burriss, Chairman
William M. Hull, Jr., MD, Vice Chairman
Roger Leaks, Jr., Secretary
Richard E. Jabbour, DDS
Cyndi C. Mosteller
Brian K. Smith
Rodney L. Grandy

Promoting Health, Protecting the Environment

June 6, 1996

CERTIFIED MAIL

P 567 974 136

Mr. Joseph G. Rogan
Grace Construction Products
Enoree/Kearney Operations
Rte.1 - Highway #221
Enoree, South Carolina 29335

Re: Self-Reporting Compliance Plan

Dear Mr. Rogan:

Thank you for your self-reporting compliance plan submitted on May 22, 1996 for New Source Performance Standards Subpart OOO notification violations at Grace Construction Products' Enoree/Kearney Operation (Air Permit # 1520-0015).

Upon review of the self-reporting compliance plan concerning the Morgensen Screens, #3 Slot Rescreen, Fitz Mill, and Roll Crusher, the Department has determined that no further action is required by your company. The Department has also determined that no further compliance action will be taken.

Thank you for your cooperation in this matter. If you have any questions, please call me at (803) 734-8625.

Sincerely,

Santhré M. Wood
Air Compliance Section
Air Compliance Management Division
Bureau of Air Quality

(00-2507)

cc: R. Jackson, Upper Savannah District EQC
C. Robinson, EPA Region IV
ec: D. Ellenwood, BAQ
B. Rivers, BAQ
J. Igoe, BAQ
J. Jeffcoat, BAQ

recycled paper

GRACE

Grace ConstructionProducts
Enoree / Kearney Operations

TO: Joe Rogan

FROM: Mike Balcer

SUBJECT: MSHA Inspection of June 11 & 13, 1996

DATE: June 24, 1996

cc: Dick Lyons, Steve Munyan, Marcia Seeler, Jim Briggs, John Henningson, Ray Sherbert, Lyle Kuper

On Tuesday, June 11, 1996, Mr. Lee Killian, the MSHA inspector and his Regional Supervisor, Mr. Merle Slayton arrived approximately about 9:00 am on site for their bi-annual Safety inspection. The Mine Foreman, Mr. Ray Sherbert attended myself & Mr. Killian on the first leg of the inspection that included the audit of equipment and site of the Garrett, Mims, Watson Mines and the Mine Shop area.

On Thursday , June 13, 1996, Lyle Kuper, the Mill Supervisor, attended Mr. Killian & myself on the second leg of the inspection that involved the Mill, Mill yard and associated equipment, and the Bagging Department. Merle Slayton and Ray Sherbert inspected the Tailings Ponds area. The following list and descriptions of the citations and their severity and their location. Also included is the standard that was cited.

Mine Department

Date Issue	Citation #	Description of citation	Action taken	Current status
6-11-96	3880203	# 70 Terex Pan Scrapper parked at the Bradshaw Mine had a non functional backup alarm.	This piece of equipment had been setting at the Mine for over a week. The last day vehicle inspection indicated it was working. Because of long duration of non use, wiring became corroded causing the non function. Wiring harness was replaced and horn checked.	Citation was terminated on 6/13/96. This was a Single penalty assessment

Standard cited - Mine # 3880203 - Part 56.14132 (b)(1) ***Horns and backup alarms for surface equipment*** - When the operator has obstructed view to the rear, self-propelled mobile equipment shall have - (i) An automatic reverse activated signal alarm

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Mill Department

Dated Issue	Citation #	Description of citation	Action taken	Current status
6-13-96	38800204	The packing gland and shaft on the Cell Feed pump located outside behind the Mill building was not provided with a guard.	Machine is in isolated area, with frame material that isolated the unit. A suitable guard was manufactured to correct the situation at hand.	Citation was terminated on 6/13/96. This was a Single penalty assessment
6-13-96	38800205	The extended shaft at the bottom off the ore elevator located at the Ore Storage building was not provided with a guard.	A suitable guard was manufactured to correct the situation at hand.	Citation was terminated on 6/13/96. This was a Single penalty assessment

Standard cited - Mill

3880204 - Part 56.14107(a) **Moving Machinery Parts -** Moving machine parts shall be guarded to protect persons from contacting gears, sprockets, chains, drive, head, tail, and take-up pulleys, flywheels, couplings, shafts, fan blades, and similar moving parts that cause injury.

3880205 - Part 56.14107(a) **Moving Machinery Parts -** Moving machine parts shall be guarded to protect persons from contacting gears, sprockets, chains, drive, head, tail, and take-up pulleys, flywheels, cuoplplings, shafts, fan blades, and similar moving parts that cause injury.

There were other items and suggestions mentioned at our close-out session that we will act upon and rectify. We also asked questions to clarify certain compliance gray areas. This inspection netted 3 citations overall, all of which were non S & S in nature. While this is 3 citations too many, it does represent significant improvement from the previous inspection. Both Mr. Slayton and Mr. Killian appreciated our response to the audit and complemented our action and the overall inspection process as well as our employees help and responses. They indicated to us that they did not hear any negative response from the employees during their one on one conversations with them. There was no IH monitoring conducted this session.

I would personally like to thank Ray Sherbert, Lyle Kuper, Haskell Hughes, Jim Briggs, Calvin Adams, all the maintenance employees as well as the rest of the employees on answering questions and overall helping in the audit. It's through this cooperation and effort we will be able to someday reduce our citations to zero.

Sincerely,

Michael J. Balcer

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Grace Construction Products

GRACE

TO: M. Balcer/Enoree
J. H. Burrill
D. J. Curreri
A. daSilva/Ajax
R. Dean/Slough
P. H. DiLuca
E. Domine/Chicago GCP
J. J. Henningson
B. E. O'Connell
T. Robinson/Slough

DATE: June 5, 1996

FROM: R. R. Lyons

SUBJECT: 1996 EHS Working Group Meeting Schedule

CC: G. Balmer/Slough
J. Hansen/Chicago GCP
N. R. Kivell/Ajax
R. H. Locke
J. G. Rogan

Enclosed are two items for your review;

First

- When you prepare for the survey process, Ed Domine's survey was last years' "best practice" for written surveys. However, whenever possible use telephone or face-to-face surveys as your data collection methodology.

- Business Unit/Functional assignments are as follows;

-	Waterproofing - N.A.	Domine	(Mfg., Sales & Office)
-	Waterproofing - Europe	Dean	(Mfg., Sales & Office)
-	C&CP - N.A.	Curreri	(Mfg., Sales & Office)
-	C&CP[1] - Europe	Robinson	(Mfg., Sales & Office)
-	Fire Protection - N.A.	DiLuca	(Mfg., Sales & Office)
-	Canada	daSilva	(Mfg. & Office)
-	Specialty Vermiculite	Balcer	(Mfg., Sales & Office)
-	Chemical Inventory	Henningson	(TSCA, CEPA, EINECS)
-	Cambridge Research Depts.	Henningson	
-	Slough Technical Service Group - Robinson		

If we don't deliver what we haven't delivered

Second

- Review our generic survey list from last year and expand where noted. We need ***more*** input from the production floor, tech reps, delivery specialists, shift supervisors, European Plant Managers, office personnel and maintenance staff.

As a final note, probe ***managers*** opinions on the need for better shipping controls (country to country) insofar as regulations impact shipments, better control of labels appropriate for the "ship to" country, and any Product Stewardship issues on current or emerging products.

Call me if you have any questions.

R. R. Lyons

RRL:at
G:genqa(wkgrpsch)

PS: Reminder - Meeting dates are September 24 and 25 with ***arrival on the 23rd***

(1) Includes Cormix Warrington, C&CP Sales Staffs at Slough and Passirana (Europe Headquarters)

Environmental, Health & Safety Priority Setting Survey for 1996

Name: _____ Date: _____

Position / Title: _____

This survey is used as a basis for setting E, H & S priorities for the coming year. Each product line and functional group is interviewed to determine their needs. Findings are summarized into priorities for these groups and for GCP. Priorities are presented to top management for input, names are not used in these presentations.

The following definitions are used in this survey:

- **SAFETY** Prevention of physical injuries to employees or damage to property: Training, Equipment improvements, Machine guarding, Protective equipment, Safe Working Procedures, Awareness, etc.
- **HEALTH** Prevention of illnesses in employees: Chemical exposure control, Ergonomics, Healthy living, etc.
- **ENVIRONMENTAL** Prevention of harm to the environment: Spill prevention & containment, Pollution prevention, EPA permitting & reporting, Recycling, etc.

1. Overall, over the last 3 years, the **SAFETY** performance in your department / organization has:
   Improved.
   Stayed the same.
   Gotten worse.

2. Why? _____

3. What steps need to be taken to improve the **SAFETY** performance of your department ?

4. Overall, over the last 3 years, the **HEALTH** performance in your department/organization has:
   Improved.
   Stayed the same.
   Gotten worse.

5. Why? _____

6. What steps need to be taken to improve the **HEALTH** performance of your department ?

1995

CUSTOMERS SURVEYED
(GENERIC LIST)

1996 note

PRODUCTION EMPLOYEES (HOURLY)	28	increase at F.P MFG, CP Sales, CP MFG
SALES (REPS, TECHS, DELIVERY)	15	
PRODUCTION/SHIFT SUPERVISOR (SALARIED & HOURLY)	14	add Slough
PLANT MANAGERS	14	add Widnes, Slough & All European CCP sites
EHS MATRIX ORGANIZATION	6	
OFFICE PERSONNEL	5	increase in Cambridge, Chic and Ajax
VICE PRESIDENTS AND/OR GENERAL MANAGERS	5	
MANUFACTURING MANAGERS & MFG. MANAGERS STAFF	4	
MAINTENANCE PERSONNEL (HOURLY & SUPERVISORS)	4	increase in all units/sites
ENGINEERS	3	
LAB TECHNICIANS	3	
IN-HOUSE LEGAL COUNCIL	1	
TOTAL	102	

CUSSURV

GRACE

Grace Construction Products
Enoree / Kearney Operations

TO: Joe Rogan

FROM: Mike Balcer

SUBJECT: 96-014 Recordable / Lost time Injury of Thomas Cox

DATE: June 26, 1996

cc: Dick Lyons

The following GRACE incident report, SC 1st Report of Injury and MSHA 7000-1 injury reports reflect the injury to Thomas Cox. Without doubt it is an equipment failure accident. That in essence makes it all the more difficult to deal with, since these are not so readily recognized or observed for. The only conclusion I can come to is that we have progressed from not so desirable seats to the present Bass Boat option. I feel that an industrial heavy duty rated unit be refitted and also that it have an solid, non rotating base. We have a wide range of people operating at this area with varying body weights and I don't feel that the current seat will standup under these conditions.

Michael J. Balcer

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GRACE SPECIALTY CHEMICALS CO.
INCIDENT INVESTIGATION REPORT

(1) CASE NO. 96-014 (2) Lost Time ✓ First Aid ____ Recordable ✓ Fatality ____

MSHA

REPORT QUALITY SCORE 15

DIVISION/PLANT: [redacted]PD Enoree	CITY/STATE: (4) Enoree, S.C.	DEPARTMENT: (5) Mill	LOCATION OF INCIDENT: (6) Monitor Shack
COMPANY PREMISES: (7) ☑ YES ☐ NO	DATE OF INCIDENT: (8) 6/23/96	TIME OF INCIDENT: (9) 4 or 5AM ☑ AM ☐ PM	DATE INCIDENT REPORTED: (10) 6/23/96

10

EMPLOYEE NAME: (11) FIRST Thomas MI G LAST Cox	DATE OF BIRTH: (12) 6/29/61	SEX: (13) ☑ M ☐ F	EMPLOYEE NO.: (14) 100655	DATE OF HIRE: (15) 3/6/95	
OCCUPATION: (16) Monitor Operator	MOS/YRS. IN CURRENT JOB: (17) 15 months	SUPERVISOR IN CHARGE OF ACTIVITY AT TIME OF INCIDENT: (18) R. Bryson / L. Kuper			

NATURE OF INJURY (LESS PARTS OF BODY AFFECTED)
(19) Cut Elbow Bruised hip

MEDICAL TREATMENT/FIRST AID
(20) Cleaned cut on elbow

15

DESCRIBE INCIDENT: How did incident occur? What emergency actions were taken? (21)

A bass boat operator seat is positioned in front of a control panel that is their primary work station. Operators can sit or stand while running the controls. Thomas slid back on the chair. The mount broke and he fell backwards and to one side landing on his right elbow and hips. The floor is made of expanded metal. He did not strike anything except the expanded metal. His elbow was cut and his hip was bruised. The cut was cleaned, and bandaged and he stayed on the job to finish his shift. He went to the doctor later.

20

IMMEDIATE CAUSE: What unsafe act or condition caused the incident? (22)

The seat is made to pivot on a 3/4 inch pin. The pin broke. The seat is 30 inches above the floor so he fell to the floor

BASIC CAUSE: What specific personnel or job factor resulted in the immediate cause? (23)

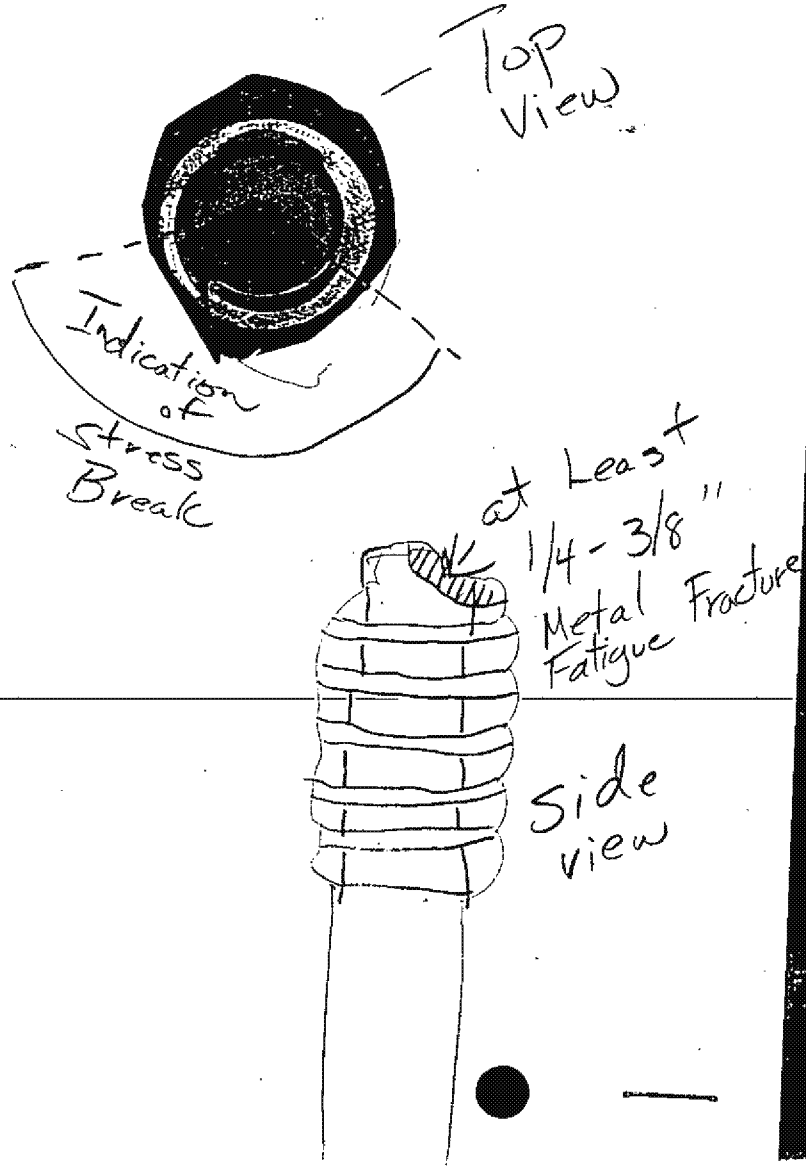
Equipment failure was the cause of the accident.

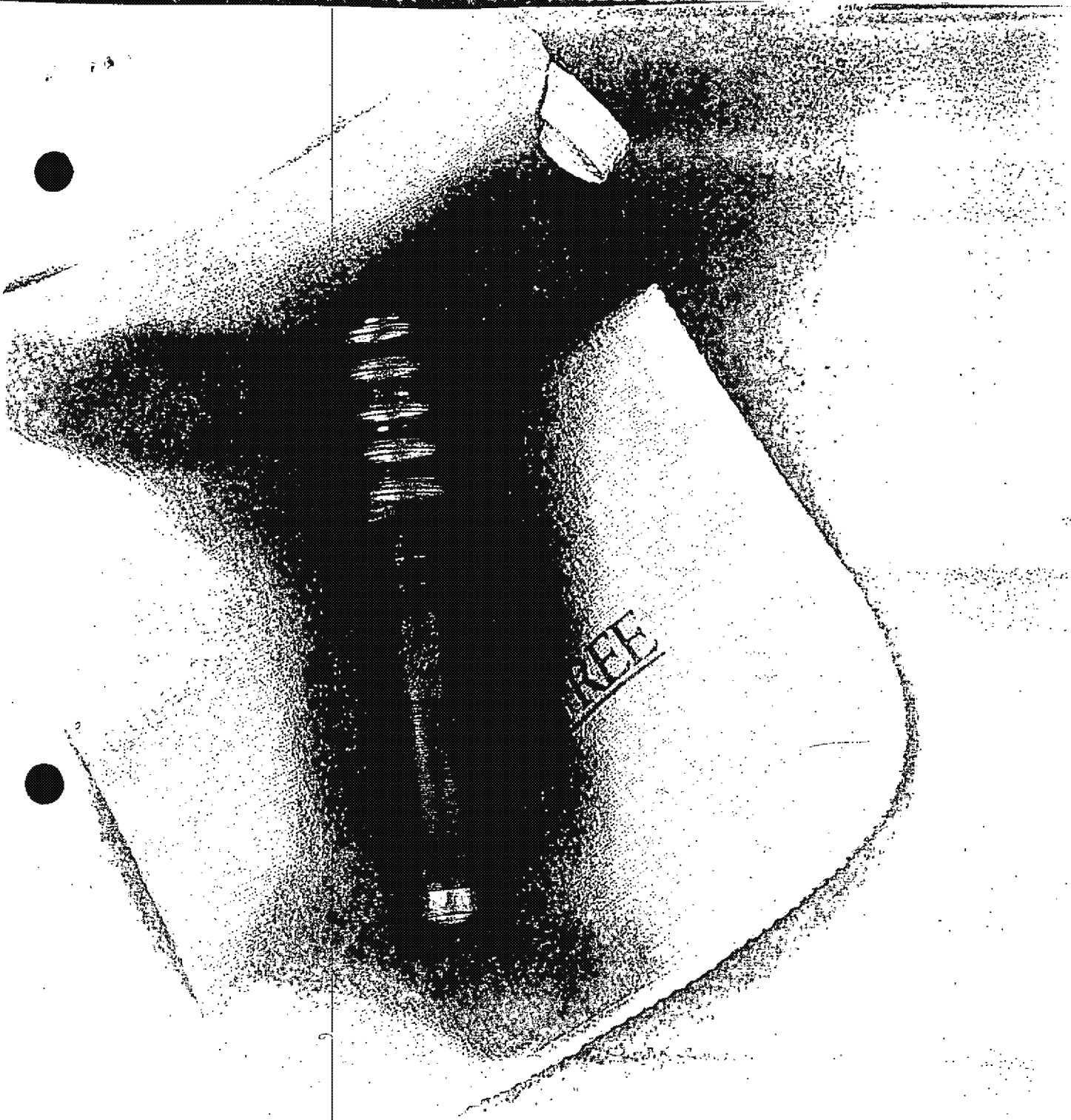
The steel pin was not observed to have any flow prior to its total failure.

There is no evidence the operator was doing anything wrong.

There were no witnesses.

3 GSC 01-89) ATTACH ADDITIONAL FORMS/SHEETS AS NEEDED TO EXPAND ON ANY ITEM.


Top View
Indication of Stress Break
at Least 1/4 - 3/8"
Metal Fatigue Fracture
Side view



GRACE

W.R. Grace & Co.-Conn.

NOTICE OF WORKERS' COMPENSATION CLAIM

FAX TO:

NAME: Anne Brleson (W/C WCMOX Tech CB)

NUMBER: 800-288-0647

OF PAGES: 2

DATE: June 26, 1996

LOCATION CODE

2505

GRACE Location: Enoree, SC (Kearney Mine & Mill Site)

Address: Rte 1 - Hwy # 221, Enoree, SC 29335

Phone #: 864-969-3353 ext. 201

Contact: Ms. Margie Wood

ACORD. **WORKERS COMPENSATION EMPLOYER'S FIRST REPORT OF INJURY OR ILLNESS**
CONTAINS ALL ITEMS REQUIRED BY OSHA FORM 101 (Enter all dates in MM/DD/YY format)

OSHA CASE/FILE #

DO NOT WRITE IN SPACE BELOW

EMPLOYER (Name & State Mailing Address Incl. County & Zip)

W.R. Grace & Co. - Conn.
Marney Mine & Mill Site
Rte. 1 - Hwy #221, Enoree, SC 29335

Location Code: 2505

CARRIER CLAIM NUMBER

JURISDICTION CLAIM NUMBER

EMPLOYER'S LOCATION ADDRESS (If Different)

INDIVIDUAL	PARTNERSHIP	x CORPORATION	SIC CODE	UNEMPLOY. I.D. NO.:	PHONE NUMBER (A/C, No., Ext.)
OTHER:			1499	FED. TAX 8649693353	201

NATURE OF BUSINESS (Mfg., Trade, Construction, Etc.): Mining & Milling of Vermiculite
SPECIFIC PRODUCTS: Vermculite Concentrate
EMPLOYEES: @70

INSURANCE

CARRIER (Name, Address & Phone No.)
CNA Insurance Companies
P. O. Box 36126
Charlotte, North Carolina 28236
704/549-9411 WATS: 800/262-2648

POLICY/SELF-INSURED NUMBER: XWC 702517734
POLICY PERIOD: Eff. Jan. 1, 1994 to Dec. 96
CHECK IF APPROPRIATE: x SELF INSURANCE | STATE FUND

EMPLOYEE

NAME (Last, First, Middle): Cox, Thomas Glenn
SOCIAL SECURITY NUMBER: 247-37-3645
PHONE NO. (A/C, No.): 864 984 0477
ADDRESS (Include County & Zip): 503 Clemson Street, Laurens, SC 29360
DATE OF BIRTH: 6-29-61
MARITAL STATUS: Married
OFFICER/PARTNER? YES / x NO
x MALE / FEMALE
EXEMPTION INFO. (OVER 65 / BLIND): EMPLOYEE / SPOUSE
DEPENDENT CHILDREN: 1
OTHER DEPENDENTS: 1
REGULAR DEPT. OR DIVISION: Mill Departmnet
DATE HIRED: 3-6-95
STATE WHERE HIRED: SC
OCCUPATION: Monitor Operator
HOW LONG AT CURRENT JOB: 1.3 years
CERTIFICATE NUMBER (If Under 18)

WAGE INFORMATION

RATE: $10.94 PER: x HOUR / DAY / WEEK / MONTH / OTHER:
DATE RETURN(ED) TO WORK: 6/26/96 - Scheduled
FULL PAY FOR DAY OF INJURY? x YES / NO
DID SALARY CONTINUE? YES / NO
AVERAGE WAGE/WEEK AT TIME OF INJURY: $655.63
DOES EMPLOYEE RECEIVE PAY IN KIND? x NO / YES (Explain):

OCCURRENCE

PLACE OF ACCIDENT OR OCCURRENCE (Incl. State): Monitor Pit Building, Rte 1 - Hwy. 221 (mill site), Enoree, SC 29335 x EMPLOYER'S PREMISES
COUNTY OF INJURY: Laurens
DATE OF INJURY/ILL.: 6-23-96
TIME OF OCCURRENCE: 04:30 AM x PM
TIME WORKDAY BEGAN: 11:00 AM x PM
LAST WORKDATE: 6-23-96
DATE EMPL'R NOTIF'D: Same
INDIVIDUAL NOTIFIED: Ronald Bryson, Sft Lead

DESCRIBE NATURE OF INJURY OR ILLNESS IN DETAIL (Include part of body affected, eg. amputation of right index finger at 2nd joint, fractured arm, lead poisoning)

Lacertion to right elbow, bruise to right hip. Elbow wound required 5 staples to close.

DESCRIBE EMPLOYEE'S ACTIVITIES WHEN INJURY OCCURRED WITH DETAILS OF HOW EVENT OCCURRED (Include name of other individuals involved, tools, machinery, objects, vapors, chemicals, radiations, unnatural motions of employee)

Employee was sitting at his operating station when he slid back in seat, the seat mounting pin broke causing seat assembly & employee to fall to expanded metal floor, causing the injury.

IF FATAL, GIVE DATE OF DEATH:

WERE SAFEGUARDS OR SAFETY EQUIPMENT PROVIDED? x YES / NO

WERE THEY USED? x YES / NO

PHYSICIAN (Name & Address)

HOSPITALIZED / OUT-PATIENT / x EMERGENCY ROOM / IN-HOUSE TREATMENT / FIRST AID

HOSPITAL (Name & Address): Laurens County Hospital-ER, Hwy # 76 West, Clinton, SC 29360

WITNESS (Name & Phone Number): None

DATE MAILED TO INSURER: 6-26-96
PREPARER'S NAME & TITLE: Michael J. Balcer (EHS Director)
PHONE NUMBER (A/C, No., Ext.): 8649693353x279

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Mine Accident, Injury, and Illness Report

U.S. Department of Labor
Mine Safety and Health Administration

Section A—Identification Data — Approved For Use Through 12/31/90, OMB Number 1219-0007

MSHA ID Number: 38-00085 | Contractor ID | Report Category: [X] Metal/Nonmetal Mining [ ] Coal Mining | [ ] Check here if report pertains to contractor.

Mine Name: Kearney Mine + Mill | Company Name: W. R. Grace + Co. - Conn.

Section B—Complete for Each Reportable Accident Immediately Reported to MSHA

1. Accident Code (circle applicable code – see instructions): 01 – Death; 02 – Serious Injury; 03 – Entrapment; 04 – Inundation; 05 – Gas or Dust Ignition; 06 – Mine Fire; 07 – Explosives; 08 – Roof Fall; 09 – Outburst; 10 – Impounding Dam; 11 – Hoisting; 12 – Offsite Injury

2. Name of Investigator

3. Date Investigation Started: Month | Day | Year

4. Steps Taken to Prevent Recurrence of Accident

Section C—Complete for Each Reportable Accident, Injury or Illness

5. Circle the Codes Which Best Describe Where Accident/Injury/Illness Occurred (see instructions)

(a) Surface Location: 02 Surface at Underground Mine; (30) Mill, Preparation Plant, etc.; 03 Strip/Open Pit Mine; 04 Surface Auger Operation; 05 Culm Bank/Refuse Pile; 06 Dredge Mining; 12 Other Surface Mining; 17 Independent Shops (with own MSHA ID); 99 Office Facilities

(b) Underground Location: 01 Vertical Shaft; 02 Slope/Inclined Shaft; 03 Face; 04 Intersection; 05 Underground Shop/Office; 06 Other

(c) Underground Mining Method: 01 Longwall; 02 Shortwall; 03 Conventional Stoping; 05 Continuous Mining; 06 Hand; 07 Caving; 08 Other

6. Date of Accident: Month 6 | Day 23 | Year 96

7. Time of Accident: @ 4:30 [✓] am [ ] pm

8. Time Shift Started: 11:00 [ ] am [✓] pm

9. Describe Fully the Conditions Contributing to the Accident/Injury/Illness, and Quantify the Damage or Impairment: Employee was sitting at operator's seat when swivel seat post mount broke + shattered. This caused whole seat assembly + Employee to fall backwards on to Expanded Metal Floor. Bruised right hip + Lacerated right Elbow. Laceration required 5 staples

10. Equipment Involved: Operator's (Monitor) Seat | Type | Manufacturer | Model Number

11. Name of Witness to Accident/Injury/Illness: None

12. Number of Reportable Injuries or Illnesses Resulting from This Occurrence: 1

13. Name of Injured/Ill Employee: Thomas Glenn Cox

14. Sex: [X] Male [ ] Female

15. Date of Birth: Month 6 | Day 29 | Year 61

16. Last Four Digits of Social Security Number: 3645

17. Regular Job Title: Monitor Operator

[ ] 18. Check if this Injury/Illness resulted in death.

[ ] 19. Check if Injury/Illness resulted in permanent disability (include amputation, loss of use, & permanent total disability).

20. What Directly Inflicted Injury or Illness? Broken Chair Mount - (Fall to Floor)

21. Nature of Injury or Illness: Laceration of Elbow, Bruised Hip

22. Part of Body Injured or Affected: Elbow, hip

23. Occupational Illness (circle applicable code—see instructions): 21 Occupational Skin Diseases; 22 Dust Diseases of the Lungs; 23 Respiratory Conditions (toxic agents); 24 Poisoning (toxic materials); 25 Disorders (physical agents); 26 Disorders (repeated trauma); 29 Other

24. Employee's Work Activity When Injury or Illness Occurred: Operation of Monitor Pit Water Cannons and RAMEY Loader

Experience	Years	Weeks
25. Experience in This Job Title	1	12
26. Experience at This Mine	1	12
27. Total Mining Experience	1	12

Section D—Return to Duty Information — *Answer 30 & 31 when case is closed*

[ ] 28. Permanently Transferred or Terminated (if checked, complete items 29, 30, & 31)

29. Date Returned to Regular Job at Full Capacity (or item 28): Month 6 | Day 26 | Year 96

30. Number of Days Away from Work (if none, enter 0): 3

31. Number of Days Restricted Work Activity (if none, enter 0): 0

Person Completing Form (name): Michael J. BALCer | Title: EHS Director

Date This Report Prepared (month, day, year): 6/26/96 | Area Code and Phone Number: (864)-969-3353 Ext. 279

For Official Use Only
Degree
Accident Type
Accident Class
Scheduled Charge
Keyword

MSHA Form 7000-1, July 91 (Revised)

 MAIL THIS PAGE TO MSHA, DENVER SAFETY and HEALTH TECHNOLOGY CENTER, P. O. BOX 25367, DENVER, COLORADO 80225

WRG00373734
ED_005351_00000368-00408

WinFax PRO Cover Page

My report follows.

W.R. Grace & Co., Phone: 864-969-3353 ext. 279, Fax: 864-969-3800		
To: Joe Rogan	Fax Number : 1-617-547-7663	
From : Michael J. Balcer	Pages: 7	Date: 6/13/96

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U.S. Department of Labor, MSHA
Metal/Nonmetal Mine Safety & Health
1835 Assembly Street, Room 1275
Columbia, SC 29201

ORDERS OF WITHDRAWAL

You are hereby ordered to cause immediately all persons, except those permitted under Section 103(i), 103(k) and/or 104(c) of the Federal Mine Safety and Health Act of 1977, to be withdrawn from, and to be prohibited from, entering the area of the mine described hereon until an Authorized Representative of the Secretary determines that the danger(s) and its causes no longer exist, the violation(s) of the mandatory health or safety standards have been abated or the emergency has been eliminated.

Section 104(b) — Failure to abate a 104(a) or (d)(1) violation in the time period given.

Section 104(d)(1) — Unwarrantable failure violation—subsequent to 104(a)(1) citation during same inspection or within 90 days after issuance of 104(d)(1) citation.

Section 104(d)(2) — Unwarrantable failure violation—subsequent to issuance of 104(d)(1) order—subsequent inspection—no intervening inspection of the mine in its entirety, which has disclosed no further unwarrantable failure violation.

Section 104(e)(1) — Pattern of violations order—within 90 days after 104(e)(1) pattern notification—violation that could significantly and substantially contribute to a health or safety hazard.

Section 104(e)(2) — Pattern of violations order—violation that could significantly and substantially contribute to a health or safety hazard—subsequent to issuance of 104(e)(1) order—subsequent inspection—no intervening inspection of mine in its entirety which has disclosed no further such violations.

Section 104(f) — Order—failure to comply with respirable dust standard by the end of time given in 104(f) citation at underground mines.

Section 104(g)(1) — Order—untrained miners.

Section 107(a) — Order—imminent danger.

Section 103(i) — Order to supervise and direct rescue and recovery work following accident.

Section 103(k) — Order ensures safety of persons following an accident and requires approval of recovery plan.

CITATIONS

Pursuant to the Federal Mine Safety and Health Act of 1977, the undersigned Authorized Representative of the Secretary upon making an inspection or an investigation of the hereon designated mine on this date finds/believes that the following condition or practice exists, or has existed, in the mine area or on the equipment described hereon.

Section 104(a) — Violation of the Act, mandatory health or safety standard, rule, order or regulation.

Section 104(d)(1) — Unwarrantable failure could significantly and substantially contribute to a health or safety hazard.

Section 104(f) — Citation exceeding respirable dust standard at underground mines.

NOTICE TO PROVIDE SAFEGUARDS
[Coal Mines Only]

Section 314(b) — Notice to provide safeguards—additional requirements necessary in the judgment of an authorized representative to minimize hazards with respect to transportation of men and/or materials. Upon issuance of the safeguard notice, the additional requirement(s) is enforceable under Section 104 of the Act.

SAFETY AND HEALTH CONFERENCE

Operators and representatives of miners are afforded the opportunity to review with MSHA each citation and order issued during an inspection. Upon notice by MSHA, all parties have 10 days in which to submit additional information or request a safety and health conference with the District Manager or his designee. A conference request may include a request to be notified of and participate in a conference initiated by another party.

"SIGNIFICANT AND SUBSTANTIAL" VIOLATIONS

By checking the "significant and substantial" block, the inspector has indicated that, based upon the particular facts surrounding the violation, there exists a reasonable likelihood that the hazard contributed to or will result in an injury or illness of a reasonably serious nature. Only "significant and substantial" violations can be considered in determining whether a pattern of violations exists.

WRG00373736
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Mine Safety and Health Administration

Section I. Violation Data

1. Date: Mo 06 Da 13 Yr 96 | 2. Time (24 hr Clock): 0800 | 3. Citation Order Number: 3880205

4. Served To: Mike Balcer, Safety Dir.

5. Operator: W.R. Grace & Co.-Conn.

6. Mine: Kearney Mine

7. Mine ID: 38-00085 (Contractor)

8. Condition or Practice — 8a. Written Notice (103g) ☐

The extended shaft at the bottom of the Ore elevator located at the Ore storage building was not provided with a guard.

9. Violation: A. Health ☐ Safety ☐ Other ☐ | B. Section of Act | C. Part Section of Title 30 CFR: 56.14132

Section II. Inspector's Evaluation

10. Gravity:

A. Injury or Illness (Fatal, Permanently Disabling, Lost Workdays, Restricted Duty, Lost Workdays): Not Likely ☐ Unlikely ☑ Reasonably Likely ☐ Highly Likely ☐ Occurred ☐

B. Injury or Illness could reasonably be expected to cause: Lost Workdays ☐ Lost Workdays or Restricted Duty ☐ Permanently Disabling ☑ Fatal ☐

C. Significant and Substantial (See Reverse): Yes ☐ No ☑

D. Number of Persons Affected: 1

11. Negligence (check one): A. None ☐ B. Low ☐ C. Moderate ☑ D. High ☐ E. Reckless Disregard ☐

12. Type of Action: 104-A-5

13. Type of Issuance (check one): Citation ☑ Order ☐ Safeguard ☐

14. Initial Action: A. Citation ☐ B. Order ☐ C. Safeguard ☐ D. Written Notice ☐ E. Citation, Order, Safeguard Number | F. Dated Mo Da Yr

15. Area or Equipment

16. Termination Due: A. Date Mo 06 Da 14 Yr 96 | B. Time (24 hr Clock) 0800

Section III—Termination Action

17. Action to Terminate:

The shaft was provided with a guard.

18. Terminated: A. Date Mo 06 Da 13 Yr 96 | B. Time (24 hr Clock) 1053

Section IV—Automated System Data

19. Type of Inspection Activity (Code): 37 | 20. Event Number: 578077 | 21. Primary or M: P

22. Signature: E. T. Kubler | 23. Area Number: 123

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Mine Safety and Health Administration

Section I Violation Data

1. Date: Mo 06 Da 11 Yr 96 | 2. Time (24 hr Clock) | 3. Citation/Order Number: 3880203

4. Served To: Mike Bolen Safety Dir

5. Operator: M. R. Green & Co-owners

6. Mine: Kearney Mine | 7. Mine ID: 33-00085 | (Contractor)

8. Condition or Practice | 8A. Another Notice (103g) ☐

The primary roof support was not functional on the C section. Area was not free of the roof support. No roof traffic in the area.

See Continuation Form (MSHA Form 7000-3a) ☐

9. Violation: A. Health ☐ Safety ☐ Other ☐ | B. Section of Act | C. Part Section of Title 30 CFR: 57.14132(a)

Section II—Inspector's Evaluation

10. Gravity

A. Injury or Illness (Has Occurred): No Lost Work Days ☐ Unlikely ☐ Reasonably Likely ☐ Highly Likely ☐ Occurred ☐

B. Injury or Illness could reasonably be expected to be: No Lost Work Days ☐ Lost Work Days or Restricted Duty ☐ Permanently Disabling ☐ Fatal ☐

C. Significant and Substantial (See Reverse) Yes ☐ No ☐ | D. Number of Persons Affected: 1

11. Negligence (check one)

A. None ☐ B. Low ☐ C. Moderate ☐ D. High ☐ E. Reckless Disregard ☐

12. Type of Action: 104(a)

13. Type of Issuance (check one): Citation ☐ Order ☐ Safeguard ☐

14. Initial Action: A. Citation ☐ B. Order ☐ C. Safeguard ☐ D. Written Notice ☐ | E. Citation Order Number | F. Dated Mo Da Yr

15. Area or Equipment

16. Termination Due: A. Date Mo 06 Da 13 Yr 96 | B. Time (24 hr Clock) 1630

Section III—Termination Action

17. Action to Terminate

The alarm is now functional.

18. Terminated: A. Date Mo 06 Da 13 Yr 96 | B. Time (24 hr Clock) 0820

Section IV—Automated System Data

19. Type of Inspection (Activity code): 37 | 20. Office Number: 57807 | 21. Primary Inspector: 4

22. Signature: [illegible] | 23. Area Number: 6

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GRACE ENGREE S. C. Fs [illegible] Jun 13 '96 11:57 P.04

Mine Safety and Health Administration

Section I—Violation Data

1. Date: Mo 06 Da 13 Yr 96
2. Time (24 hr Clock): 0835
3. Citation/Order Number: 3880204
4. Served To: Mike Balcer, Safety Dir.
5. Operator: W. R. Grace & Co.-Conn.
6. Mine: Kearney Mine
7. Mine ID: 38-00085 (Contractor)
8. Condition or Practice: Ea. Written Notice (103g) ☐

The Packing Gland and shaft on the Cell feed pump located outside the Mill Building was not provided with a guard. This is a isolated area.

See Continuation Form (MSHA Form 7000-3a) ☐

9. Violation: A. Health ☐ Safety ☐ Other ☐ B. Section of Act: — C. Part/Section of Title 30 CFR: 56.14107

Section II—Inspector's Evaluation

10. Gravity
A. Injury or Illness (nas) (s): No Lost Work ☐ Unlikely ☐ Reasonably Likely ☐ Highly Likely ☐ Occurred ☐
B. Injury or Illness could reasonably be expected to be: No Lost Workdays ☐ Lost Workdays or Restricted Duty ☐ Permanently Disabling ☐ Fatal ☐
C. Significant and Substantial (See Reverse): Yes ☐ No ☐ D. Number of Persons Affected: 1

11. Negligence (check one): A. None ☐ B. Low ☐ C. Moderate ☐ D. High ☐ E. Reckless Disregard ☐

12. Type of Action: 104-A-
13. Type of Issuance (check one): Citation ☐ Order ☐ Safeguard ☐

14. Initial Action: A. Citation ☐ B. Order ☐ C. Safeguard ☐ D. Written Notice ☐ E. Citation/Order Number: F. Dated: Mo Da Yr

15. Area or Equipment:

16. Termination Due: A. Date: Mo 06 Da 14 Yr 96 B. Time (24 hr Clock): 0800

Section III—Termination Action

17. Action to Terminate: A guard was provided.

18. Terminated: A. Date: Mo 06 Da 13 Yr 96 B. Time (24 hr Clock): 1053

Section IV—Automated System Data

19. Type of Inspection (activity code): 37
20. Event Number: 578077
21. Primary or Mill: A

22. Signature: [signature]
23. Area Number: 003

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GRACE

Grace ConstructionProducts
Enoree / Kearney Operations

TO: Joe Rogan

FROM: Mike Balcer

SUBJECT: MSHA Inspection of June 11 & 13, 1996

DATE: June 13, 1996

cc: Marcia Seeler, Steve Munyan, Dick Lyons, Jim Briggs, John Henningson, Ray Sherbert, Lyle Kuper

On Tuesday, June 11, 1996, Mr. Lee Killian, the MSHA inspector and his Regional Supervisor, Mr. Merle Slayton arrived approximately about 9:00 am on site for their bi-annual Safety inspection. The Mine Foreman, Mr. Ray Sherbert attended myself & Mr. Killian on the first leg of the inspection that included the audit of equipment and site of the Garrett, Mims, Watson Mines and the Mine Shop area.

On Thursday , June 13, 1996, Lyle Kuper, the Mill Supervisor, attended Mr. Killian & myself on the second leg of the inspection that involved the Mill, Mill yard and associated equipment, and the Bagging Department. Merle Slayton and Ray Sherbert inspected the Tailings Ponds area. The following list and descriptions of the citations and their severity and their location. Also included is the standard that was cited.

Mine Department

Date Issue	Citation #	Description of citation	Action taken	Current status
6-11-96	3880203	# 70 Terex Pan Scrapper parked at the Bradshaw Mine had a non functional backup alarm.	This piece of equipment had been setting at the Mine for over a week. The last day vehicle inspection indicated it was working. Because of long duration of non use, wiring became corroded causing the non function. Wiring harness was replaced and horn checked.	Citation was terminated on 6/13/96. This was a Single penalty assessment

Standard cited - Mine # 3880203 - Part 56.14132 (b)(1) ***Horns and backup alarms for surface equipment*** - When the operator has obstructed view to the rear, self-propelled mobile equipment shall have - (i) An automatic reverse activated signal alarm

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Mill Department

Dated Issue	Citation #	Description of citation	Action taken	Current status
6-13-96	38800204	The packing gland and shaft on the Cell Feed pump located outside behind the Mill building was not provided with a guard.	Machine is in isolated area, with frame material that isolated the unit. A suitable guard was manufactured to correct the situation at hand.	Citation was terminated on 6/13/96. This was a Single penalty assessment
6-13-96	38800205	The extended shaft at the bottom off the ore elevator located at the Ore Storage building was not provided with a guard.	A suitable guard was manufactured to correct the situation at hand.	Citation was terminated on 6/13/96. This was a Single penalty assessment

Standard cited - Mill

3880204 - Part 56.14107(a) **Moving Machinery Parts -** Moving machine parts shall be guarded to protect persons from contacting gears, sprockets, chains, drive, head, tail, and take-up pulleys, flywheels, couplings, shafts, fan blades, and similar moving parts that cause injury.

3880205 - Part 56.14107(a) **Moving Machinery Parts -** Moving machine parts shall be guarded to protect persons from contacting gears, sprockets, chains, drive, head, tail, and take-up pulleys, flywheels, cuoplplings, shafts, fan blades, and similar moving parts that cause injury.

There were other items and suggestions mentioned at our close-out session that we will act upon and rectify. We also asked questions to clarify certain compliance gray areas. This inspection netted 3 citations overall, all of which were non S & S in nature. While this is 3 citations too many, it does represent significant improvement from the previous inspection. Both Mr. Slayton and Mr. Killian appreciated our response to the audit and complemented our action and the overall inspection process as well as our employees help and responses. They indicated to us that they did not hear any negative response from the employees during their one on one conversations with them. There was no IH monitoring conducted this session.

I would personally like to thank Ray Sherbert, Lyle Kuper, Haskell Hughes, Jim Briggs, Calvin Adams, all the maintenance employees as well as the rest of the employees on answering questions and overall helping in the audit. It's through this cooperation and effort we will be able to someday reduce our citations to zero.

Sincerely,

Michael J. Balcer

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GRACE SPECIALTY CHEMICALS CO.

INCIDENT INVESTIGATION REPORT

(1) CASE NO._____ (2) Lost Time_____ First Aid_____ Recordable_____ Fatality_____

REPORT QUALITY SCORE

PLANT	CITY/STATE	DEPARTMENT	LOCATION OF INCIDENT
(3) CPD	(4) Enoree SC	(5) Mill	(6) Rock Dump Drive

COMPANY PREMISES	DATE OF INCIDENT	TIME OF INCIDENT	DATE INCIDENT REPORTED
(7) ☑ YES ☐ NO	(8) May 7, 1996	(9) 5:10. ☑ AM ☐ PM	(10) May 7

EMPLOYEE NAME	DATE OF BIRTH	SEX	EMPLOYEE NO	DATE OF HIRE
(11) William (FIRST) Hamby (LAST) MI	(12) 4/27/77	(13) ☑ M ☐ F	(14)	(15) 7/7/95

OCCUPATION	MOS/YRS IN CURRENT JOB	SUPERVISOR IN CHARGE OF ACTIVITY AT TIME OF INCIDENT
(16) Monitor Operator	(17)	(18) Ronnie Bryson / Lyle Kuper

NATURE OF INJURY/ILLNESS: PARTS OF BODY AFFECTED
(19) none

MEDICAL TREATMENT/FIRST AID
(20) none

15

DESCRIBE INCIDENT: How did incident occur? What emergency actions were taken? (21)

William Hamby dumped rock from the Kenworth truck. Pushed in the knob to lower the box ... Then drove down the hill. The box was not down. It pulled down the overhead wires.

20

IMMEDIATE CAUSE: What unsafe act or condition caused the incident? (22)

William "Chuck" Hamby assumed the pushing the knob in was sufficient to lower the bed. It may lower it may not. It will always lower if held in.

Chuck did not wait until the box was totally down before driving. He did not check to visually see the bed was all the way down.

BASIC CAUSE: What specific personnel or job factor resulted in the immediate cause? (23)

Chuck is new as a monitor operator
He assumed that pushing the knob in was the same as holding it in. (The mine shop does the truck driving training)
He did not check the box was all the way down.
He didn't feel the "high center of gravity" with the truck
It was night. (Dark).
He normally works 3PM to 11P.M.
Due to training schedules he was working 7PM to 7AM.

(SC 01 89) ATTACH ADDITIONAL FORMS/SHEETS AS NEEDED TO EXPAND ON ANY ITEM.

Grace Construction Products

GRACE

TO: J. G. Rogan

DATE: March 18, 1996

FROM: R. R. Lyons

SUBJECT: Special Vermiculite EHS Position;

- Task Analysis
- Davison Benchmark
- EHS Mgmt Plan

CC: M. Balcer/Enoree

Joe, the enclosed documents are the product of a task which Mike and I committed to complete for Jeremy. I believe they should give you good insight into Mike's current tasks (task analysis), my view of his responsibilities (Job Description), and some perspective as to how Davison manages EHS at their Aiken Mine and Mill Operation (The Benchmarking Report). In addition, I've provided a site EHS Management Plan which outlines my opinion as to how responsibilities and tasks should be assigned.

I encourage you to review these documents and set aside some time to discuss any questions with us.

Our (Lyons and Balcer)) next session will focus on redistributing current tasks to more proactive management (Balcer has already initiated this through his site EHS walk-around with supervisors).

R. R. Lyons

RRL:at
c:winword(SVEHSPos)

If we don't deliver value, we haven't delivered.

GRACE
CONSTRUCTION PRODUCTS DIVISION

TITLE: **EHS Coordinator**

REPORTS TO: **General Manager (with a strong dotted line to the GCP Director of EHS and QA)**

DEPARTMENT:

GENERAL ROLE:

Develop, implement and maintain procedures which assure compliance with MSHA, OSHA and Environmental Regulations as well as GCP standards directed at assuring a safe and healthy workplace and no harm to the environment.

PRIMARY RESPONSIBILITIES:

- Provide technical assistance and support service to the Specialty Vermiculite Manufacturing team responsible for designing and continuously improving environmental, health and safety systems to assure the employee workplace and site environment conform to MSHA, OSHA, EPA Regulations and GCP Standards.
- Identify priorities and continuously improve the employee workplace.
- Provide or assure the General Manager, site managers and employees receive the training necessary to fulfill their direct responsibilities for conformance to MSHA, OSHA and EPA Regulations and GCP Standards.

QUALIFICATIONS:

- In-depth knowledge and experience in health, safety and environmental regulations (this position is GCP's resource for MSHA Regulatory interpretation and direction).
- Proven ability to successfully interface with all levels of site based employees and understand the reasoning and motivation for the actions.
- Ability to modify behavior insofar as behavior relates to safe work practices.
- Ability to work with line supervisors as a partner in delivering safe workplace goals and environmental compliance.

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QUALIFICATIONS: (Contd)

- Behavior that demonstrates a commitment to the values most critical to continuously improving the Specialty Vermiculite Manufacturing culture;

  - Customer dedication as the underpinning for financial success. This means dedication to serving both external customers and internal ones and finding ways to focus EHS activities in ways that enhance the competitiveness of the business.

  - Sharing of information and resources with emphasis on team success rather than personal stardom.

  - Willingness to listen to customers and to other GCP team members, even when it means exposing his/her thinking to scrutiny of others; willingness to modify personal positions to incorporate the inputs of others either because their contributions enrich the outcome or as a way of broadening the base of commitment to a shared result.

  - Orientation to collaborative problem-solving to draw out others' views and manage differences of opinion in ways that lead to improved EHS performance.

  - Effective interpersonal skills.

  - Sense of urgency and aggressiveness in implementation of plans.

  - Willingness to get things done by using influence and negotiation skills.

- Demonstrated willingness to sacrifice short-term gains for longer term, benefits, even when it means working against traditional wisdom and organizational rewards; proven commitment to the common good over parochial concerns.

PERFORMANCE CRITERIA:

- The Specialty Vermiculite EHS Coordinator will be held accountable for the following;

  - Providing support and expert advice to SV Manufacturing's Management Team, General Manager and GCP EHS and QA Director.

  - Continuous progress toward GCP's goal of creating a safe workplace for all employees and the use of the best available methodologies for assuring this progress is managed and when necessary re-engineered properly.

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PERFORMANCE CRITERIA: (Contd)

- Effective collaboration with the General Manager, with the GCP Director of Environment, Health, Safety and Quality Assurance and the site Management Team.

- Effective development and delivery of MSHA, OSHA and EPA Compliance and Training Programs.

- Demonstration of behaviors consistent with the job qualifications listed above.

SKILLS AND ABILITIES;

Technical degree or equivalent experience plus ability to understand MSHA, OSHA and EPA Regulatory requirements and skills necessary to design, develop and deliver associated training to hourly and management level employees.

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SUPERVISORY POSITIONS:

GRADE	NUMBER
2	
3	
4	
5	
6	
7	
8	
9	

GRADE	NUMBER
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	

GRADE	NUMBER
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
Total	

Character of Supervision--check any of the following which apply:

Training _____
Check Work _____
Assigning Work _____
Production _____

Merit Rating _____
Salary Decisions _____
Disciplining _____
Hiring Firing _____
Budgets _____

APPROVALS:

Department Manager _____ Date: _____

Division Officer _____ _____

Manager Compensation and Benefits _____ _____

INDUSTRIAL RELATIONS USE:

Position Title: _____ Grade _____

Status: Exempt _____ Non-Exempt _____

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SPECIALTY VERMICULITE EHS MANAGER
TASK/JOB ANALYSIS

- **Administration**

Total Working Days:	**260**
(Vacation)	(26)
(Holidays)	(10)
(Est.Personal)	(4)

- **Total Available** **220**

- **Daily Work**

(With G.M.)	(3)	Based on 2 hrs./trip, 12 trips/yr.
(With Lyons)	(8)	Based on 10 visits
(Travel)	(15)	EHS Conference, Cambridge Misc., Working Group Meeting, Seminars
(MSHA Training)	(36)	New miner training. Number of employees (est. at 12) 24 hours per employees
(MSHA Training)	(6)	Refresher Training 8 hrs./employee in 4 groups (104 employees)
(Expander-new employee)	(4.5)	3 hrs./employee, ytd 9 employees, estimated 1996 12 employees
(Training Preparation)	(8)	includes: room set-up, materials, selection of topics, class feedback, spec.inc.review, etc.
Sub Total	**(80.5)**	

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TASK/JOB ANALYSIS (Contd)

Sub Total	**(80.5)**	
(Management of Workers Comp)	(12.0)	includes visits from case nurses, CNA requests, paperwork, interface with clinics, management of CNA
(Site Walkarounds one day/week)	(40.0)	includes expander, mill, mine (mine walkarounds need to increase), mine maintenance, ponds, roadways/yards, discussion of observations
(MSHA Paperwork)	(2.0)	includes workplace inspection, permitting, tool inspection, equipment inspection, etc.
(PHS Van)	(3.0)	General sch. and administration Van in for 2 days
(Annual Commitment to Care™ Reporting)	(3.0)	Pollution Prevention Survey, H&S question, etc.
(Maintenance of Computer Network)	(5.0)	shares this responsibility with Mercer
(NPDES Permitting)	(8)	New assignment
Sub Total	**(148.5)**	

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Sub Total	**(179)**	Remaining after all "daily work" is estimated

Improvement Work

Heat Stress Analysis	(5.0)	
Formal Site Auditing	(5.0)	MSHA mock-up to improve MSHA related performance - includes supervisors in auditing process
Miscellaneous Equipment Training	(4.0)	Bobcat, front end loader, etc.
Maintenance Training	(4.0)	Coor. with GCP effort
Fall Protection Upgrade	(6.0)	
Sub Total	**(191)**	

Time Remaining After "Improvement Work": 31 (220-189)

SUMMARY:

Total Available	220	100%
Daily Work	(179)	(76%)
Improvement Work	(24)	(10%)
Unaccounted For	(17)	(14%)

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AIKEN BENCHMARKING

Salaried staff: 7	Plant Manager Mine Supervisor Maintenance Supervisor Production Supervisor Accounting Human Resources Customer Service
Total Employees: 48 (Exempt and non hourly)	
Size of Departments:	• Maintenance = 7 including supervisor (plus 6 contractors) • Mine - 5 including supervisor • Production - 33 including supervisor
Equivalent of SV EHS Manager	Job Shared by: • Human Resources: - JSA and paperwork - first 8 hours of new miner • Production Supervisor: Safety • Plant Manager: Environment Consultant • All supervisors share in delivery of training • Supervisors do JSA's and task training • State employee: refresher and some new miner • All supervisors are MSHA certified
Miner Representative	• Intended to be a shared task but actually the production supervisor
Literacy	• No new hires are illiterate • Offer training at no pay and at the community college on their own time
Safety Record: (1500 days L.T.)	• Culture is in place • Incentive Program (?) • Safety Committee sets aggressive yearly goals (composition is)- 7 people including supervisor (3 groups of 2) • Incentive based on team • Culture forced by MSHA's • Special emphasis program

Discipline	***Verbal - 1st*** ***Written - 2nd*** ***Suspension - 3rd***
Culture - Philosophy - keep employee (all) involved	• ***Operation Meeting (every Monday)*** • ***Everyones responsibility*** • ***Accident, phys or personal, regardlessof statue you will be tested for drug and alcohol (including plant manager)*** • ***Supervisor always goes to clinic with the employee*** • ***Follow rule change protocol similar to Dow and Shell (announce change, deliver training, implement in 3 months)*** • ***Incident rate tied to supervisors salary (in place 5 years)*** • ***New equipment installation - ask for MSHA courtesy inspection*** • ***Ask MSHA inspectors how we can do better***
Security	• ***Non-mine proper is fenced in and includes guard service 24 hours/day, 7 days/week*** • ***Cost is $2400/month*** • ***Guard duties - checkin, (check out) with cop*** • ***Emergency response coor.***

G:genqa(Aikenben)

ENVIRONMENT, HEALTH, AND SAFETY MANAGEMENT PLAN FOR SPECIALTY VERMICULITE MANUFACTURING

The Environment, Health, and Safety Management Plan at the Enoree/Kearney site contains seven main elements and is essential in the efficient management of the facility.

I. Management Statement of Policy

A. Objectives

Continuous reductions of the reportable incident rate until all accidents are eliminated and full compliance with all environmental regulations is attained.

Continuous elevation of safety awareness in all employees until safety is the first consideration in all OPERATIONS, BOTH IN PRACTICE AND PLANNING.

Ensure that all employees understand they are responsible and accountable for safe behavior and environmental compliance.

B. Responsibility and Accountability

It is the responsibility of all Supervisory and Staff Personnel to ensure that this policy is regularly communicated to all personnel in their charge and administered in consonance with the policies and procedures set forth in this program.

All supervisors will be responsible and accountable for providing a safe workplace through establishment of operating procedures, job safety analyses, proper and timely maintenance, training, strict enforcement of standards, compliance with operating permits, and consistent leadership by example.

The General Manager will be responsible and accountable for providing a safe workplace for all employees and compliance with all environmental regulations through the implementation of this management plan.

C Acquisition and Allocation of Resources

It is the responsibility of the General Manager to acquire, appropriate, and allocate all the resources, personnel, financial, materials, equipment, and time necessary to efficiently manage this plan.

It is the responsibility of the Supervisory Personnel to effectively use the resources provided to fulfill the requirements and responsibilities of this program.

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I. Management Statement of Policy (Contd)

D. Management Information Programs

The health and safety of all employees are a shared responsibility. To support a healthful and safe workplace, it is necessary for the supervisors to provide information programs that enhance the awareness of all employees on environment, health, and safety issues. These information programs are represented by the following;

Safety Bulletin Board - This means of communications will be used by the General Manager, Expanding Plant Manager, Supervisors and EHS Coordinator to convey environment, health, and safety information.

Health and Safety Bulletins - Information concerning incidents that occur at this location and other Grace Construction Products facilities will be made available to all employees and will be, at a minimum, posted on the Safety Bulletin Board. Information on those incidents that are applicable to Specialty Vermiculite operations must also be disseminated to and thoroughly reviewed with employees through supervisory channels and safety meetings.

Other information produced and/or distributed by the Environment, Health, and Safety offices in Lexington and Cambridge will also be disseminated to all employees on an as required basis.

E. Management Safety Committee (Expanding Plant Manager, Mine, Mill and Maintenance Supervisors and EHS Coordinator)

The purpose of the Management Committee is to strive for effective communications, coordination, and cooperation of all employees in supplementing this plan. Working within the framework of the above objectives, this committee will assist in accident reduction and prevention, safety awareness, and responsible, safe behavior in the workplace.

Representation - The Committee will elect their own Chairperson for a period not to exceed one year. The EHS Coordinator will work with the Committee in a technical support role.

Meeting Frequency - It is the responsibility of the Chairperson to see that the Committee meets at least once a month.

Responsibilities - The function of the Committee will be to report any unsafe or unhealthy conditions or environmental concerns and make recommendations to the General Manager on the sites management plan including training and safety awareness campaigns.

General Management will give proper and prompt attention to the reasonable recommendations of the Committee.

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I. Management Statement of Policy (Contd)

F. Enforcement and Performance Evaluations

Progressive Disciplinary Measures - When it can be demonstrated that any employee has been properly trained, provided with the appropriate safety instructions, and/or provided with the proper personal protective equipment, and continues to act in an unsafe manner toward himself, herself, or fellow employees and is determined to be a violation of safety rules or procedures, disciplinary action will be taken against that individual. The disciplinary action will be appropriate for the infraction and will be progressive in nature up to and including suspension pending termination.

Supervisor Discipline - Throughout this Plan, various references are made to responsibilities of all supervisors and their accountability for insuring that subparts of the plan are accomplished. Additionally, those personnel must take the appropriate steps to ensure that the employees they supervise are following safe work practices and procedures. Anyone who fails to meet these responsibilities can expect that disciplinary measures will be taken up to and including discharge.

Management MOR Comments - Annual performance reviews, which are formally accomplished through the completion of the Manpower and Organization Review (MOR) document, will include comments concerning performance as related to EHS issues and this Management Plan.

II. Recommended Operating Procedures (ROP's)

A. Development, Review, and Implementation

The Expanding Plant Manager, Mine, Mill and Maintenance Supervisors will be responsible for the development of recommended operating procedures for equipment and processes in his/her area. This would include, but is not limited to, start-up, running, and standard emergency shut down procedures, clean-up and maintenance procedures, management of change procedures, and crew procedures. Although all supervisory personnel are responsible and accountable for the development of these ROP's, he/she may enlist the aid of experts such as the EHS Coordinator, or other personnel from Cambridge, or other qualified individuals to assist in the development of these procedures.

As equipment is changed, or replaced, or before new processes are brought into the site, the Management Safety Committee will ensure that Recommended Operating Procedures have been established, compliance with environmental operating permits is confirmed, and EHS personnel have reviewed and approved the changes.

The Committee is responsible for ensuring the ROP's are followed on processes within their area of supervision. Additionally, they are responsible for reviewing and updating these procedures when changes occur or are deemed necessary.

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II. Recommended Operating Procedures (ROP's) Contd

B. Specific programs Requiring Recommended Operating Procedures

The site EHS Coordinator is responsible for the development and maintenance of Recommended Operating Procedures on the following site-wide programs;

- Contractor Safety
- Safety and Health Equipment (PPE) - Selection, Use and Maintenance
- Confined Space Entry
- HAZCOM
- First Aid and Emergency Medical Treatment
- Lock Out/Tag Out
- Welding and Burning Operations
- Elevated Work
- Line Breaking
- Forklift Safety
- Respiratory Protection
- Non-routine Tasks
- Environmental Permit Compliance
- Walking and Working Surfaces
- Electrical Safety
- Industrial Hygiene Program

The Expanding Plant Manager, Mine, Mill and Maintenance Supervisors will be responsible for the development and maintenance of the following ROP's;

- General Housekeeping Requirements
- Shutdown and startup procedures
- Change of process
- Emergency shutdown procedures

The above list of programs and procedures is not complete. The list is dynamic and will change as regulations company or site procedures change.

III. Training

A. Responsibilities and Procedures

Each supervisor will be responsible and accountable for the adequate training of each employee in his/her department. The ROP's will be used as the basis for all such training. Once trained and tested, each employee will be responsible for following the ROP.

Each Supervisor, and Expanding Plant Manager will ensure that ROP's are being followed and take disciplinary action when deviations occur.

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A. Responsibilities and Procedures

The site EHS Coordinator will be responsible for providing assistance to all training through the development of programs and providing technical assistance and advice. He will not be considered the primary trainer except for MSHA new miner and refresher training. Responsibilities and accountabilities for training lie with the Expanding Plant Manager, Mine, Mill and Maintenance Supervisors.

Safety meetings will be conducted by direct supervisory personnel not the EHS Coordinator. Each supervisor must through his/her example lead these meetings. In this way all employees will understand their supervisors are committed to EHS Management. The objective lesson is to teach everyone that EHS is their responsibility, not someone else's.

B. Training Recordkeeping

The EHS Coordinator is responsible for the plant master records of completed training for all plant personnel. Supervisors will notify the EHS Manager of the individual's name and date of the training. A lesson plan outline will be provided to the EHS Coordinator for confirmation of the training topics covered in the training.

Supervisors will maintain an individual file on each employee on their shift or in their department specifying the training the individual has successfully completed. As an individual is transferred within the plant, his/her training record will be forwarded to the responsible supervisor in charge of that department or shift. When an individual quits, retires, or is terminated, his training file will be given to the EHS Coordinator for retirement into his permanent record.

C. Other Required Training

The Expanding Plant Manager, Supervisors, and the EHS Coordinator will be responsible and accountable for ensuring other required training activities are conducted. These individuals will also be responsible for designating the trainer on the below specified training requirements;

- New Employee Orientation Training
- OSHA Mandatory Training Requirements
- Specialized, Site Specific Training
- First Aid Training - General and Specialized Training

IV. Facility Assessments

A. Design and Modification of Facilities and Equipment

The Supervisors and the EHS Coordinator working with Central Engineering personnel and Cambridge EHS, when required, will be responsible for the determination of layouts and uses of plant buildings, grounds, and production equipment as related to the safe utilization of these assets. Recommendations will be made to the General Manager who is responsible for the final decision on design and modifications of facilities and equipment.

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A. Responsibilities and Procedures (Contd)

As part of the internal plant shop order approval process and prior to the design or acquisition process for new equipment, the EHS Coordinator will be responsible for reviewing and recommending EHS suggestions and modifications to said shop orders. The goal of this procedure is to ensure environmental, health, and safety concerns are adequately addressed prior to the acquisition and installation of new or modified equipment. The EHS Coordinator will initial each shop order indicating his approval of the proposed expenditure. The EHS Coordinator is expected to request help in the assessment from any available GCP or Grace or outside resource as deemed necessary.

B. Facility Inspections

Identification and evaluation of potential health and safety hazards and environmental issues will be performed by the following personnel or organizations;

- GCP Staff
- Corporate Audit Staff
- Management Safety Committee
- Department Supervisors and Plant Manager
- Consultants

The goal of these inspections will be to assess the EHS issues inherent within the facility and its processes. These assessments are not considered complete until a risk assessment is conducted indicating the nature and degree of the risk.

C. Health Assessments

The following actions will constitute the assessments required for ensuring the continued good health of all employees;

- Pre-employment Physicals
- Annual physicals where required by specific programs
- Monitoring programs for health hazards within the plant

D. Job Safety Analysis

Each Supervisor and Expanding Plant Manager, with the assistance of the on-site Safety Coordinator or Cambridge EHS personnel, will conduct a job safety analysis of each operation in his area of responsibility. In order to ensure all aspects of each job are considered and analyzed for safety hazards, a team approach is considered necessary utilizing the knowledge and experience of the individual worker, the EHS specialist, and the immediate supervisor. JSAs are dynamic documents. Each supervisor is responsible for assuring amendments are implemented as processes or equipment changes are made and, at a minimum, reviewed annually.

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Grace Construction Products

GRACE

TO:	Distribution	DATE:	May 16, 1996
FROM:	J. J. Henningson	SUBJECT:	Transporting Samples
CC:	D. J. Curreri/83 Jeff Dannker/17 P. H. DiLuca/83 E. G. Domine/Chicago GCP-110 J. S. Kellett/88 A. Kuhl/Milwaukee-117 D. C. Lyons/28 R. R. Lyons/84 R. Perito/88 D. I. Preston/35 C. I. Sanders/55 N. Usta/92 C. T. Walloch/88 P. Wright/55	FILE:	TSCA Internal Memos **R/D: Perm. O**

Recently, a bulletin addressing the shipment of materials outside the country of origin was distributed by R. Lyons. In keeping with this theme, the following is guidance on proper procedures for shipment of samples.

To meet organizational needs, chemical samples including raw materials, GCP products, competitors products, and research samples can be transported to and from national and international points. As a general rule, transportation laws require that materials have documentation describing them and packaging that guarantees they get to their destination in good condition, without releasing contents.

International chemical control laws such as TSCA, CEPA and EINECS also have impact on transporting chemical samples. These laws prohibit the use and handling of chemicals not on a country's chemical substances inventory unless labeling, recordkeeping, and volume restrictions are met under R&D provisions. These laws also are meant to protect the general public and the environment.

If we don't deliver value we haven't delivered

We as Grace employees are held responsible for following proper procedures. Nonadherance with these procedures could result in serious fines for the company, personal liability, and company disciplinary actions,which includes discharge.

Attached is an overall transporting samples procedure that should be distributed to individuals involved in this activity.

Remember, transporting samples is a complex issue that should be discussed with appropriate personnel. If individuals in your product line have questions concerning sample shipments, contact your TSCA Coordinator, the Cambridge Traffic Department, or the Cambridge EHS Department.

John J. Henningson

J. J. Henningson

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Procedures for Transporting Samples

1. Identify if sample to be transported is a hazardous material or dangerous good while in the transportation system. (See Attachment 2 for definition of hazardous material or dangerous good.)

2. If sample is determined to be a hazardous material or dangerous good, contact R. Andrews in the Cambridge Traffic Department (617) 498-4398 so labeling and packaging requirements can be considered.

3. Ship nonhazardous materials in accordance with GCP packing guidelines (see Attachment 1 for packaging guidelines).

4. If involved in transporting samples to the US from foreign locations, provide or obtain when possible, a list of ingredients and the intended use of the chemical prior to shipment. If sample is provided by foreign manufacturer or distributor, a contact person and phone number is needed. This is required information for TSCA import certification and R&D labeling purposes.

5. For all import samples, an import certification and R&D label (if required) should be faxed to the foreign importing company or individual. The foreign company or individual should be instructed to attach the TSCA certification to the Bill of Lading and include a copy inside the package. If required, a R&D label should also be affixed to the sample container prior to shipment.

6. Send samples or have them sent from foreign locations to the US through a common carrier such as Federal Express and direct shipments through GCP approved brokers (see Attachment 2 for list of brokers).

7. For unknown samples believed to be nonhazardous being transported domestically or internationally, try to obtain a Material Safety Data Sheet (MSDS) or as much information from the drum or package label as possible. For international shipments, provide this information to your TSCA Coordinator prior to shipment (see Attachment 2).

   NOTE: All samples must be sent with a MSDS and label. (When sample specific information can not be obtained, but a general understanding of the material exist, product line EHS Managers can generate or provide an unknown sample MSDS which can be used in the shipment of an unknown nonhazardous material.)

8. Contact your TSCA Coordinator ASAP when planning to ship samples out of the US to determine if export notification is required (see Attachment 2 for list of TSCA Coordinators).

9. Prior to sending sample to foreign location, ask the individual receiving the sample if there are any chemical control law or chemical inventory requirements that could effect the sample's use.

10. Return all unsolicited samples to the sender.

11. Do not hand carry samples to and from international locations.

Attachment 1

Transportation Laws and Requirements

Transportation laws require that you determine whether or not a chemical sample is considered a hazardous material or dangerous good in the transportation system. Hazardous materials or dangerous goods are those considered to be explosive, compressed gases, oxidizers, poisons, infectious substances, radioactive and corrosives.

Materials having unusual hazards such as marine pollutants, anesthetics, or certain wastes are also regulated as hazardous in the transportation system. If a chemical sample falls into one of these categories, there are specific labeling and packaging requirements and mode of transportation restrictions that must be considered.

Example: A sample containing calcium hydride. Calcium hydride reacts violently with water to give off flammable and toxic gas which can spontaneously combust. This material is forbidden from transportation by passenger, aircraft and rail car. When shipped it must have a "Danger When Wet" label and specific packing materials must be used (depending on whether it is single or combination packaged).

The following GCP products are classified as hazardous materials or dangerous goods and require specific labeling and packaging.

- Power Brite
- Speed E
- GRM Primer P-100
- Bituthene P-3000 Primer
- Bituthene Mastic
- Bituthene PBA-3000
- Liquid Membrane Part B

The bulk of GCP products are not classified as hazardous materials or dangerous goods. However, this may not be true for our competitor's products, lab chemicals or even our own raw materials. Determining the status of chemical samples is extremely important so that transportation restrictions, labeling and packaging requirements can be met.

If you suspect that a sample you intend to ship is a hazardous material or dangerous good, you should contact R. Andrews in the Cambridge Traffic Department at (617) 498-4398 prior to shipment so that requirements can be addressed. This includes samples you ship and samples you plan to receive from other Grace locations.

The following packaging guidelines must be followed when shipping samples that are not regulated as hazardous:

- The sample size should not be greater than that needed to conduct work.
- The container should be constructed of plastic, glass or metal, and should be packaged inside packaging with enough cushioning and absorbent material to be able to absorb the entire contents of the container.
- The container lid should be tight sealing to prevent leakage and the lid should be taped shut to prevent the lid from loosening.

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Attachment 2

Chemical Control Laws

Chemical control laws like the US TSCA regulation require that imports of chemical samples be positively or negatively certified at the port of entry. The certifications indicate that the sample is in compliance with or is exempt from requirements. The certification must be signed by a US citizen.

In order to determine the appropriate certification prior to shipment from a foreign location, a list of ingredients must be forwarded to your TSCA Coordinator for review to determine if materials are listed on the TSCA Inventory.

The TSCA Product Line Coordinators are as follows:

Ed Domine	Chicago 65th	708-458-9700	Waterproofing
Andrea Kuhl	Milwaukee, WI	414-354-4400	Masonry (Forrer)
Deidre Lyons	Cambridge	Extension 4910	Fireproofing
Jeff Danneker	Cambridge	Extension 4509	Specialty Vermiculite
Denise Preston	Cambridge	Extension 4555	Cement & Concrete

The Laboratory TSCA Coordinators are as follows:

Jay Kellett	Cambridge	Extension 4824	Waterproofing
Rich Perito	Cambridge	Extension 4467	Fireproofing
Chip Sanders	Cambridge	Extension 4521	Cement & Concrete
Craig Walloch	Cambridge	Extension 4913	Masonry
Nizam Usta	Cambridge	Extension 4385	Facilities

The intended use of the material must also be acknowledged so that R&D exemption requirements may be considered. R&D requirements dictate that specific labeling be affixed to the container prior to the material's entry into the US or a US territory. These same requirements may exist in countries to which you send samples to. Therefore, prior to sending samples to Grace foreign locations, you should ask the individual receiving the sample if there are specific chemical control law or chemical inventory requirements that must be met. Also, prior to sending samples to foreign countries, you must contact your TSCA Coordinator to determine if notification of export is required to the EPA.

If samples are sent to the US from a foreign country, they must be sent through a common carrier such as Federal Express. No samples will be accepted that are sent through the regular mail. Mailed samples do not go through approved GCP import brokers who have been instructed in the proper documentation that must accompany shipments. If documentation is not present, brokers will hold shipments until documentation is provided ensuring compliance with certain requirements.

Attachment 2 (con't)
Chemical Control Laws

The following is a list of GCP-approved import brokers.

1. Kuehne & Nagel
   37 McClellan Highway
   East Boston, MA 02128
   (617) 569-7440

2. Fritz Companies, Inc. *(only for Canadian imports and exports)*
   Logan Office Center
   Harbor Side Drive
   East Boston, MA 02128
   (617) 569-6026

The above broker addresses and phone numbers are for Boston area offices.

Brokers will have offices at most ports of entry. If shipments are expected through other ports, call the Boston office and obtain the office address and phone number for the expected entry port.

An approved broker address should be provided to the importing company or individual and instructions given to direct shipments through their office.

Unknown Chemical Samples

Unknown foreign and domestic samples such as competitive samples taken from a construction site make compliance with chemical control laws and transportation requirements extremely difficult.

If you remove an unknown sample from a jobsite or other location and an MSDS is not available, it is important that hazard warnings and ingredient information be written down from the drum or package label. It is suggested that you call the manufacturer and request that a Material Safety Data Sheet (MSDS) be sent or faxed. An MSDS in most countries is considered public information that must be provided upon request. In some instances, the EHS Department will be able to provide you with a generic MSDS so that proper hazard information can accompany a shipment.

Prior to your shipping or knowledge of another Grace employee's plan to ship an unknown sample from a foreign location, you must contact your TSCA Coordinator and the EHS Department to discuss what steps are needed to ship the sample properly.

In many instances, unknown samples being shipped from foreign locations will need to be labeled as TSCA R&D chemicals. R&D chemicals can only be used for small scale R&D work and can not be incorporated into finished products for widespread use. Therefore, individuals transporting unknown samples should always acknowledge their intended use.

Unsolicited samples received by your facility are also subject to these requirements and should be returned, unopened, to the sender to prevent personal and company liability.

fyi
Mike Balcer

GRACE

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DRAFT

March 1, 1996

Gary L. Williams, Esquire
269 West Laurens Street
Laurens, SC 29360

Re: **Your Letter of February 14, 1996 Alleging "Unsafe Conditions"**

Dear Mr. Williams:

Your letter of February 14, 1996 to Mr. Michael Balcer has been referred to me for response.

Grace shares your concern for road and traffic safety. With all due respect, however, your letter appears to reflect less than complete knowledge of Grace's mining and related operations, and, as a result, is rather misleading. Grace welcomes the opportunity to provide you with additional information regarding its operations.

The pertinent facts include the following:

1. Grace conscientiously maintains mine pit conditions with motor graders and 3000 gallon water trucks to provide smooth surfaces and to suppress dust.

2. Grace also applies a black top covering at the exit of the mine where necessary which minimizes any potential dirt transfer onto the road surface.

3. To the extent reasonably necessary and as traffic and weather conditions allow, Grace sends out a water truck to wash off any dirt or ore along the road.

4. Despite the general references in your letter to two incidents in the past six months, Grace has not received a single complaint in the past year from any state, county or local authorities regarding road conditions in the vicinity of Grace's operations.

Mr. Williams, Grace takes pride in its excellent safety record and strives to be a good neighbor. I submit to you that Grace acts reasonably and responsibly. However, if you or your client(s) have any specific constructive ideas or suggestions for Grace, we would be happy to listen. I can assure you that any such ideas or suggestions would receive good faith consideration.

Very truly yours,

Kevin T. Grady

KTG/cl

williams.doc

QUESTIONS AND ANSWERS ON PART 50 REPORTING

AUDITS

1. Q. Why are Part 50 audits conducted?

A. Part 50 audits are conducted (1) to insure that an operator understands what is reportable, to determine if he/she is complying correctly and to determine whether the operator is under-or over-reporting cases; (2) if an audit is requested by the operator; (3) because a mine is on the Program of Accident Reduction (PAR), which requires that a 3-year audit be conducted at that mine; (4) in order to determine the winners of the Sentinels of Safety Award competition, audits are conducted on the top five potential winners in each canvass; (5) when a fatality occurs at a mine, the mine is audited for the year of the fatality and the two preceding years.

BACK INJURY

2. Q. Are strains, sprains and back injuries reportable?

A. Strains, sprains and back injuries are reportable if they occur at a mine and meet the stated conditions in the definition of occupational injuries. Any lost workdays and any days of restricted work activity must be reported.

3. Q. What if an employee, on entering the mine, sneezes hard and injures his/her back. Is the back injury reportable?

A. The answer to this question is based on the definition of an "occupational injury". An "occupational injury" means any injury to a mine worker which occurs at a mine for which medical treatment is administered. The injury is reportable if it requires more than first aid or if it meets any of the other requirements for reportablility.

4. Q. One of my employees told me that her back was hurting but she could not recall doing anything that might have hurt it. Is this an illness or an injury? Do I have to report it?

A. Back cases are considered to be injuries because they are usually initiated by a single event, or bodily motion. If the symptoms occurred at work and the employee received medical treatment and/or lost time from work or lost consciousness or was restricted in her work or motion, the case would be reportable. See the questions on "Recurrence" on page 35 of this report.

BEE/WASP STINGS, INSECT/ANIMAL BITES

5. Q. Are bee and wasp stings and insect or snake bites on mine property considered to be occupational injuries or illnesses?

A. These are classified as occupational injuries because of the instantaneous event.

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Foreign objects. First-aid treatment is limited to cleaning the wound, removal of any foreign object by tweezers or other simple techniques, application of antiseptics and nonprescription medications, and bandaging on the first visit. Follow-up visits are limited to observation including changing of bandages. Additional cleaning and application of antiseptic constitute first aid where it is necessitated by work duties that soil the bandage. Medical treatment consists of the removal of any foreign object by a physician due to the depth of imbedment, the size or shape of the object, or the location of wound. Treatment for infection, treatment of a reaction to tetanus booster, or other professional treatment is considered medical treatment.

Sprains and strains. First-aid treatment is limited to soaking, application of hot or cold compresses, and use of elastic bandages on the first visit. Follow-up visits for observation, including reapplying bandages, are first aid. Medical treatment includes a series of hot and/or cold soaks, use of whirlpools, diathermy treatment, or other professional treatments.

MSHA FORM 7000-2

The Quarterly Mine Employment and Coal Production Report (Form 7000-2) must be completed by each operator of a mine in which any individual worked during any day of a calendar quarter or by an independent contractor working on mine property and meeting the reporting requirements under 30 CFR Part 45 guidelines. To minimize the burden of quarterly employment reporting for contractors, each contractor only needs to complete one MSHA Form 7000-2 for all work done on coal properties and one Form 7000-2 for all work done on metal/nonmetal properties. Each operator of a coal-producing mine and each coal-producing independent contractor shall also report coal production on Form 7000-2. The original form shall be submitted to: MSHA, Safety and Health Technology Center, P. O. Box 25367, Denver, Colorado 80225, within 15 days after the end of each calendar quarter: Calendar quarters end on the last day of March, June, September and December. Each operator shall retain their copy of Form 7000-2 at the mine office nearest the mine for five years after the submission date. Each independent contractor shall retain their copy of Form 7000-2 at the office where forms are received. Form 7000-2 is a DATA-MAILER which is mailed to each mine operator and independent contractor at the end of each quarter with sufficient time to submit the form to MSHA. Extra copies, if needed, of Form 7000-2 may be obtained from MSHA District or Subdistrict offices. (See Appendices E and F). Preprinted DATA-MAILERS show some completed data items for the mine specified. The completed data items include: MSHA identification number, the calendar quarter for which the report is intended, the county where the mine is located, the name of the mine, company name, mailing address, and coded designations for sub-units previously reported by the mine operator. DATA MAILERS sent to independent contractors differ slightly on two items: county and operation names shown encompass all counties and all mining operations an independent contractor worked during the quarter.

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MEDICAL TREATMENT AND FIRST AID FOR CERTAIN TYPES OF INJURIES

Abrasion. First-aid treatment is limited to cleaning a wound, soaking, applying antiseptics, nonprescription medication and bandages on the first visit. Follow-up visits are limited to observation including changing the dressing and bandages. Additional cleaning and application of antiseptics constitutes first aid where it is necessitated by work duties that soil the bandage. Medical treatment includes examination for removal of imbedded foreign material, multiple soakings, whirlpool treatment, treatment of infection, or other professional treatments and any treatment involving more than a minor, spot-type injury. Treatment of abrasions occurring at greater than full skin depth is considered medical treatment.

Bruises. First-aid treatment is limited to a single soaking or application of cold compresses, and follow-up visits if they are limited only to observation. Medical treatment includes multiple soakings, draining of collected blood, or other treatment beyond mere observation.

Burns, thermal and chemical (resulting in the destruction of tissue by direct contact). First-aid treatment is limited to cleaning or flushing the surface, soaking, applying cold compresses, antiseptics or nonprescription medications, and bandaging on the first visit. Follow-up visits are limited to observation, changing bandages, or additional cleaning. Most first-degree burns only require first-aid treatment. Medical treatment includes a series of treatments including soaks, whirlpool, skin grafts, and surgical debridement. Most second-and third-degree burns require medical treatment.

Cuts and lacerations. First-aid treatment is the same as for abrasions except the application of butterfly closures for cosmetic purposes only may be considered first aid. Medical treatment includes the application of butterfly closures for noncosmetic purposes, sutures (stitches), surgical debridement, treatment of infection, or other physician-type treatment.

Eye injuries. First-aid treatment is limited to irrigation, removal of foreign material not imbedded in the eye, and application of nonprescription medications. A precautionary diagnostic visit (special examination) to a physician is considered as first aid if the treatment is limited to the above items. Follow-up visits are limited to observation only. Medical treatment cases involve removal of imbedded foreign objects, use of prescription medications, or other physician-type treatment.

Inhalation of toxic or corrosive gases. First-aid treatment is limited to removal of the employee to fresh air or the one-time administration of oxygen for several minutes. Medical treatment consists of any professional treatment beyond that mentioned under first aid and all cases involving loss of consciousness.

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Prescription medication--Any use of prescription medication normally constitutes medical treatment. However, it should be considered first aid when a single dose or application of a prescription medication is given on the first visit merely for the relief of pain or as preventive treatment for a minor injury. This situation may occur at facilities having dispensaries stocked with prescription medications frequently used for preventive treatment and relief of pain and attended by a physician or a nurse operating under the standing orders of a physician. The administration of nonprescription medication in similar circumstances would be considered first aid.

Ointments and salves--The application of ointments and salves to prevent the drying or cracking of skin may be considered first aid.

Antiseptics and dressings--The application of antiseptics to a minor injury, which does not itself require medical treatment, may be considered first aid. Additional cleansing and application of antiseptics constitutes first aid if it is necessitated by work duties that soil the dressings.

Preventive medication--Reaction to preventive medication (not administered because of an occupational injury or illness) administered at work (such as flu shots) would not constitute a reportable case.

Off-the-job cases--Treatment at work of off-the-job injuries and illnesses is not reportable.

THE FOLLOWING ARE CONSIDERED MEDICAL TREATMENT:

-Suturing (stitching) of any wound. Butterfly stitches are considered medical treatment except in the few instances where this method of closing a wound has been selected for cosmetic reasons only.

-Treatment of fractures.

-Application of a cast, splint, or other professional means of immobilizing an injured part of the body.

-Treatment of infection resulting from a work injury.

-Treatment of a bruise by the drainage of blood.

-Surgical debridement (the removal of foreign material and dead or contaminated tissue). This requires extensive care and treatment. This does not include excising the outer layer of skin.

-Treatment of abrasions that occur at greater than full skin depth.

-Use of prescription medicines, other than a single dose or application given on the first visit for the relief of pain.

-Treatment of second- and third-degree burns is almost always medical treatment.

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MEDICAL TREATMENT AND FIRST AID

Medically treated injuries are reportable. First-aid injuries are not reportable provided there are no lost workdays, restricted work activity or transfer because of the injury.

Medical treatment does not include first-aid treatment (one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care) even if it was provided by a physician or a registered professional person.

What follows is a discussion of diagnostic procedures and preventive procedures and treatments, and a discussion of medical and first-aid treatment. It is not possible to list all types of medical procedures and treatments and on that basis alone determine whether first aid or medical treatment was involved. The important point to be stressed is that the decision as to whether a case involves medical treatment should be made on the basis of whether the case normally would require medical treatment. The decision cannot be made on the basis of who treats the case. First aid can be administered by a physician or another medical person and medical treatment can be administered by someone other than a physician.

DIAGNOSTIC PROCEDURES

Hospitalization for observation, where no medical treatment is rendered, other than first aid, is not considered medical treatment. However, if the employee misses any part of his or her next scheduled shift, the case would become reportable because of lost workdays.

Visits to a physician or nurse for observation only or for a routine change of dressing are not considered medical treatment.

X-ray examination for possible fracture, dislocation, etc., is considered a diagnostic procedure and as such is neither medical treatment nor first aid. If the X-ray is negative, the case is not reportable, unless the injury required other medical treatment or met one of the other criteria for reportability. If the X-ray is positive, the case is reportable.

Physical examination in itself is merely diagnostic and is not considered medical treatment.

Reactions to or side effects from diagnostic procedures, which are necessitated by a work-related injury or illness are reportable.

PREVENTIVE PROCEDURES AND TREATMENTS

Tetanus shots--Both initial tetanus shots and boosters are considered preventive in nature and are not by themselves considered medical treatment. However, treatment of a reaction to a tetanus shot administered because of a work injury would be considered medical treatment, and would make the case reportable.

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Copies to
Deanna Lyon, Mike Belcher, Joe Rogan, Mike Rogan, Jeremy Grey, Pat Walsh, Neil Kivell, Nigan Hata, Tony Vitale, Brian Ruiz, Dave Davis, Bob Gates, Ralph Dean, Graham Balmer, Colin Riley

BEHAVIOR-BASED SAFETY

Note: All that you read herein has been tried in at least one GCP business unit and proven valid. DJO

TRANSITIO

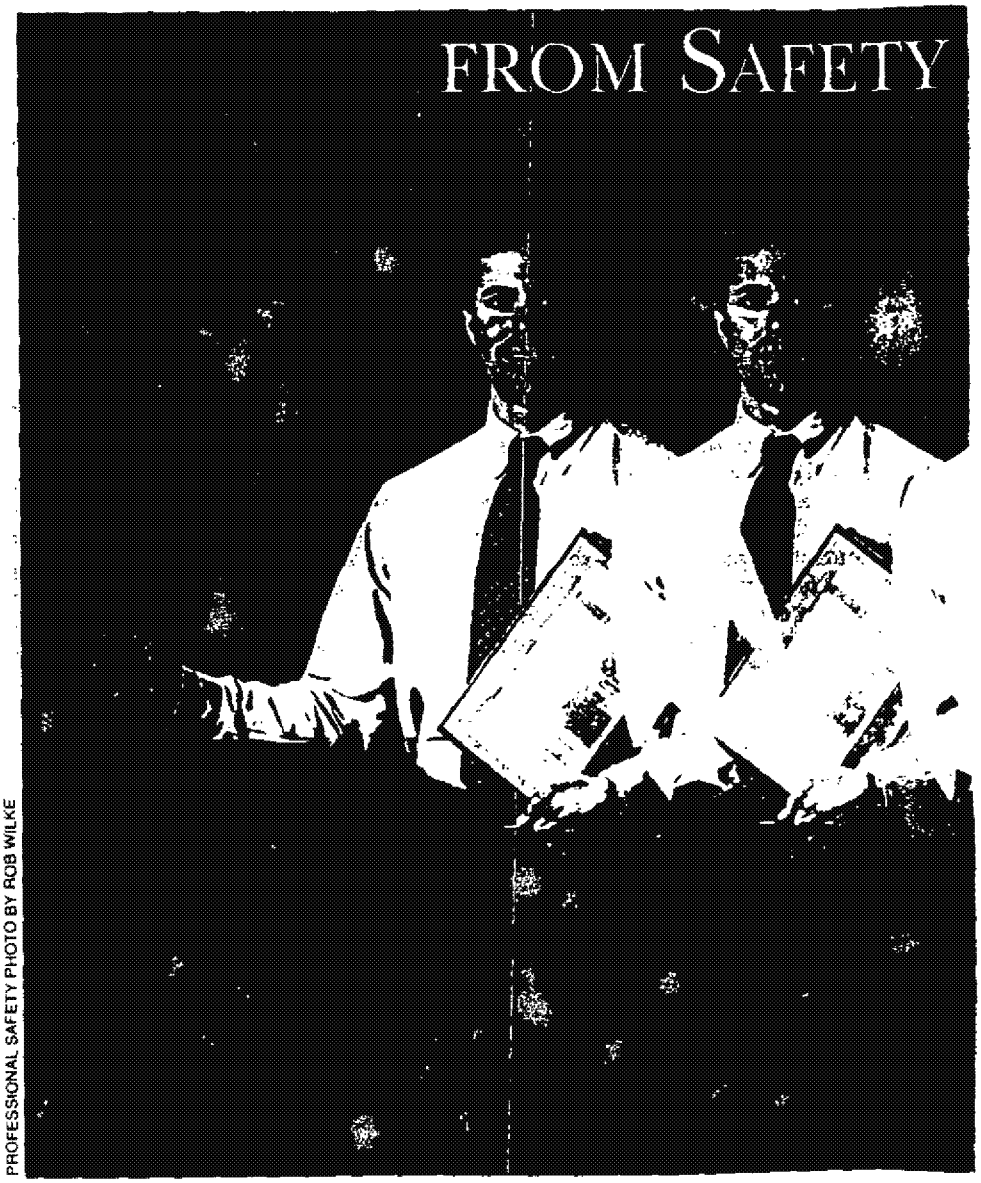
FROM SAFETY

By THOMAS R. KRAUSE
and ROBERT J. McCORQUODALE

In recent years, many safety professionals have voiced concern that safety incentive programs are not incentives to safe behavior. Despite this realization, however, many such programs have been continued under the belief that they do no harm and that their discontinuation might create trouble.

Recently, however, dialogue about incentives has entered a new phase. Managers are realizing that incentive programs may, in fact, impair workforce safety performance via numerous unintended negative consequences.

The first part of this article provides some background on the traditional role of incentive programs. Next, it reviews the scientific explanation for their ineffectiveness. Finally, it details a case history from a site moving away from such programs.



PROFESSIONAL SAFETY PHOTO BY ROB WILKE

INCENTIVE PROGRAMS: CAUSE FOR CONFUSION

The phone rings. On the other end is a plant manager who wants to discuss safety improvement. To introduce the subject, he says, "Well, I guess we're interested in this behavioral stuff we've been hearing about. We have to do something new. Safety bingo isn't working." He is completely serious. His remarks are based on common assumptions that safety bingo could have (and should have) worked at his plant, that it has worked elsewhere and, therefore, was worth the implementation effort and related costs.

Each of these assumptions is wrong, however. Neither safety bingo nor the myriad of related incentive schemes has ever "worked" anywhere to actually improve safety performance. Although this may seem an "outrageous" statement, when it comes to safety, it is true.

Compared to how they manage production or quality, many managers behave as though they have no idea how to manage safety. The following outcomes are proof of this confusion. Companies hooked on the incentive approach are stuck with programs that:

- harm their safety performance objectives;
- extract a high bottom-line cost;
- are ridiculed by employees;
- distort expectations to the point that employees consider annual incentives as "entitlement."

Safety Is Not A Special Cause

No good manager would try to improve production or quality with such "incentives," so why follow this tactic in safety? Safety performance has been attributed to a "special cause" unlike other business aspects. Within such a view, safety excellence is thought to be unpredictable—perhaps dependent on attitudes, yet with the exact nature of that dependence unclear. Company representatives often exclaim, "We don't understand it. This year we are doing ex-

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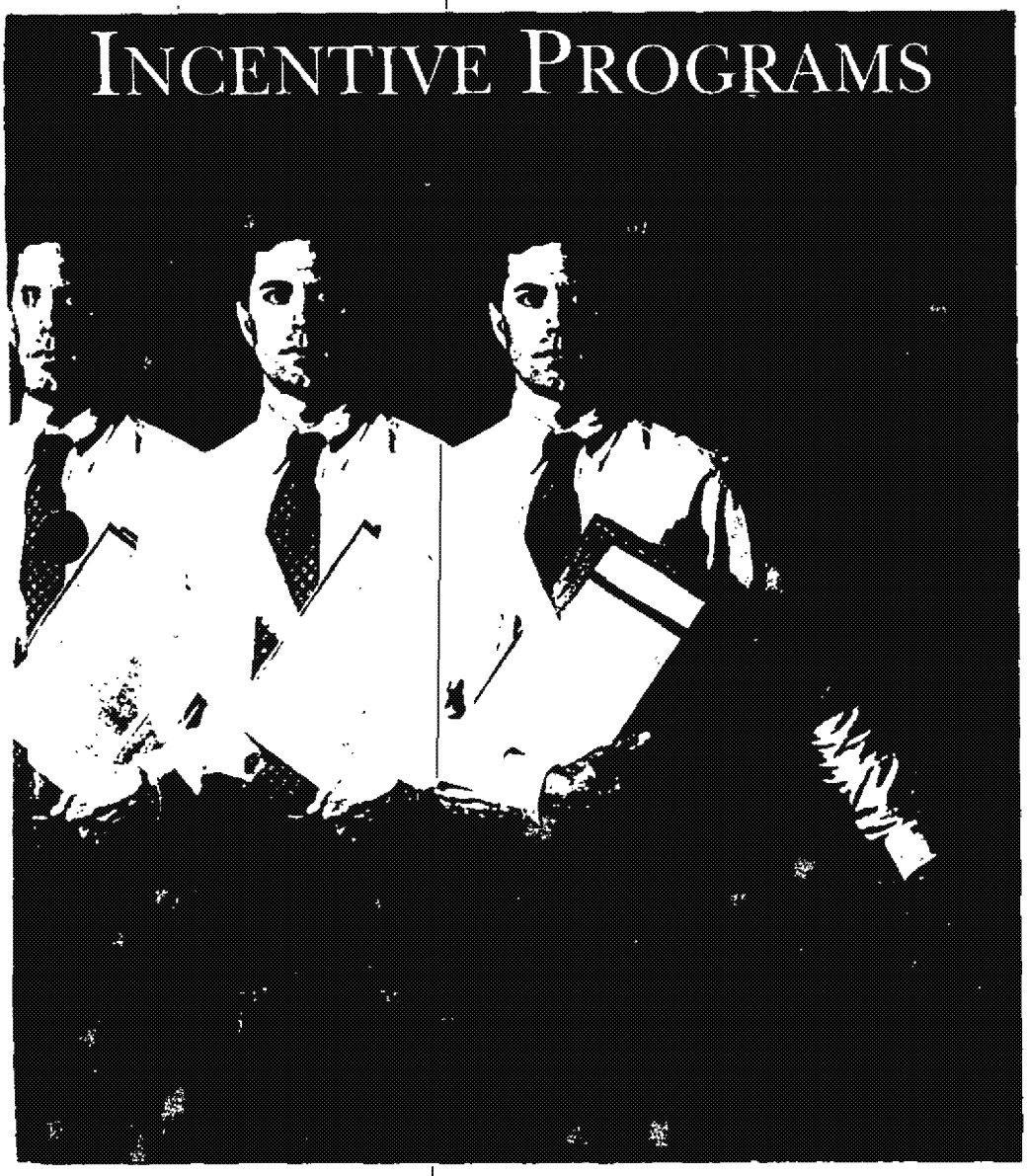
NING AWAY

INCENTIVE PROGRAMS



actly what we did last year, but accident rates are out of control!" During a "good year," the honest safety manager says, "This year our safety performance numbers look terrific and I don't know why."

Confusion about the role of attitudes is what drives slogan-based campaigns and give-away programs. Confusion about unpredictability is summed up by the offhand opinion that, good or bad, safety performance is merely a fluke. According to this picture, safety is not something scientific or known, which makes it fair game for anyone's theory.

Similar arguments were once common in the area of quality management as well. Quality was considered elusive—some magical trait that came and went. As a result, only defect management was considered possible.

As Deming and others showed, however, willingness to settle for defect management is actually a decision to not manage quality. Widespread use of statistical process control (SPC) has changed how managers view quality.

Familiarity with SPC techniques has also affected safety, causing some managers to ask the crucial new question: Can safety performance data be viewed in control-chart format like other performance variables?

Incentive Programs: A Double-Bind

The answer is "yes," and pioneering companies have recognized that safety can be managed like any other business aspect. Most managers still do not understand *what* they are trying to manage, but realize they must do *something*. Thus, under the traditional safety management paradigm, they buy and try incentive programs—despite rational evidence to the contrary. The irony: Most managers are not comfortable with this approach, yet do it anyway.

Explaining such behavior requires discussion of the word paradigm. A paradigm is a model or set of assumptions about how things work. An unexamined paradigm has great power to blind and confuse—as is the case with incentive programs. The traditional paradigm says incentive programs are simply part of managing safety performance. Therefore, no matter how far-fetched it seems or how strange it feels, otherwise clear-headed managers line up to buy the latest flat-earth, perpetual-motion, cold-fusion incentive program.

Those living inside a paradigm find it difficult to see such behavior, however. Although other factors are at work, the distorting effect of the old paradigm is hardest to recognize and escape. Other blinding factors are:

1) misunderstanding the relationship between behavior and incidents;

2) false feedback about performance, which obscures what was done right *and* what was done wrong;

3) distortion of numbers by "driving injuries underground";

4) poor measurement systems that do not track leading indicators or report

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Across industry, incentive programs have distorted safety performance measures as employees and managers alike try to achieve the best possible numbers.

them in a form that supports problem solving and continuous improvement.

The toll of these combined flaws is serious. Again, comparison with production and quality sheds some light. In production, effective managers continuously minimize wasted effort; in quality, effective managers continuously minimize defects. What do effective safety managers continuously do? Play safety bingo? No, they continuously reduce exposure to risk of injury.

Measurement systems for productivity and quality are flexible, user-friendly and predictive of actual performance. Yet, when safety is the focus, managers receive little help from traditional outcome measures (i.e., annual incidence rate). In safety, a profound disconnect exists between managers' objectives (minimize exposure to risk) and measures of their performance. The result can be superstition, desperation and cynicism.

Undermined By Safety Goals

Safety practitioners can be undermined by their own goals. This separation of goals from real objectives is pursued for a plausible reason: the desire to motivate a manager to perform well (i.e., plant manager A should achieve X-production, Y-quality and Z-safety). Performance variation is high between plant managers and within the same plant day by day. Practitioners cannot simply hope for good results; to meet the business plan, specific levels of performance are needed—as is continuous improvement in those levels.

To record such performance, goals are set, with rewards contingent on their achievement. According to conventional wisdom, this seems plausible.

In fact, however, it makes sense only if the individual manager embraces the "spirit" of the goal without being limited by its letter. Unfortunately, this poses a contradiction because operationally defining performance targets greatly increases the likelihood that a manager will focus on specific goals and overlook issues that may well be more important.

This brings to mind the old adage "Be careful what you wish for, because you might get it"—and regret it. A company must carefully consider how it frames goals for its managers. The risk is that management goals will force talented, well-intentioned people to be bad managers. Thus, performance goals are a two-edged sword. A company can easily undermine its most-cherished goals.

Safety incentive programs are a prime example. A company wants to improve safety performance, which means minimizing injury exposure. Although incident frequency is the performance measure of choice, to be helpful, it must be arrived at through accurate reporting and classification, and with a grasp of variation and SPC tools applied to safety. Failure in any area undermines the value of the measure. Safety incentive programs are ineffective—and they undermine all three factors.

✱ INCENTIVE PROGRAMS ARE INEFFECTIVE

First, let's define incentives. Incentives are the promise of cash or tangible goods—such as barbecue utensils, wheelbarrows, tool boxes—to be distributed (or withheld) based on individual or group injury frequency rates. Such "prizes" are awarded in an attempt to influence workforce safety performance.

In this context, the term does not refer to non-contingent distribution of jackets, hats, coffee mugs or clipboards that bear company or team logos and are used as workplace communication tools; such items are considered part of a site's overall "tool kit." Also escaping criticism are lunches and dinners where team members celebrate good work and accomplishment. Such recognition is based on competence and job function. Although recognition can feel rewarding, it is not tangible. Genuine recognition is not based on "Do X and you'll get Y."

This common "do-X-and-get-Y" scenario is the focus here. In such a program, safety management promises, "Don't get hurt for X-number of days, and you will receive gifts worth Y-number of dollars." This approach achieves various outcomes, but performance improvement is not among them.

In scientific terms, incentive programs do not improve safety-related behavior because they are poorly designed; the leverage they exert is applied to the wrong element. In *Out of the Crisis*, Deming said that pride of workmanship is the primary motivation for continuous improvement. The same holds true for safety, where pride in workmanship equates to pride in excellent safety performance and a commitment to continuous improvement.

Most industry observers agree that incentive programs are notoriously ineffective at engaging a commitment to continuous improvement. As last year's incentive becomes this year's entitlement, the approach lurches along from old give-away to new give-away.

Addressing the Wrong Behavior

Consider this scenario: At Acme Co., participation in safety meetings is down. Management is concerned. Instead of addressing substantive reasons for declining participation (i.e., employees find the meetings boring and irrelevant), the company launches a slogan-based incentive program: Attend a Safety Meeting and Get a Fishing Rod.

Does this program get a response? Certainly. These tactics may foster cynicism, but employees are not stupid. They will satisfy the strict terms of this "bargain" by attending a meeting in order to collect the "prize." Immediately afterward, they may make disparaging remarks about a company that thinks it can buy their participation.

This illustrates the fatal problem with such programs—they prompt response but produce no results. Acme improved meeting attendance but not participation. This is a typical outcome—and it follows from poor design. Management rightly wants to foster employee participation, yet a design problem at the heart of the approach sidetracks the safety effort.

What is really needed? The serious work of identifying and strengthening behaviors of committed safety participation. Instead, the organization spends its resources gaining short-lived attendance.

Unjust Outcomes

"Unfair" prize distribution is another crucial design flaw. For example, due to statistical variation in incident frequency, one workgroup may participate minimally in safety, yet produce "good numbers." Another group (actively improving safety) may post "poor numbers."

This unjust outcome is likely in small workgroups whose incidence rates are already low and, therefore, more affected by random variation. Not only is the "winning" workgroup rewarded for wrong behaviors, but the "losers" are punished (no prize) for doing the right things. In behavioral terms, such unfair consequences amount to false feedback.

False Feedback

Most people respond immediately to such unfairness. Scientifically speaking, however, the falseness of this feedback is even more detrimental than its unfairness—a point easily demonstrated via productivity and quality.

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Competitive companies measure production rates and quality levels. Using various methods, production leaders track whether workgroups are meeting production targets. How many units (quantity) have been produced? Of those units, how many meet customer specifications (quality) and are shippable? Imagine the chaos if these instruments provided false readouts.

Now, create a parallel with the earlier workgroup example. Imagine that readouts are false in two ways. On one production line, the instruments are not catching substandard quality—which parallels the workgroup rewarded despite low safety participation. On another line, the instruments are mistakenly rejecting high-quality output—which parallels the workgroup punished despite developing pride in excellent safety performance.

Over time, false feedback compromises all problem-solving—in quality or safety. Personnel on the right track are faulted as though they are on the wrong track; those on the wrong track (or, at a minimum, on no track) are rewarded as though they are doing something right. The result is confusion and "superstition." Thus, the organization is affected (top to bottom) as conventional wisdom generalizes these misleading "truths" to explain results.

Based on this, it is no wonder that incentive programs are ineffective. Due to inherent design problems, these programs necessarily reward the wrong behaviors and/or the wrong people, thus providing an organization with false safety performance feedback. In light of this ineffectiveness, it is not surprising that incentive programs produce unintended consequences which impede continuous improvement in a company's overall safety performance.

Most industry observers agree that incentive programs are notoriously ineffective at engaging a commitment to continuous improvement.

INCENTIVE PROGRAMS ARE HARMFUL

If incentive programs were merely ineffective, they might be tolerable. However, in industry after industry, these programs have distorted safety performance measures, as employees and managers alike try to achieve the "best numbers" possible. In effect, incentive programs distort safety reporting, driving injuries underground.

Driving Injuries Underground

Faced with loss of some anticipated prize, workgroup peer pressure can be an intense motivator to not report an injury. First-aid reporting is often the first casualty. Although this may seem a slight loss, it is a serious blow for any safety effort committed to continuous improvement.

High-functioning organizations value information on both near-misses and first-aid injuries, viewing them as indicators of more serious trends. To emphasize the importance of this data, such organizations analyze near-misses as near-hits.

At the other extreme, in poorly functioning organizations where injuries are driven underground, employees may hide on-the-job cuts, sprains, strains and broken bones until they can leave the job site; these injuries are then reported as after-hours injuries. As "heroic" as this behavior may seem, it reflects a hypocrisy that is unacceptable. It also means data crucial to the company's safety effort are lost.

At top management levels, number-conscious managers often bring a great deal of pressure to bear on medical personnel, lobbying them to under-report injury severity: "Doctor, are you sure that cut was 1.5 inches long? Might it have been 5/8 inches instead?"

Other short-sighted tactics can follow. Injured workers may be assigned to "light duty" for the sole purpose of managing the numbers. This tactic might be humorous were it not so harmful to an organization's credibility. In addition, employees are typically offended by the hypocrisy of such methods.

With reporting vulnerable to pressure from all levels, it is not surprising that companies often enjoy long-running "good numbers," while employees regard rewards as an entitlement.

Incentives Become Entitlement

The most distressing aspect of incentive programs is what they say about management's understanding of employee motivation for safety improvement. People like to improve safety. It is *inherently* rewarding to do so. Yet, incentive programs squander and corrupt this intrinsic motive. They turn this powerful, generous motive into bitter rivalries over trinkets and entitlements—clear evidence of gross ineptitude and neglect.

Over time, a workforce comes to expect safety incentives. In effect, these supposedly contingent safety "bonuses" become part of the company's compensation package—the workforce counts on them regardless of changes in safety performance. One clear sign of such distortion occurs when a safety incentive program becomes a bargaining chip in labor negotiations.

At the least, an organization spends resources on a "safety" initiative that has nothing to do with managing safety performance. Progressive managers may not be fooled into thinking they are getting any safety value for dollars spent. The real danger, however, is that an organization could mistakenly believe that the entitlements are somehow "buying safety." Such sloppy "bookkeeping" would not be tolerated within the capital improvements budget. It has no place in safety, either.

Related costs are not penny ante. In fact, they could create a scandal if the truth were known. For example, if a 500-employee site budgets huge sums annually on safety "incentives," the figure can represent an astonishing portion of bottom-line profits. How is this cost justified? On the false assumption that safety "incentives" work—even if it is only through fraudulent means (i.e., false reporting, false treatment, temporary shifts in awareness).

In a reverse twist of sorts, managers saddled with "safety bonus entitlement" may actually welcome the occurrence of an injury because it allows them to stop this practice. Such an environment can only be called crazy.

Unfortunately, incentive programs have long made safety a crazy field—so much so that those involved cannot see the forest for the trees. Many express concern about program elements, yet continue to act as though the overall approach is sound. At its core, however, the incentive approach to managing safety performance is detrimental because it suggests that safety is not worth doing for itself.

Safety Excellence Is Valuable In Itself

The most damaging effect of the incentive approach is that it says excellent safety performance is not, in itself, worthwhile—another stark contrast to the way leading companies approach productivity and quality.

Smart companies do not treat quality as though achieving it were like consuming some disagreeable medicine. No, a workforce takes pride in the quality of its workmanship *for the sake of the excellence itself*. Excellence in quality is its own reward—it is part of the work's overall "significance." This fact is the basis of good morale, positive at-

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titudes and an involved workforce. These qualities of work life contribute centrally to the achievement of company objectives.

Certainly, people need to earn a living; once their livelihood is secured, however, people find a sense of reward from doing their jobs well (which was Deming's central point about workmanship). Were a company to begin offering incentives for quality (make a quality X and receive an ice chest), it would be taking a serious step backward. And yet, this old reasoning is often used to manage safety.

Recently, companies have begun to recognize the drawbacks of safety incentives and are phasing out such programs. Hourly or management employees often provide the impetus for such change.

PPG CASE HISTORY

Although safety "incentives" had been an industry standard for many years, the manager of safety and health at PPG's Lake Charles, LA site harbored serious reservations about them. In January 1992, the site began moving away from incentives.

Background

With 1,750 employees (many union-represented), the Lake Charles site is the flagship of PPG Chemicals' business group. Throughout the 1970s, the facility was similiar to most in U.S. industry. Over the years, an array of incentive programs, all popular among employees, had been implemented.

In the late 1980s, the safety manager began to develop data which showed that incentive programs were both counterproductive and "anti-safety." As the site's local management team began addressing the cyclic nature of its accident prevention efforts, it grew difficult to accept this contradiction.

Built-In Problems

The management team identified primary problems with the incentive approach. 1) Within the incentive package for supervisors. Since performance targets were connected to workforce success, supervisors were judged "successful" when their crews had few or no accidents.

One can easily predict the outcome of this situation in practice. Such a program is actually an incentive to not report incidents. Those familiar with behavior analysis realize that the behavior most strongly influenced by these programs is that of not reporting an incident unless absolutely necessary. (Truly named, incentive programs would be called "non-reporting incentive programs.")

The Turning Point

In 1990, the safety manager began to discuss these problems with other managers. Simultaneously, these managers realized that although the site was moving away from a reactive safety cycle, performance had stalled. According to the numbers, the site was still an industry safety leader. However, the managers were not satisfied, especially when they recognized that the performance numbers throughout industry had likely been skewed by several factors (i.e., incentive programs, unrealistic safety goals and inconsistent recordkeeping practices).

At this point, they began to talk seriously about eliminating incentive programs. They agreed that removing incentives would be an unpopular change and decided it would be a reactive step to remove incentives without replacing them in some way.

Behavior-Based Safety

Some team members were aware of the behavior-based approach. During the turning-point discussions in 1990, the team began talking to management about such an approach to accident prevention. In 1991, several site managers attended a seminar on the subject, and returned determined to implement the approach as a way of making the step-change to continuous improvement.

In 1991, the site committed to a behavior-based initiative and began preparing for full implementation, which occurred in 1992. The site's safety process is called GATOR: Generating Awareness Through Observation & Review. Since the program offered many ways to recognize positive safety achievements, management felt the process would allow the site to develop a natural replacement for incentive programs.

In December 1991, management decided to phase out all incentive programs, a decision that took effect in January 1992. The next big question: What would the workforce think?

Workforce Response Positive

Management was worried about potential negative repercussions of phasing out incentives. However, they were pleasantly surprised. Nothing happened!

When employees were asked about this non-reaction, the reason became clear. Although employees liked receiving incentives, they were not aware of what achievement helped garner the prize. In other words, since no perceived linkage existed between achievement and incentive, the reward had little meaning. Employees were quick to explain that the incentives had no effect on their safety performance.

Eliminating incentive programs was only the first step in changing the safety culture, however. Under the old program, incentives were numbers-driven. Thus, supervisory evaluations depended on "achieving good numbers." In turn, supervisors passed this focus along to the workforce. Changing this "numbers" mind-set was the greatest challenge. No magic wand could erase the behaviors of not reporting an incident, minimizing injury severity or covering up an incident.

In response, the following actions were taken. For line supervisors, numerical goals were replaced by progress on action items. Plant billboards no longer reported number of days or hours since the last first-aid, lost-time, near-miss, etc. The accident investigation procedure was revised to remove as much blame as possible. And, management consistently reinforced this message throughout the three years it took to convince employees that the company really wanted all accidents reported and investigated.

The initial indicator of genuine change occurred when numbers began to rise in all departments. Although it seems strange that managers would welcome higher numbers, they had learned that such an increase did not mean more people had been injured, just that the site was finally generating accurate reporting and meaningful data. This increase came because of—not in spite of—a significant behavior-based training effort conducted throughout 1992 and 1993.

In 1994, the bottom-line effects of the initiative began to emerge. In 1993 and 1994, the site's recordable rates declined 50 percent. The reason: The firm had established a mechanism that allowed the workforce to manage its own critical, safety-related behaviors.

GATOR continues to enjoy wide workforce support. Via the program, the site is progressing toward continuous performance improvement. ■

Thomas R. Krause, Ph.D., is president and CEO of Behavioral Science Technology Inc., Ojai, CA. A professional member of ASSE's Valley Coastal Chapter, Krause is the author/co-author of numerous books, including Employee-Driven Systems for Safe Behavior *and* The Behavior-Based Safety Process. *He earned his Ph.D. from the University of California, Irvine.*

Robert J. McCorquodale is manager of safety and health at the Lake Charles (LA) facility of PPG Chemicals. He joined the company in 1967, and since 1976 has worked in various safety positions. He is a professional member of ASSE's Imperial Calcasieu Chapter and has served on National Safety Council's Executive Committee, Chemical Section since 1980. McCorquodale is also a board member of his local NSC chapter.

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South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201-1708

Commissioner: Douglas E. Bryant

Board: John H. Burriss, Chairman
William M. Hull, Jr., MD, Vice Chairman
Roger Leaks, Jr., Secretary
Richard E. Jabbour, DDS
Cyndi C. Mosteller
Brian K. Smith
Rodney L. Grandy

Promoting Health, Protecting the Environment

April 10, 1996

Mr. Micheal J. Balcer
Grace Construction Products
U.S. HWY 221
Enoree, SC 29335

RE: Completeness Determination of Part 70 Permit Application
Grace Construction Products (Enoree Operations):1520-0015

Dear Mr. Balcer:

The Bureau of Air Quality (Bureau) is requesting Section K of your Part 70 permit application be resubmitted by June 10, 1996 showing your facility's compliance plan with respect to NSPS 40 CFR 60 Subpart OOO.

It is important to remember that all requests for additional information from the Bureau must meet deadlines specified in such requests. Failure to do so could result in the removal of the application shield by the Bureau.

Should you have any questions concerning this matter, please contact me at (803) 734-0788.

Sincerely,

John T. Igoe
Environmental Engineer Associate
Engineering Services Division
Bureau of Air Quality

cc: Brian Rivers, BAQ
Jason Jeffcoat, BAQ
Bob Jackson, EQC, Upper Savannah District
John T. Igoe, BAQ
1520-0015:P

GRACE

Grace ConstructionProducts
Enoree/Kearney Operations

04/18/96

TO: Steve Munyan, Lyle Kuper, Jim Briggs

FROM: Mike Balcer

SUBJECT: April Safety re-audit (Fuel Tank farm, Scales Shack, Used Oil tank Monitor Shack, Pit Area & Truck, Wet Mogensen Building, Reagent tank farm)

cc: Joe Rogan
Dick Lyons
Ron Mercer
Richard Wright (Mine Crew)

A re-audit was conducted on April 12 & 19 for the Fuel Tank farm, Scales Shack, Used Oil tank, Monitor Shack, Pit Area & Truck, Wet Mogensen Building, Reagent tank farm. The following analysis of the sites will show completeness of the listed observation and or remediation plan. Done or completed items will be noted as such along with a strike through of the item.

Fuel Tank farm Observations

- ~~Expanded metal casing over the drain pipes on the exterior wall was loose and easily moved by applying foot pressure, needs to be secured properly.~~
  Status - Has been removed and will be replaced by a better engineered system by the end of April

- Walkway and gas tank showing signs of paint erosion
  Status - Inclement weather has slated this job to be done when summer help will be available

- ~~Loose items on containment wall, such debris, and other items need to stored properly or discarded~~
  Status - Has been removed although a few small items will be addressed by the end of April

- Gas fuel pump had loose molding jutting out from frame, puncture hazards on both sides
  Status - Will be replaced by a better engineered system by the end of April

- Placards on backside of Diesel tanks peeling off
  Status - Inclement weather has slated this job to be done when summer help will be available

GRACE

▪Diesel fuel housing needs to have better securement to frame, currently being held by elastic rubber strap
Status **-** Will be replaced by a better engineered system by the end of April

▪Hoses on all fuel stations showing cracks and fraying
Status - No change

▪Warning signs are on the pumps themselves, they were visible but dirty, but there should be signs in the containment area itself
Status **-** Will be replaced by a better engineered system by the end of April

▪Piping needs painting as well as pipe identification
Status **-** Inclement weather has slated this job to be done when summer help will be available

~~▪Flooring footing was slimy and slippery, still some residue left over from last week cleanup~~
Status **-** Will be replaced by a elevated walkway by the end of April

▪Hand rail should be provided for cross over walkway to second containment area.
Status **-** Will be replaced by a better engineered system by the end of April

~~▪Some ground erosion in front of gas pumps~~
Status **-** Done

▪Gasoline sign not listed or visible
Status - No change

Scales House

~~▪Awning over door needs repair or replacing, jagged edges and poor securing to building~~
Status **-** repaired

~~▪Door needs to be replaced, extremely flimsy, cracked around lock casing, multiple glass panes cracked or broken, held to together by tape~~
Status **-** Replaced by a new door

~~▪Door to computer housing open leaving wires exposed~~
Status **-** Closed

~~▪Wire from ceiling dangling down to the deck area~~
Status **-** removed

~~▪Drop cords in the middle of the floor~~
Status **-** removed

GRACE

- ~~Items stored in room need to stored properly or removed~~
Status - removed

- ~~Miscellaneous scale parts that are broken laying around building~~
Status - removed

- ~~Fan without ground plug~~
Status - removed

- ~~Mud collected around stairway leading to shop area, leaving a few steps unusable~~
Status - removed, added bonus, entire stairway repainted

- ~~Mud in ditch has reached the bridge section, obscuring walkway~~
Status - removed

- Building in need of painting,
Status - Inclement weather has slated this job to be done when summer help will be available
~~shrubbery overgrown~~
Status - removed

- ~~weeds along side of building~~
Status - removed

- ~~Bay window, bottom middle pane cracked~~
Status - removed & repaired

- ~~Glass top on table is cracked in several places, covered by duct tape, needs to be discarded~~
Status - removed & repaired

Used Oil containment tank Observations

- No sign to disclose tank contents
Status - No change

- "No Flames and lighted matches": on tank, but in need of being replaced, weathered badly
Status - No change

- ~~Containment tank has @ 8 inches of water inside~~
Status - removed

- ~~Weeds and rag debris in and around pit area, road sign leaning into road surface, pole has been bent~~
Status - removed

GRACE

▪Roof material is from metal siding, has sharp edges all around it, framing could use new paint
Status **-** Will be replaced by a better engineered system by the end of April

▪Oil measuring stick needs to be properly stored
Status - No change

Monitor Pit, building & Rock truck Observations

▪~~Lots of hoses, conduit, metal, wire and process debris laying around building and in front of monitor pit, all in walking areas~~
Status **-** Much better than before, although some debris beginning to accumulate again

▪~~Pit area needs railing along the edge of containment wall~~
Status **-** After long conversation with operators and supervisor, we have opted to install a step ladder into the pit, **Done**

▪~~Truck sitting in very muddy area, truck had back wheels perched on what seemed to be the retaining wall~~
Status **-** Better than before, although some debris beginning to accumulate again, and the nature of the process adds to buildup. This whole road surface needs to be in concrete to facilitate better drainage and cleanup

▪Road surface breaking up and broken leading to Monitor
Status - Some crushed rock added, but whole access road needs to be re-surfaced

▪Road surface in the immediate area less muddy, there was no berming along either drop off, driver had to enter from passenger side when we asked to check out truck
Status - No change

▪Exterior Hydraulic pump to the Ramie Loader covered in mud and debris
Status - No change

▪~~Wood retaining wall on east side is rotting~~
Status **-** Will have to be addressed at a latter date, when resurfacing the pit floor

▪~~Drain near the Ramie loader almost closed off by debris~~
Status **-** Much better than before, although some debris beginning to accumulate again

▪~~Road surface on bank side of road rail is eroding~~
Status **-** The nature of the process adds to buildup. This whole road surface needs to be in concrete to facilitate better drainage and cleanup

GRACE

- Walk ways to Mill staircase and Mogenson building uneven
  Status - No change

- ~~Signs needed around Ramie loader warning of possible danger~~
  Status - Completed

- ~~Drop cord plugged into outside electrical plug draped into building for no apparent reason~~
  Status - removed

Rock truck

- Windows, mirrors, truck very dirty inside and out, front windshield had a @ 11 inch half moon crack in it
  Status - No change

- Floor of truck had a lot of dried mud on it
  Status - No change

- Windshield wipers need replacing
  Status - No change

- ~~Right rear brake canister housing missing, right rear running light out, right outside front tire was flat~~
  Status - Repaired

- Box exterior rough and rusting, numerous spot welding observed
  Status - No change

- No tailgate on truck, process spillage and water evident when truck pulled away from parking area, very evident on the main road
  Status - No change

Monitor building

- ~~Fluorescent lighting flickering on and off, bulbs need replacing~~
  Status - Repaired

- Debris in building, mud, tools, hose pieces, clothing, nut and bolts, magazines
  Status - slight change, items described continue to scattered throughout building

- ~~Large radio did not have approved grounding plug, antennas were at eye level~~
  Status - Repaired and moved

- ~~Plexiglas windows severely scratched~~
  Status - Repaired

GRACE

▪Railing and steps, and building need to painted
Status - Inclement weather has slated this job to be done when summer help will be available

Mogenson building

▪Road surface to walkway is several inches higher, surface uneven due to road condition, railing should be extended to compensate
Status - No change

▪~~Break in the expanded metal walkway, 4 sections down, @ 3-4 inch hole~~
Status - Repaired

▪Railing and elevated walking ramp need to painted
Status - Inclement weather has slated this job to be done when summer help will be available

▪~~Half deck of building had some process overflow on steps, top of the rod mill building had at least 1 ton of overflow. This structure will not support this type of weight~~.
Status - Although removed on a much more frequent basis, area continues to collect debris

▪~~Debris such hoses, screens, pieces of metal strewn along walkway~~
Status - Removed

▪~~Crawl space behind screens showing process overflow on floor several inches deep~~
Status - Removed

▪~~Door leading into main floor severely rusted at bottom, ragged, jutting metal exposed~~
Status - Repaired

▪~~Hoses, metal bars, nuts and bolts, welding leads either strewn on floor or not properly stored~~
Status - Removed and stored, but needs to be maintained regularly!

▪~~Flooring felt spongy in some areas, rusting obvious where spillage wasn't covering it~~
Status - Repaired

▪~~Spillage was throughout the building form a light covering on walls and fire extinguisher to several inches deep on floor and cyclone deck~~
Status - Removed, but needs to be maintained regularly, leaks were beginning a new pile

GRACE

▪Chains not set in place on elevated surface
Status - No change, also the main floor chain behind the screens was now unhooked, part of the flooring was exposed!!!!!!!!

▪~~Several pipes had small leaks evident~~
Status - Repaired

▪Double doors both rusted severely, jagged, rough edges exposed, need replacing. A kick plate needs to be put at base of the door way
Status - No change, although understood doors were on order

▪~~Electrical cord left on floor~~
Status - Removed

▪~~Open area around piping through floor needs to have toe guards around them~~
Status - Repaired

▪~~Broken window pane on opposite wall~~
Status - Removed, but not repaired, window frame is off track and jutting out from building!
▪~~East wall showed numerous signs of rusted , broken wall structure~~
Status - Repaired, still small areas to be worked on

Reagent Tank Farm

▪~~Debris along walkways and landings in the form of buckets, shovels, caulking, rain caps, etc. Square head shovel upright through the expanded metal~~
Status - Removed, but needs to be maintained regularly, leaks were beginning a new pile

▪~~Chain guards along the driving surface should be replaced with more rigid material such as pipe rail~~
Status - Remove, and much stronger safety fluorescent chain replaced it

▪~~Containment has no signs as to "No Smoking or Open flames" variety~~
Status - Sign put up

▪~~Need for more fire extinguishers~~
Status - 2 more 20 lb. ABC extinguishers were erected on unit

▪~~Evidence of Amine, Alum, and Oil spills of varying amounts, Alum residue as well as oil residue on tanks at least their entire length~~
Status - Cleanup and inclement weather helped, now removed

GRACE

▪~~Combination of debris, mud, remnants of reagents made for very treacherous walking while auditing~~
Status - Removed, also road rerouted, and pad chained causing the flow of traffic through the area to be brought to standstill

▪~~Some exterior debris in the form of pipes and tools noted~~
Status - removed

▪Fuel oil placard not visible due to spill down tank side
Status - No change

▪Lines from tank farm to mill as well as hookup lines need to labeled for contents
Status - Inclement weather has slated this job to be done when summer help will be available

▪~~Sump pump pit open and exposed with no covering, 1-1/2 ft drop off~~
Status - Repaired, much better engineered system should virtually eliminate the problem again

▪~~Pump seems to be suspended and anchored by a long 2x4 straddling the edge of containment wall and bailing wire~~
Status - Repaired, much better engineered system should virtually eliminate the problem again

▪~~Exposed wiring leading to pump should be in conduit~~
Status - Repaired, much better engineered system should virtually eliminate the problem again

CONCLUSION: The areas & items that are still open be re-audited again in approximately one month. This should be more than enough time to finish this audit completely. Please try to work these items to completion so that a following re-audit is not necessary.

MINUTES OF THE MEETING
APRIL 5, 1996

ATTENDEES: L. Bablouzian, Jeff Danneker, Charlie Killian and Joe Rogan

CC: B. Arevalo

Issues:

1. Quality Testing
   - Evaluating OSP - Particle Dist.
   - Settling
   - Ph - Does it matter to the customer?
   - Sheer - Brookfield @ Level (RPMS)
   - Tensile Strength

2. Capacity
   - Equipment - Dual line
     - Powder
     - Mini-Circuit
     - Ultra Filtration
     - Optimize Refined Process

3. Plant Design - May 17th or 24th

4. Waste Feasibility
   - BOD/COD - Complete!
   - Li/Mg - Underway -Calculate Actual/Discharge for new
   - Recycle

5. Permitting - Working with R & C

6. Boxes - Customers want
   - Southern - Newtex - Amatex
   - Fill HTS-XE

   Action: JAD advised JAS to inform customers of the sample packaging. Complete!

7. 963 Plus +

8. Powder Production

9. Refined Technology
   - 923 Sweet
   - Less Recovery - Scenario

Sales Issues:

- Refined Disp - Locate to SC first to increase capacity
- Lack of Resources
  - Customized formulations
- Capacity
- High Viscosity Pump - could we increase solids levels.

Action:

Ben: Charlie - Ultra Filtration
- Automative Equipment - Steve's/Peter's Plans
- Hire another employee

- Weekends -
  Thursday or Friday, April 25 or 26th
  Design - May 6th
- Identify options, costs and strategies

963 Plus +
- Inventory - Produce two drums

Ben & Charlie's coordinate tanks
- Start two settlings - May 6th
- Test Outlined - May 10th
- Recirculate May 13th - After production on 923 (40 drums completed by May 10th)

Presentation on Plant w/J. S. Wynant - May 17th or May 24th
- Total Cost
  - What are we going to do?
  - What is @ risk today?
- Update of Sales - required
- Get w/Straker (week of the May 6th)

Effluent: Testing: (Estimated cost $5,000)
Equipment: - Tanks - 200-500 gallons
- A & B streams
- Plumbing
Resources - L.B. - leader
C.K.
B.A
Space
Ben & Charlie Set up - May 6th start testing

<u>Wish List for Equipment Ben & Charlie:</u>

Equipment should be: Transferable to SC
Assist in building inventory for move.

Start Identifying Q.C. test to Measure: Ben & Charlie

How can we define:
- Particle Dist.
- Settling
- Ph - Customer
- Sheer - Brookfield @ levels (RPM)
- Tensile

<u>Ideas on Powder Production:</u> Charlie

- Include sq. footage for plant layout
- Special Utility Requirements

FAX TRANSMISSION

ROGERS & CALLCOTT
ENGINEERS, INC.
P. O. BOX 5655
GREENVILLE, SC 29606
(718 LOWNDES HILL ROAD 29607)
PHONE (864) 232-1556 • FAX: (864) 233-9058

COPY

To:	Maria Knutsen	**Date:**	April 23, 1996
Fax #:	(407) 362-1635	**Pages:**	11, including this cover sheet.
From:	Dale J. Haase		
Subject:	Compliance Determination for Grace		

COMMENTS:

Maria,

I have drafted some language to include in a response to DHEC and have also included what I found to be the pertinent parts of 40 CFR 60. Thus far we have not mentioned the applicability of SC Regulation 61-62.1 Section II (A)(1)(a) which states that "any person who plans to construct, alter or add to a source of air contaminants, including installation of any device for the control of air contaminant discharges, shall first obtain a construction permit from the Department." I offhandedly addressed this in the sentence about having included the information necessary for permitting the Mogensen Screens in the Part 70 permit application. DHEC will probably bring this up whether we address it or not. If they ignore it, we should too.

There is nothing that can be done about the notifications of anticipated startup required by 40 CFR §60.7(a)(2) (water under the bridge), so drafting a compliance plan for these would be moot. This also applies to the equipment no longer in service which would have required construction permits.

Although no due date is given for the notification of replacement with equal or smaller size required in 40 CFR §60.676(a), the notification requirements of §60.7(a)(2) were not met for any of this equipment. This and the failure to obtain construction permits are only violations that DHEC could feasibly charge Grace with. Based on the self policing and reporting policy adopted by DHEC, these violations are procedural in nature and not likely to generate any fines or further action.

Call me if any problems receiving.

Thanks,

Dale

c: Mike Balcer FAX 864-969-3808

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April 23, 1996

Mr. Jerry Chalmers
Manager, Technical Management Section
Bureau of Air Quality
South Carolina Department of Health
and Environmental Control
2600 Bull Street
Columbia, SC 29201

Re: NSPS Subpart OOO Applicability
Grace Construction Products - Enoree Operations
(SC BAQ Permit #1520 - 0015)

Dear Mr. Chalmers:

Grace Construction Products, Enoree SC facility ("Grace") has completed our review of records of equipment information including installation dates, equipment sizes, and operating records. We have determined that some equipment installed at the Enoree location are considered "affected facilities" and are subject to limited NSPS Subpart OOO provisions.

In our letter notifying you of NSPS Subpart OOO potential applicability, dated March 28, 1996, the following equipment was identified as being potentially subject to NSPS Subpart OOO:

1) Mogensen Screens: Equipment ID #3P (for product classification), Exhaust Point - East Ventilation System;

2) #3 Slot Rescreen: Equipment ID #5P (for product classification), Exhaust Point - East Ventilation System;

3) Fitz Mill: Equipment ID #22P (for product sizing), Exhaust Point - East Ventilation System; and

4) Roll Crusher: Equipment ID #23P (for product sizing), Exhaust Point - East Ventilation System.

Our determination of NSPS Subpart OOO applicability to these affected facilities follows.

1. Mogensen Screens: Equipment ID #3P

Six Mogensen screens were installed to replace six existing Allis Chalmer screens. The Mogensen screens have top screen dimensions smaller than those of the Allis Chalmer screens and are thus considered to be of equal or smaller size.[1] The Mogensen screens are therefore exempt from the provisions of §§60.672, 60.674, and 60.675.[2]

In accordance with 40 CFR §60.676(a) and (b), the following information is submitted:

In 198(?) six Allis Chalmer screens manufactured in 19(??) and having top screen dimensions of [W? x L?] were replaced by six Mogensen screens manufactured in 19(??) and having top screen dimensions of [W? x L?]. There were no particulate matter control devices installed on the Allis Chalmer screens at the time of replacement.

In accordance with 40 CFR §60.7(a)(3), the following information is submitted:

The Mogensen screens began operation on or about Month? Day?, 19??.

2) #3 Slot Rescreen: Equipment ID #5P

This equipment was installed (on-line? Off-line? In a test circuit) in 19?? for test runs to determine its effectiveness for improving material classifying. It was operated for a total of not more than ??? hours. The testing showed that this equipment would not meet the needed process criteria and was taken off line permanently. The #3 Slot Rescreen did not reach its maximum production rate and was shut down prior to operating 180 days. Therefore the requirement for initial performance testing (40 CFR §60.8) to show compliance with the particulate matter emission standards and opacity standards stated in 40 CFR §60.672(a) is not applicable.

In accordance with 40 CFR §60.7(a)(3), the following information is submitted:

The #3 Slot Rescreen began operation on or about Month? Day?, 19?? and was shut down permanently on or about Month? Day?, 19??.

---

[1] Size means ... the total surface area of the top screen of a screening operation ...[40 CFR 60.671].

[2] "When an existing facility is replaced by a piece of equipment of equal or smaller size, as defined in §60.671, having the same function as the existing facility, the new facility is exempt from the provisions of §§60.672, 60.674, and 60.675 except as provided for in paragraph (d)(3) of this section." [40 CFR §60.670(d)(1)]

3) Fitz Mill: Equipment ID #22P (for product sizing), Exhaust Point - East Ventilation System.

This equipment was installed (on-line? Off-line? In a test circuit) in 19?? [for test runs?] to determine its effectiveness for improving material throughput. It was operated for a total of not more than ??? hours. The testing showed that this equipment would not meet the needed process criteria and was taken off line permanently. The Fitz Mill did not reach its maximum production rate and was shut down prior to operating 180 days. Therefore the requirement for initial performance testing (40 CFR §60.8) to show compliance with the particulate matter emission standards and opacity standards stated in 40 CFR §60.672(a) is not applicable.

In accordance with 40 CFR §60.7(a)(3), the following information is submitted:

The Fitz Mill began operation on or about Month? Day?, 19?? and was shut down permanently on or about Month? Day?, 19??.

4) Roll Crusher: Equipment ID #23P (for product sizing), Exhaust Point - East Ventilation System.

This equipment was installed (on-line? Off-line? In a test circuit) in 19?? [for test runs?] to determine its effectiveness for improving material throughput. It was operated for a total of not more than ??? hours. The testing showed that this equipment would not meet the needed process criteria and was taken off line permanently. The Roll Crusher did not reach its maximum production rate and was shut down prior to operating 180 days. Therefore the requirement for initial performance testing (40 CFR §60.8) to show compliance with the particulate matter emission standards and opacity standards stated in 40 CFR §60.672(a) is not applicable.

In accordance with 40 CFR §60.7(a)(3), the following information is submitted:

The Fitz Mill began operation on or about Month? Day?, 19?? and was shut down permanently on or about Month? Day?, 19??.

In the Part 70 permit application for Grace, full information required for permitting the Mogensen Screens has been submitted. A revision of section C of the Part 70 permit application for Grace will be submitted showing the out of service nature of the #3 Slot Rescreen and the Fitz Mill. The Roll Crusher was scrapped altogether and is being removed from the Part 70 permit application.

By this letter, Grace has addressed and fulfilled, as possible, each outstanding applicable NSPS requirement and therefore obviates submitting a revised Section K for the Part 70 permit application as initially requested in the letter by John T. Igo (BAQ) dated

April 10, 1996. Thank you for your consideration in this matter. Please contact [somebody] if you have further questions regarding this issue.

Sincerely,

cc: Mr. Jay Burrill - Grace Construction Products
Mr. Michael J. Balcer - Grace Construction Products
Ms. Maria M. Knutsen - Grace Corporate
Mr. Mark Stoler - Grace Corporate
Mr. Carl W. Richardson, P.E. - SC DHEC BAQ
Mr. John T. Igo - SC DHEC BAQ

40 CFR 60 Subpart A—General Provisions

40 CFR 60.2 Definitions.

Affected facility means, with reference to a stationary source, any apparatus to which a standard is applicable.

Construction means fabrication, erection, or installation of an affected facility.

Startup means the setting in operation of an affected facility for any purpose.

40 CFR 60.5 Determination of construction or modification.

§60.5(a) When requested to do so by an owner or operator, the Administrator will make a determination of whether action taken or intended to be taken by such owner or operator constitutes construction (including reconstruction) or modification or the commencement thereof within the meaning of this part.

§60.5(b) The Administrator will respond to any request for a determination under paragraph (a) of this section within 30 days of receipt of such request.

40 CFR 60.7 Notification and record keeping.

§60.7(a) **Any owner or operator subject to the provisions of this part shall furnish the Administrator written notification as follows:**

(1) A notification of the date construction (or reconstruction as defined under §60.15) of an affected facility is commenced postmarked no later than 30 days after such date. **This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.**

(2) **A notification of the anticipated date of initial startup of an affected facility postmarked not more than 60 days nor less than 30 days prior to such date.**

(3) A notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.

§60.7(b)Any owner or operator subject to the provisions of this part shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of

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an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

40 CFR 60.8 Performance tests.

§60.8(a) **Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility and at such other times as may be required by the Administrator under section 114 of the Act, the owner or operator of such facility shall conduct performance test(s) and furnish the Administrator a written report of the results of such performance test(s).**
40 CFR 60.8(b)

40 CFR 60.14 Modification.

§60.14(a) Except as provided under paragraphs (e) and (f) of this section, any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the Act. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere.

§60.14(b) Emission rate shall be expressed as kg/hr of any pollutant discharged into the atmosphere for which a standard is applicable. The Administrator shall use the following to determine emission rate:

(1) Emission factors as specified in the latest issue of "Compilation of Air Pollutant Emission Factors," EPA Publication No. AP-42, or other emission factors determined by the Administrator to be superior to AP-42 emission factors, in cases where utilization of emission factors demonstrate that the emission level resulting from the physical or operational change will either clearly increase or clearly not increase.

(2) Material balances, continuous monitor data, or manual emission tests in cases where utilization of emission factors as referenced in paragraph (b)(1) of this section does not demonstrate to the Administrator's satisfaction whether the emission level resulting from the physical or operational change will either clearly increase or clearly not increase, or where an owner or operator demonstrates to the Administrator's satisfaction that there are reasonable grounds to dispute the result obtained by the Administrator utilizing emission factors as referenced in paragraph (b)(1) of this section. When the emission rate is based on results from manual emission tests or continuous monitoring systems, the procedures specified in appendix C of this part shall be used to determine whether an increase in emission rate has occurred. Tests shall be conducted under such conditions as the Administrator shall specify to the owner or operator based on representative performance

of the facility. At least three valid test runs must be conducted before and at least three after the physical or operational change. All operating parameters which may affect emissions must be held constant to the maximum feasible degree for all test runs.

§60.14(c) The addition of an affected facility to a stationary source as an expansion to that source or as a replacement for an existing facility shall not by itself bring within the applicability of this part any other facility within that source.
40 CFR 60.14(d)

§60.14(g) Within 180 days of the completion of any physical or operational change subject to the control measures specified in paragraph (a) of this section, compliance with all applicable standards must be achieved.

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40 CFR 60 Subpart OOO—Standards of Performance for Nonmetallic Mineral Processing Plants

40 CFR 60.670 Applicability and designation of affected facility.

§60.670(a) Except as provided in paragraphs (b), (c) and (d) of this section, the provisions of this subpart are applicable to the following **affected facilities** in fixed or portable nonmetallic mineral processing plants: **each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station**.

§60.670(d)

(1) When an **existing facility** is **replaced** by a piece of equipment of **equal or smaller size**, as defined in §60.671, having the same function as the existing facility, the **new facility is exempt from** the provisions of **§§60.672, 60.674, and 60.675** except as provided for in paragraph (d)(3) of this section.

(2) **An owner or operator seeking to comply with this paragraph shall comply with the reporting requirements of §60.676(a) and (b).**

(3) An owner or operator replacing all existing facilities in a production line with new facilities does not qualify for the exemption described in paragraph (d)(1) of this section and must comply with the provisions of §§60.672, 60.674 and 60 675 .

§60.670(e) **An affected facility** under paragraph (a) of this section that commences construction, reconstruction, or modification after August 31, 1983 **is subject to the requirements of this part**.

40 CFR 60.671 Definitions.

Screening operation means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series, and retaining oversize material on the mesh surfaces (screens).

***Size* means** the rated capacity in tons per hour of a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station; **the total surface area of the top screen of a screening operation**, the width of a conveyor belt; and the rated capacity in tons of a storage bin.

40 CFR 60.672 Standard for particulate matter.

§60.672(a) **On and after the date on which the performance test required to be conducted by §60.8 is completed,** no owner or operator subject to the provisions of this subpart shall cause to be

discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any stack emissions which:

(1) Contain particulate matter in excess of 0.05 g/dscm; or

(2) Exhibit greater than 7 percent opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing control device. Facilities using a wet scrubber must comply with the reporting provisions of §60.676(c), (d), and (e) .

§60.672(b) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10 percent opacity, except as provided in paragraphs (c), (d) and (e) of this section.

§60.672(c) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator shall cause to be discharged into the atmosphere from any crusher, at which a capture system is not used, fugitive emissions which exhibit greater than 15 percent opacity.

40 CFR 60.676 Reporting and recordkeeping.

§60.676(a) **Each owner or operator seeking to comply with §60.670(d) shall submit to the Administrator the following information about the existing facility being replaced and the replacement piece of equipment.**

(2) **For a screening operation:**

(i) **The total surface area of the top screen of the existing screening operation being replaced and**

(ii) **The total surface area of the top screen of the replacement screening operation.**

§60.676(b) **Each owner or operator seeking to comply with §60.670(d) shall submit the following data** to the Director of the Emission Standards and Engineering Division, (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

(1) **The information described in §60.676(a).**

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(2) A description of the control device used to reduce particulate matter emissions from the existing facility and a list of all other pieces of equipment controlled by the same control device; and

(3) The estimated age of the existing facility.

§60.676(g) The requirements of this paragraph remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with paragraphs (a), (c), (d) , (e), and (f) of this section, provided that they comply with requirements established by the State. Compliance with paragraph (b) of this section will still be required.

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Grace Construction Products

GRACE

TO: Distribution

DATE: April 17, 1996

FROM: J. J. Henningson

SUBJECT: Luck of the Draw Near-Miss Summary

CC:

J. J. Adams/Cambridge-21
B. Alto/Boca Raton
M. J. Balcer/Enoree-114
G. Balmer/Slough, England
D. J. Curreri/Cambridge-83
A. daSilva/Canada-Ajax
R. Dean/Slough, England
P. H. DiLuca/Cambridge-83
E. Domine/Chicago GCP-110
P. T. Edelman/Cambridge-36
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J. P. M. Gray/Cambridge-17
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M. Jackson/Cambridge-46
W. H. Johnson/Chicago GCP-110
N. R. Kivell/Canada-Ajax
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D. C. Lyons/Cambridge-28
R. R. Lyons/Cambridge-84
P. J. McLaughlin/Pompano-138
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M. D. Ragan/Cambridge-25
T. Robinson/Slough, England
J. G. Rogan/Cambridge-63
M. F. Roth/Pleasanton-137
B. Rugg/Cambridge-25
M. D. Seeler/Cambridge-15
L. S. Shu/Cambridge-88
R. Sorrentino/Cambridge-21
M. Smith/Hong Kong
R. C. H. Tan/Singapore
H. H. Tormey/Houston GCP-121
N. Usta/Cambridge-92
P. J. Walsh/Cambridge-37
J. Wang/Hong Kong (18)
D. L. Wightman/Cambridge-24
T. E. Winkel/Cambridge-28
J. S. Wynant/Cambridge-63

Attached is the second edition for 1996 of the near-miss summary "Luck of the Draw." The summary contains near-misses reported to Cambridge EHS since the last "Luck of the Draw" issue. Please post on your facility bulletin board and encourage your employees to report and discuss all near-miss incidents.

It is suggested that you spend five minutes at your next safety meeting discussing near-misses; either those that have occurred at your facility or those listed in the summary. If you have ideas on how we could improve the information provided in the summary, please call me in Cambridge at extension 4560.

John J. Henningson

J. J. Henningson

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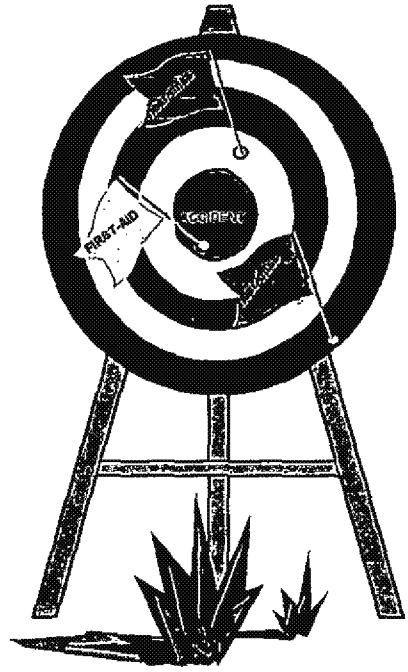
Attachments

If we don't deliver value, we haven't delivered.



LUCK OF THE DRAW

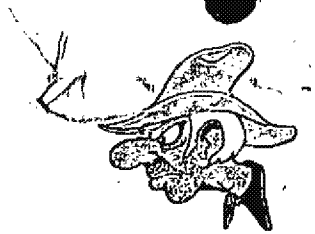
You have been challenged to report all near-miss incidents. To date, in 1996 eighty-nine near-misses have been compiled in two Luck Of The Draw summaries. This is a significant increase in reporting from last year.

Near-miss reporting and the analysis of data to identify areas in our systems and behavior requiring change is what will prevent injury and bring our safety culture to the next level. To make the jump to the next level and to accurately use the data being reported in the near-miss reports, we must have a high level of consistent participation across all units. Near-miss reporting has increased but is inconsistent. The following are stats by business unit for 1996 near-miss reporting to date.

Business Unit	Percent 1996 Near-Miss Reported
Canada	64%
Waterproofing	4.5%
Masonry	4.5%
Fire Protection	2%
Cement and Concrete Products	2%
Cambridge Facilities	2%
Specialty Vermiculite	1%

REPORT ALL NEAR-MISSES!

LUCK OF THE DRAW



Near-Miss Summary

Volume 96.2

Note: When reading incident descriptions, remember that a near-miss is when no injury occurred (not first-aid or recordable injury).

Location	Incident	Potential Facility Damage & Personal Injury	Cause	Suggested Corrective Action
Phoenix, Arizona	Truck driver was climbing down after tarping his load and lost his footing resulting in fall.	Broken bones or other serious injuries from fall!	Driver was unaware of ladder provided for tarping loads.	Install sign at the loading dock providing instructions for tarping trailers.
Ajax, Ontario	Rain was leaking into building and dripping onto high voltage lines.	Danger of electric shock, facility power failure, or possible fire!	Leak in wall where gypsum line comes into building.	Repair leak around gypsum air conveying line.
Ajax, Ontario	Automatic door closed unexpectedly when taking out dust bin.	Injury to employee if hit by closing door. Damage to door and tow motor!	The sensor on the door did not work correctly.	Test the door sensor and if necessary have it repaired by service contractor.
Ajax, Ontario	A rod dislodged from main power disconnect to durant elevator/ palletizer. The rod was protruding into panel and would have contacted circuits if door was closed.	Death or serious electric shock if employee had shut panel door. Damage to durant equipment!	The screw locking the rod into the switch had fallen out.	Repair disconnect switch immediately.
Edmonton, Alberta	An overhead heater was hit with a pallet of Zonolite Perlite Masonry Insulation (ZPMI).	The forklift operator or any individual in close proximately could have been injured by falling items. Possible electric shock and fire danger!	Triple stacked pallet in vicinity of overhead heater.	Stress importance of not storing or moving triple stacked pallets in areas around overhead heaters.

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LUCK OF THE DRAW

Near-Miss Summary (con't)

Volume 96.2

Location	Incident	Potential Facility Damage & Personal Injury	Cause	Suggested Corrective Action
Vancouver, BC	Leaky roof in vermiculite area caused floor to become wet presenting hazard when moving bags from scale.	Ankle sprain, back or other injury, if slip occurred while carrying vermiculite bag!	Leaky roof.	Repair roof.
Milwaukee, Wisconsin	Drum dolly was left in walkway of production area.	Sprained ankle, broken leg or other injuries from tripping over this piece of equipment!	Drum dolly left in walkway and not properly returned to storage area.	Stress importance of returning equipment to proper storage areas.
Milwaukee, Wisconsin	Temporary employee was attempting to push a partially full 55 gallon drum onto a pallet.	Back or other strains associated with moving this heavy object!	Employee was not informed of proper procedures for moving drums.	Stress to employees that the forklift and drum picker should be used to move all drums containing material.
Milwaukee, Wisconsin	Employee slipped on metal door threshold.	Ankle sprain, back or other injury from fall!	Slippery threshold.	Replace threshold or cover with non-slip material.
Ajax, Ontario	Employee tripped over pallet left in production area walkway.	Ankle sprain, back or other injury from fall!	Empty pallet left in walkway and not returned to proper storage area.	Stress importance of returning pallets to proper storage areas.
Vancouver, BC	After returning from outside employee was warming himself near vermiculite furnace elevator when coveralls started to melt.	Severe burns!	Improper place to warm up.	Warm up in the lunch room.

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LUCK OF THE DRAW

Near-Miss Summary (con't)

Volume 96.2

Location	Incident	Potential Facility Damage & Personal Injury	Cause	Suggested Corrective Action
Winnipeg, Manitoba	Employee was working at the vermiculite ore off-loading pit and nearly fell when he stepped between the conveyor and wall of the pit.	Broken leg or other injuries resulting from fall into pit!	Snow covered opening and no cover on the pit.	Install grate or cover over this opening. Remove snow before beginning work.
Cambridge, Massachusetts	Employee was climbing down from the back of a truck when he slipped pulling a shoulder muscle.	Sprained or dislocated shoulder or other more serious injury if he had fallen from back of truck!	When climbing out of truck slippery floor required employee to grab side of truck with both hands.	Use loading dock to prevent need for climbing down from back of truck.
Ajax, Ontario	Too much mop treatment was used on the floor causing employee to slip.	Broken or sprained ankle or leg!	Slippery surface caused by mop treatment.	Stress that mop treatment should be applied to mops and not floors.
Milwaukee, Wisconsin	Broom was inadvertently left in doorway where someone could trip over it.	Broken or sprained ankle or leg!	Improperly stored broom.	Remind employees to return brooms to broom closet.
Bedford Park, Illinois	Outside contractor installed valve backwards in RA line. During installation improper line breaking procedures were used.	Burns and facility damage from exposure to hot RA!	Improperly installed valve and inadequate isolation of hazardous energy. (LOTO)	Reinstall valve and review line breaking procedures with outside contractor.

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LUCK OF THE DRAW

Near-Miss Summary (con't)

Volume 96.2

Location	Incident	Potential Facility Damage & Personal Injury	Cause	Suggested Corrective Action
Ajax, Ontario	Peat moss hammer mill was jammed. Employee serviced equipment without using LOTO procedures.	Serious hand or arm injury. Possible death if equipment was accidentally energized!	Improper procedures for maintenance of equipment.	Review LOTO procedures at next safety meeting.
St. Paul, Minnesota	Sales technician pinched finger in Kamlock when putting transfer pump into back of truck.	Broken finger!	Improper placement of hand when lifting pump.	Stress that when moving equipment fingers should be kept clear of possible pinch points.
Winnipeg, Manitoba	Fingers were caught when another employee shut door.	Broken fingers, bruises or cuts!	Improper positioning of hand on door.	Stress more awareness of hand positioning around doors.
Winnipeg, Manitoba	Lift truck hit shipping door when backing out of trailer.	Broken door and window. Employee injury from flying glass!	Not looking in direction of lift truck travel.	Review proper lift truck operation procedures.
Winnipeg, Manitoba	Broken glass in shipping door was not repaired after being hit by lift truck.	Cuts or lacerations from broken glass!	After door was hit by lift truck broken window was not repaired.	Repair broken glass on the shipping door.
Vancouver, BC	Steel pipe was left resting between two tank tops. One tank was moved and pipe fell hitting employee on the back.	Serious head or other injury from falling pipe!	Improper storage/placement of steel pipe.	Stress the importance of not leaving unsecured items at elevated heights.

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LUCK OF THE DRAW

Near-Miss Summary (con't)

Volume 96.2

Location	Incident	Potential Facility Damage & Personal Injury	Cause	Suggested Corrective Action
Ajax, Ontario	Employee was climbing down silo ladder when tape measure fell off his belt.	Serious head injury if individual below was struck by falling tape measure!	Unsecured tool when descending from elevated height.	Stress to employees that all tools must be secured in tool belt when descending from heights.
Ajax, Ontario	When producing Cryogenic Perlite the mini-bulk bag being filled caught on fire.	Fire causing serious employee injury or equipment and facility damage!	Silicone build-up inside equipment was cause of fire.	Periodic clean out of equipment to prevent silicone build-up.
Cambridge, Massachusetts	When changing head on laboratory compressive strength machine, head fell hitting employee's finger.	Broken or cut fingers resulting from falling 50 lbs. head!	Improper procedures for removing this heavy component.	SOP has been written and a jack purchased for removing head.
Edmonton, Alberta	While servicing vermiculite packer, spout was hung from railing. The spout fell during maintenance of equipment.	Injury to arms, legs or feet from falling spout!	Improper placement of vermiculite packer spout.	Stress to employees that when performing maintenance that parts should be place on stable services.
Ajax, Ontario	Employee was walking with his head turned away to prevent exposure to welding flash. The employee inadvertently walked into raised forks on a lift truck.	Broken ribs, bruises or other injury!	Outside contractors improper use of lift truck and failure to use a welding screen.	Review with the contractor proper procedures for welding and use of lift truck.

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Near-Miss Summary (con't)

Volume 96.2

Location	Incident	Potential Facility Damage & Personal Injury	Cause	Suggested Corrective Action
Ajax, Ontario	Contractor placed equipment on elevated storage area using lift truck. When lowering forks employee exited locker room door almost walking into forks.	Broken ribs, bruises or other injury!	Outside contractors improper use of lift truck.	Review with the contractor proper procedures for use of lift truck.
Muirkirk, Maryland	Key was left in compressor room door when employee was walking by it struck his elbow.	Cuts and scraps!	Key was left in door.	Install hook on the door or wall where key can be hung.
Ajax, Ontario	Employee was pushing peat moss into hammer mill with stick.	Eye, face or other bodily injury if stick was jerked or thrown from hammer mill!	Peat moss was frozen and had to be force into hammer mill.	Arrange inside storage so that air can circulate allowing peat moss bales to thaw.
Montreal, Quebec	Employee was standing on a pallet truck while changing empty forklift propane tank.	Foot, leg or other injury if propane tank had fallen and hit individual!	Standing on unstable unsecured object while removing tank.	Review proper procedures for changing out forklift propane tanks.
Ajax, Ontario	Employee was removing plastic from roll when roll fell from stand.	Bruises or broken bones resulting from roll hitting employee!	Inadequate securement of roll to stand.	Upgrade stand to include proper securement.

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Near-Miss Summary (con't)

Volume 96.2

Location	Incident	Potential Facility Damage & Personal Injury	Cause	Suggested Corrective Action
Bedford Park, Illinois	After propane vendor filled tank employee noticed leak from valve.	Explosion, fire, properly damage if leaking propane was exposed to ignition source!	Improperly closed or malfunctioning valve.	Contact vendor and express concern. Assign individual to monitor propane deliveries.
Vancouver, BC	When removing pilot clean out plug at perlite furnace sleeve of sweater was caught in coupling at burner blower motor.	Serious hand, arm or head injury if sweater sleeve had not been dislodged from coupling!	Guard was not present at this coupling.	Install guard on coupling between burner blower and motor.
Ajax, Ontario	A metal pipe was left on top of the Monokote Palletizer electric panel with the panel door open.	Dislodged pipe could have rolled off panel resulting in head injury, electric shock or equipment damage if pipe contacted circuits!	Inappropriate object left on top of control panel.	Stress to employees the importance of not leaving tools or other item on top of electric panels.
Montreal, Quebec	The side shifter on the two plant lift trucks are operated by levers that work in opposite direction. This causes confusion for the operator and a potential for accidents.	This situation could cause employee injury and product and facility damage if the shifter was accidentally operated in the wrong direction!	Design differences between the two lift trucks.	It was suggested that the hydraulic hoses on one of the lift trucks be reversed so levers would operate identically.

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Near-Miss Summary (con't)

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Location	Incident	Potential Facility Damage & Personal Injury	Cause	Suggested Corrective Action
Ajax, Ontario	Employee was backing up lift truck and hit concrete beam.	Operator injury from abrupt stop. Facility damage or serious injury to any employee if hit by lift truck!	Operator driving to fast and not looking in direction of travel.	Stress proper procedures for backing up at next safety meeting.
Ajax, Ontario	Employee was walking in the plant when he was knocked over by lift truck.	Serious employee injury including death!	Lift truck operator not looking when backing up.	Review proper procedures for backing up at next safety meeting.
Ajax, Ontario	Trailer fell off truck cab as it exited to street.	Serious injury to other vehicle operators if collision had occurred with trailer!	Improper connection between trailer and cab.	Review trailer connection procedures with this driver.
Winnipeg, Manitoba	When parking vehicle slid on the ice hitting another vehicle.	Damage to vehicles or serious injury to individuals walking through the parking lot!	Excessive speed and ice in parking lot.	Sand and salt parking lot. Stress that speed should be reduced in icy and snowy conditions.
Winnipeg, Manitoba	Icy on yard combined with lift truck movement inside trailer caused trailer to move away from loading dock.	Serious injury or death to operator if lift truck had fallen between loading dock and trailer!	Icy yard and fork truck movement inside trailer.	Make sure the yard in front of the loading dock is adequately sanded and salted.

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LUCK OF THE DRAW

Near-Miss Summary (con't)

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Location	Incident	Potential Facility Damage & Personal Injury	Cause	Suggested Corrective Action
Enoree, South Carolina	Two haul trucks after traveling through a detoured section of road on their way to the mill were almost hit by speeding vehicle. The vehicle was later involved in fatal crash at the detour.	Accident causing serious injury to the two haul truck operators!	Speeding vehicle.	The two drivers used appropriate accident avoidance techniques. This near miss was discussed with drivers the following day.
Ajax, Ontario	Supplier semi-trailer ran into employee's parked car.	Damage to car or serious injury to any individual in the area if hit by trailer!	In attention of driver when backing up. Car was parked partially in the entrance to loading dock area.	Inform employees that cars should not be parked in this area. Explain that there is ample space in office area parking lot. Stress to driver the importance of having a clear path when backing up.
Ajax, Ontario	Employee was parking car and skid into back of other vehicle.	Damage to cars or serious injury to individual if hit by skidding car!	Ice and snow on the parking lot.	Sand and salt parking lot. Inform employees that speed should be reduced in icy and snowy conditions.
Vancouver, BC	Wet bag burst while being filled at bagging station.	Eye irritation!	Leaking roof caused bags to become wet compromising their integrity.	Move bags or repair roof.
Ajax, Ontario	Reject bag was pulled off chute and lose material fell into employee's eye.	Eye irritation and injury from dust!	Chute is not positioned so reject bags will fall properly.	Reposition down chute so bags fall easily.

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Near-Miss Summary (con't)

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Location	Incident	Potential Facility Damage & Personal Injury	Cause	Suggested Corrective Action
Winnipeg, Manitoba	When changing a mini bulk bag of perlite the ladder being used broke.	Sprained, broken ankle or other more serious injuries from fall!	The ladder was old and not rated for heavy industrial use.	Replace ladder.
Ajax, Ontario	Forklift safety cage was being used without gate or safety chain to secure individual inside.	Serious injury or death if individual at elevated height were to fall from safety cage!	Gate was removed after hinge broke. A chain rail was installed but was not used.	Repair and reinstall the gate on the safety cage.
Houston, Texas	A gas can is require to fuel motors in trailer pump box. Close contact with muffler is possible.	Burns from contact with muffler. Explosion or fire hazard from gas and gas vapor!	Inadequate trailer design.	Investigate and implement a safer way to fuel pumps. Add insulation to prevent burns. Wear proper PPE to prevent burns.
Houston, Texas	Various slips have occurred while employees descend stairways.	Sprained ankle or other more serious injury from slip, trip or fall!	Employees have not been trained recently on this topic.	Safe practices when ascending and descending stairways will be covered at the February Safety Meeting.
Houston, Texas	Portable pump used for product transfers are heavy and awkward.	Back strain, bruised, crushed, or broken foot if dropped!	Portable pumps are required at times when delivery truck and fixed pump equipment is inadequate.	Create a portable pump "cart".

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LUCK OF THE DRAW

Near-Miss Summary (con't)

Volume 96.2

Location	Incident	Potential Facility Damage & Personal Injury	Cause	Suggested Corrective Action
Los Angeles, California	When releasing Kamlock, fitting popped open due to extreme pressure build-up.	Injury from fitting or hose surge. Loss of balance causing fall from load platform!	Inability to bleed pressure prior to releasing Kamlock.	Install bled valve and pressure gage.
Houston, Texas	Parking stop located in the loading area is damaged with exposed rebar and jagged concrete.	Sprain from trip or fall, possible tire damage!	Parking stop has degraded over time.	Replace parking stop.
Houston, Texas	Inappropriate stool used to place retain samples on top shelf.	Injuries due to fall. Cuts from broken retain glass jar!	Improper equipment used to access shelf.	Purchase stable step stool.
Houston, Texas	Access to water meter at clip storage tank requires crossing over pipe lines.	Sprained ankle or other more serious injury from slip, trip or fall!	Location of water meter.	Move water meter or improve walking surface.
Houston, Texas	When dumping raw material bags at the Hydrophobe mix area, material falls through the platform to the pump and floor below.	Eye irritation from falling material. Sprain from slip or fall caused by accumulations of material on the floor!	Bags are damaged and leak when dumpling to mixer.	Investigate conveying options. Add solid working surface.

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LUCK OF THE DRAW

Near-Miss Summary (con't)

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Location	Incident	Potential Facility Damage & Personal Injury	Cause	Suggested Corrective Action
Houston, Texas	The Daracem 100 storage tank requires daily head space check to determine inventory. Pipes located in back of the ladder do not allow room for proper foot placement.	Minor injury such as twisted ankle or major injury from a fall!	Damaged site gage requires head space check. Poor placement pipes.	Repair site gage and/or relocate pipes. Prohibit ladder access until corrected.
Houston, Texas	Daily inventory checks of the WRDA 82 and DCI-S tanks creates an unsafe condition with increased hazard during rain.	Slip resulting in fatal fall from tank top!	Tank tops require access for head space reading. No safety railings in place.	Devise other methods to check inventory or install safety railings.
Los Angeles, California	Trailer top loading of Daravair 1000 and Daraccel results in foaming and compartment overflow.	Spilled product in load area. Slip and fall hazard!	Inadequate fill - pipe.	Install extension to allow pipe to reach bottom of compartment.
Los Angeles, California	Portable fan was used to vent warehouse during welding operation. Cord caught fire where it enters fan housing.	Fire with potential for serious property damage and employee injury!	Defective power cord. Probably had frayed over time.	Discard and replace fan. Institute monthly cord inspection.
Los Angeles, California	Rubber bungie cord used to secure drip bucket in load area slipped from grip while stretching.	Hook would have pierced skin of hand had gloves not been worn. Potential eye injury as well!	Use of bungie cord to attach drip bucket.	Replace bungie cord with a chain of the proper length.

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March 4, 1996

Gary L. Williams, Esquire
269 West Laurens Street
Laurens, SC 29360

Re: **Your Letter of February 14, 1996 Alleging "Unsafe Conditions"**

Dear Mr. Williams:

Your letter of February 14, 1996 to Mr. Michael Balcer has been referred to me for response.

Grace shares your concern for road and traffic safety. With all due respect, however, your letter appears to reflect less than complete knowledge of Grace's mining and related operations, and, as a result, is rather misleading. Grace welcomes the opportunity to provide you with additional information regarding its operations.

The pertinent facts include the following:

1. Grace conscientiously maintains mine pit conditions with motor graders and 3000 gallon water trucks to provide smooth surfaces and to suppress dust.

2. Grace also applies a black top covering at the exit of the mine where necessary which minimizes any potential dirt transfer onto the road surface.

3. To the extent reasonably necessary and as traffic and weather conditions allow, Grace sends out a water truck to wash off any dirt or ore along the road.

4. Despite the general references in your letter to two incidents in the past six months, Grace has not received a single complaint in the past year from any state, county or local authorities regarding road conditions in the vicinity of Grace's operations.

Mr. Williams, Grace takes pride in its excellent safety record and strives to be a good neighbor. I submit to you that Grace acts reasonably and responsibly. However, if you or your client(s) have any specific constructive ideas or suggestions for Grace, we would be happy to listen. I can assure you that any such ideas or suggestions would receive good faith consideration.

Very truly yours,

Kevin T. Grady/cl

Kevin T. Grady

KTG/cl

williams.doc

bcc: M. Balcer/Enoree
J. Gray/Cambridge
J. Rogan/Cambridge

Enoree / Kearney EHS Monthly

Update for February 1996

News for W.R. Grace & Co. Customers Vol. 1 No. 2 / February 27, 1996
(Dick Lyons and Joe Rogan)

ENOREE

Safety - Incidents, Accidents, Near Misses

➢ There were no accidents, involving recordables or lost time reported. One incident involving equipment damage. 96 - 002 - 1/30/96 - The card reader for the Mine Scales shack was found run or pushed over apparently by an outside trucking firm weighing their load after picking up from the Expander. (See attached incident report)

KEARNEY

Safety - Incidents, Accidents, Near Misses

➢ There were no accidents, involving recordables or lost time reported.

ENOREE

Health - Workers Comp cases, IH surveys, audits

➢ MSHA IH Respirable dust sampling for Jon Lewis (Research Lab), Kelly Mills & Broadus McGowan (Bagging Dept.), James Briggs (Load out operator) were received 2/5/96. (See attached results) all well below action limits.

➢ John Henningson conducted an IH audit of the site on 2/15 & 16. Noise and dust monitoring (total dust & quartz dust) samples were taken on at least 6 employees. Walk around audit of Wet Mill, Bagging Department and Load out, Warehouse, Monitor, Mogenson Bldg. were conducted, as well as the Mill Yard.

KEARNEY

Health - Workers Comp cases, IH Surveys, audits

➢ John Henningson conducted an IH audit of the site on 2/13 & 14. Noise and dust monitoring (total dust & quartz dust) samples were taken on at least 5 employees. Walk around audit of the Warehouse, chemical storage section, furnace, stoner decks, rail car loading and plant yard

ENOREE

Environment - DHEC, Surveys, Audits, Notices

➢ 2nd half 1995 sampling results of Drinking water sample for Lead & Copper monitoring conducted over the Thanksgiving Weekend were received. All 8 taps registered below action limits allowing us to go to reduced monitoring for 1996. (See attached report form SCDHEC)

➢ Feb. 5 attended a SCDHEC Seminar in Columbia, SC for Source Point Data reporting for the Mill site. This report was originally due Mar. 31., but we are being allowed to submit by July.

➢ Made payment for invoices for NPDES permits for over 18 listed Mine & Mill Sites from SCDHEC on 2/9

➢ Made payment for invoice for Radiological Sources permit for the Mill Industrial gauges to SCDHEC on 2/9

KEARNEY

Environment - DHEC, Surveys, Audits, Notices

➢2nd half 1995 sampling results of Drinking water sample for Lead & Copper monitoring conducted over the Thanksgiving Weekend were received. All 2 taps registered below action limits allowing us to go to reduced monitoring for 1996. (See attached report form SCDHEC)

➢Feb. 5 attended a SCDHEC Seminar in Columbia, SC for Source Point Data reporting for the Mill site. This report was originally due Mar. 31., but we are being allowed to submit by July 1

ENOREE / KEARNEY

Inspections and Other info:

➢ Correspondence received from Company W.C lawyer group on Elner Anderson case. Wendell McAbee closed out with settlement.

➢ Met with Doug Shales of on Industrial Scientific Gas Corp. on the TMX 412 Gas Monitor problem. It was noted that calibration regulator was defective, causing us to use almost a full cylinder of gas. Erratic readings also indicated a battery failure. We now have 2 new calibration gas cylinders and new regulator, and battery pack from ISC. Working with Jim Briggs from Mill Maintenance on calibration classes for selected employees, as well as more central location for storage and need per department.

➢ Received a letter from a local attorney making accusations about road unsafe conditions on # 221 caused by our haul trucks. I have been working with Marcia Seeler and Kevin Grady for the Legal department so they can draft a response. (See attached letter)

➢ Reinitiated an Safety monthly audit program that includes myself, a supervisor and hourly employee taking a 2 hour walk around of various departments. (See attached report). Have been working with effected supervisors to set action dates and completion throughout the month. These area will be revisited at the beginning of the new month for investigation. There will be new audit team for March.

➢ Received the following letter addressed to Jay Burrill from Rogers & Callcott Eng. on the storm water and NPDES issues for the plant and mine sites. I have spoke with Frank Callcott about scheduling time this week to initiate a visit to their office with copies of the said permits for review. This is an ongoing project that will require vast amounts of time.

➢ Worked with Cambridge office in completing and clarifying SARA III - Tier II reporting. Official report due to state, county and local offices by March 1.

➢ Closed one item on Environmental Audit by Jeff Doyle group. Two items left before full closure.

➢ C to C self audit report completed and sent to Lexington office.

➢ Working on revising Emergency Preparedness Plan as well as Plant Site info. Names, numbers and changes in tank locations involved.

- New vehicle inspection sheets have been incorporated in MSHA paperwork requirement scheme to reflect proper inspection and paper trail. Will be submitted for March handouts.

- 31 days since last recordable for entire plant site. More involved statistics and hours by department in next report for March.

Encore 1996

WRG00377

ED_005351_00000368-00493

TO: Joe Rogan 10-May-96

FROM: Bill Clements

SUBJECT: 1996 Budget Headcount

Listed below is a summary of the Hourly People:

		Number
A.	Mill DMC Department	
	(1) R & M	9
	(2) Operators	13
	Total	22
B.	Mine DMC Department	
	(1) R & M	5
	(2) Operators	21
	Total	26
C.	Mill Overhead Department	
	(1) Lab, etc	5
D.	Bagging DMC Department	
	(1) Baggers	2
E.	Kearney DMC Department	
	(1) R & M	2
	(2) Operators	33
	Total	35
F.	Kearney Overhead Department	
	(1) Lab, etc	2
G.	Summary by Departments:	
	(1) Mill DMC	22
	(2) Mine DMC	26 > 53
	(3) Mill O/H	5 -
	(4) Bagging DMC	2
	(5) Kearney DMC	36 > 39 Kearney
	(6) Kearney O/H	1
Grand Total		92

NA Hourly Head Count

06-May-96

Plant	Unit	May95	Jun95	Jul95	Aug95	Sep95	Oct95	Nov95	Dec95	Jan96	Feb96	Mar96	Apr96	Budget96
Cambridge	Cambridge Facili	7	7	7	7	7	0	0	0	0	0	0	6	0
Wty Svc	Wty Svc	6	6	6	6	6	0	0	0	0	0	0	3	0
Clearfield	Cement	1	1	1	1	1	0	0	0	0	0	0	1	0
Ottawa	Cement	4	4	4	4	4	0	0	0	0	0	0	3	0
Acton	Concrete	1	1	1	1	1	0	0	0	0	0	0	0	0
Houston	Concrete	7	7	7	7	7	0	0	0	0	0	0	6	0
Lithonia	Concrete	2	2	2	2	2	0	0	0	0	0	0	3	0
Los Angeles	Concrete	4	4	4	4	4	0	0	0	0	0	0	4	0
North Bergen	Concrete	4	5	5	5	5	0	0	0	0	0	0	4	0
Pompano	Concrete	8	8	8	8	8	0	0	0	0	0	0	7	0
Irondale	Fireprotection	14	18	21	19	19	0	0	0	0	0	0	18	0
Murikirk	Fireprotection	15	6	4	6	4	0	0	0	0	0	0	10	0
Phoenix	Fireprotection	10	10	9	10	10	0	0	0	0	0	0	12	0
Portland	Fireprotection	10	7	7	6	6	0	0	0	0	0	0	0	0
Santa Ana	Fireprotection	30	25	25	22	22	0	0	0	0	0	0	21	0
Trenton	Fireprotection	8	8	8	7	7	0	0	0	0	0	0	0	0
West Chicago	Fireprotection	15	20	18	16	16	0	0	0	0	0	0	0	0
Wilder	Fireprotection	5	5	5	5	3	0	0	0	0	0	0	0	0
Atlanta	Poly	7	7	7	6	6	0	0	0	0	0	0	3	0
Fallsington	Poly	9	9	9	8	8	0	0	0	0	0	0	12	0
New Castle	Poly	9	9	9	9	9	0	0	0	0	0	0	8	0
Zellwood	Poly	7	7	7	7	7	0	0	0	0	0	0	6	0
Enoree	Spec. Verm.	68	68	68	32	32	0	0	0	0	0	0	61	0 53
Kearney	Spec. Verm.	30	29	32	67	31	0	0	0	0	0	0	38	0 39
Chicago	Waterproffing	76	69	70	70	62	0	0	0	0	0	0	66	0
Ajax	Canada	33	34	29	29	29	0	0	0	0	0	0	36	0
Dartmouth	Canada	1	1	1	1	1	0	0	0	0	0	0	1	0
Edmonton	Canada	12	12	12	12	12	0	0	0	0	0	0	12	0
La Salle	Canada	0	0	1	1	1	0	0	0	0	0	0	1	0
Vancouver	Canada	7	6	6	6	5	0	0	0	0	0	0	6	0
Winnipeg	Canada	3	3	4	4	4	0	0	0	0	0	0	4	0
Totals		**413**	**398**	**397**	**388**	**339**	**0**	**0**	**0**	**0**	**0**	**0**	**352**	**0**
Discontinued Opperations		**45**	**43**	**42**	**0**	**0**								

WRG00373821

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NA Salaried Head Count

[illegible]ay-96

Dept Name	Dept Num	May95	Jun95	Jul95	Aug95	Sep95	Oct95	Nov95	Dec95	Jan96	Feb96	Mar96	Apr96	Budget96
Business Sys Development	601964	20	20	20	22	22	0	0	0	0	0	0	14	0
Cash, Ins, Taxes	601913	5	3	2	2	2	0	0	0	0	0	0	0	0
Customer Credit	601912	8	8	7	7	7	0	0	0	0	0	0	6	0
Division Admin & WW HQ	601903	6	6	6	6	6	0	0	0	0	0	0	6	0
Engineering	601907	0	0	0	0	0	0	0	0	0	0	0	8	0
Envir, Health & Safety	601911	6	6	6	6	6	0	0	0	0	0	0	6	0
Fin Reporting/Prdn Acctg	601904	16	16	16	16	17	0	0	0	0	0	0	17	0
Financial Analysis	601906	4	5	5	5	5	0	0	0	0	0	0	3	0
General Accounting	601905	17	12	6	6	5	0	0	0	0	0	0	4	0
Graphic Services	601954	4	4	4	4	4	0	0	0	0	0	0	4	0
Human Resources	601916	7	7	6	6	6	0	0	0	0	0	0	7	0
Library	601915	2	2	2	2	2	0	0	0	0	0	0	2	0
Logistics	601901	16	17	17	17	17	0	0	0	0	0	0	15	0
Maintenance	601091	4	4	4	4	4	0	0	0	0	0	0	3	0
Marketing Communications	601908	11	11	11	11	11	0	0	0	0	0	0	11	0
Mktg Comm Fulfill. Cntr.	601917	3	2	2	2	2	0	0	0	0	0	0	0	0
Office Services	601955	8	8	8	8	8	0	0	0	0	0	0	7	0
Quality Assurance	601909	7	7	7	7	7	0	0	0	0	0	0	6	0
Research & Development-HQ	601293	4	4	4	4	4	0	0	0	0	0	0	4	0
Concrete Research	601283	47	47	48	48	47	0	0	0	0	0	0	49	0
Masonry Products Research	601286	4	4	4	4	1	0	0	0	0	0	0	4	0
Fire Protection Research	601282	19	17	17	16	15	0	0	0	0	0	0	14	0
Analytical Lab - WP	601280	7	9	9	9	9	0	0	0	0	0	0	8	0
Specialty Vermiculite Lab	601285	0	0	0	0	0	0	0	0	0	0	0	0	0
* Cement & Concrete WW Ad	601232	15	15	15	15	15	0	0	0	0	0	0	13	0
Cement WW Admin	601333	0	0	0	0	0	0	0	0	0	0	0	2	0
* Cement Products	601330	7	7	7	7	8	0	0	0	0	0	0	8	0
Cormix Aquisition	685258	2	2	1	1	1	0	0	0	0	0	0	0	0
Cormix Bag Goods	601259	2	2	2	2	2	0	0	0	0	0	0	0	0
Concrete Administration	601231	10	9	8	8	8	0	0	0	0	0	0	6	0
Concrete Marketing	601233	8	8	8	8	8	0	0	0	0	0	0	7	0
Concrete Prod. Tech. Service	601236	7	6	7	7	7	0	0	0	0	0	0	7	0
Admx Dispenser Operations	601034	8	8	8	8	8	0	0	0	0	0	0	7	0

WRG00373822

ED_005351_00000368-00496

Dept Name	Dept Num	May95	Jun95	Jul95	Aug95	Sep95	Oct95	Nov95	Dec95	Jan96	Feb96	Mar96	Apr96	Budget96
Ce[illegible]ispenser	601223	18	18	18	18	17[illegible]	0	0	0	0	0	0	14	[illegible]
Central, Concrete Admin	601258	0	0	0	0	0	0	0	0	0	0	0	1	0
Central, Delivery	601243	13	11	11	11	12	0	0	0	0	0	0	12	0
Central, Delivery	685243	0	0	0	0	0	0	0	0	0	0	0	3	0
Central, ESG	601203	6	6	6	6	7	0	0	0	0	0	0	7	0
Central, Selling	601253	35	37	37	37	34	0	0	0	0	0	0	34	0
Concrete Delivery-Ontario, CN	600212	1	1	1	1	1	0	0	0	0	0	0	0	0
* Northeast, Selling	601251	48	48	47	46	46	0	0	0	0	0	0	45	0
Northeast, Delivery	601241	7	7	7	7	7	0	0	0	0	0	0	10	0
Northeast, Dispenser	601221	14	14	14	14	14	0	0	0	0	0	0	14	0
Northeast, ESG	601201	5	5	5	4	4	0	0	0	0	0	0	4	0
Puerto Rico, Delivery	609244	2	2	2	2	2	0	0	0	0	0	0	0	0
Puerto Rico, Dispenser	609224	3	3	3	2	2	0	0	0	0	0	0	1	0
Puerto Rico, Selling	609254	2	2	2	2	2	0	0	0	0	0	0	2	0
Southeast, Delivery	601242	0	0	0	0	0	0	0	0	0	0	0	0	0
Southeast, Dispenser	601222	13	13	13	13	13	0	0	0	0	0	0	13	0
Southeast, ESG	601202	3	3	3	3	2	0	0	0	0	0	0	2	0
Southeast, Selling	601252	29	29	29	29	28	0	0	0	0	0	0	29	0
Southwest, Delivery	601246	5	5	5	5	5	0	0	0	0	0	0	5	0
Southwest, Dispenser	601226	14	14	14	14	14	0	0	0	0	0	0	15	0
Southwest, ESG	601206	2	2	2	2	2	0	0	0	0	0	0	1	0
Southwest, Selling	601256	28	28	29	29	29	0	0	0	0	0	0	29	0
* Western, Selling	601255	38	39	39	39	39	0	0	0	0	0	0	36	0
Concrete Delivery-Western CN	600217	1	1	1	1	1	0	0	0	0	0	0	1	0
Western, Delivery	601245	4	4	4	4	4	0	0	0	0	0	0	4	0
Western, Dispenser	601225	11	11	11	11	11	0	0	0	0	0	0	12	0
Western, ESG	601205	5	5	5	5	5	0	0	0	0	0	0	5	0
Delivery ,Salt Lake, UT	685351	1	1	1	1	1	0	0	0	0	0	0	1	0
Delivery, Acton	685022	4	3	3	3	3	0	0	0	0	0	0	0	0
Delivery, Atlanta	685014	14	15	15	14	15	0	0	0	0	0	0	14	0
Delivery, Chicago	685017	0	0	0	0	0	0	0	0	0	0	0	0	0
Delivery, Houston	685019	8	8	8	7	7	0	0	0	0	0	0	8	0
Delivery, Los Angeles	685018	4	4	4	4	4	0	0	0	0	0	0	4	0
Delivery, N Bergen	685016	2	2	2	3	3	0	0	0	0	0	0	3	0
Acton Factory Admin	685422	1	1	1	1	0	0	0	0	0	0	0	0	0
Atlanta Fac Admin.	601428	2	2	2	2	2	0	0	0	0	0	0	0	0

Includes Canadian Head Counts !

WRG00373823
ED_005351_00000368-00497

Dept Name	Dept Num	May95	Jun95	Jul95	Aug95	Sep95	Oct95	Nov95	Dec95	Jan96	Feb96	Mar96	Apr96	Budget96
[illegible]te, NC Overhead	685453	1	1	1	1	[illegible]	0	0	0	0	0	0	0	[illegible]
Houston Factory Admin	685029	4	5	5	4	4	0	0	0	0	0	0	4	0
Lithonia, Overhead	685428	0	0	0	0	0	0	0	0	0	0	0	2	0
Los Angeles Factory Admin	685028	3	3	3	3	3	0	0	0	0	0	0	3	0
N Bergen Factory Admin	685025	4	4	4	5	5	0	0	0	0	0	0	3	0
Ottawa, IL Overhead	685413	1	1	1	1	1	0	0	0	0	0	0	1	0
Pompano Factory Admin	685031	2	2	2	2	2	0	0	0	0	0	0	2	0
Salt Lake, UT Overhead	685451	1	1	2	2	2	0	0	0	0	0	0	2	0
Fire Protection WW Admin	601290	3	3	3	3	3	0	0	0	0	0	0	3	0
Fireproofing Marketing	601292	11	10	10	11	10	0	0	0	0	0	0	8	0
* Fire Protect Sls-N.America	685539	6	6	5	5	6	0	0	0	0	0	0	6	0
Fire Protection Admin	601200	0	0	0	0	0	0	0	0	0	0	0	0	0
Fire Protect Sls-Central	685533	8	9	8	7	7	0	0	0	0	0	0	7	0
Fire Protect Sls-Central	685536	5	5	7	7	7	0	0	0	0	0	0	7	0
Fire Protect Sls-Northeast	685534	10	10	10	10	8	0	0	0	0	0	0	8	0
Fire Protect Sls-N. West	685532	6	6	6	6	6	0	0	0	0	0	0	5	0
Fire Protect Sls-S. West	685531	8	8	7	7	7	0	0	0	0	0	0	5	0
Fire Protect Sls-Southeast	685535	6	6	5	5	4	0	0	0	0	0	0	4	0
Fire Protect Sls-Southeast	685538	3	2	2	1	1	0	0	0	0	0	0	1	0
Manufacturing - FP	685480	42	39	40	40	40	0	0	0	0	0	0	6	0
Irondale DMC	685119	0	0	0	0	0	0	0	0	0	0	0	1	0
Murikirk Admin	685456	0	0	0	0	0	0	0	0	0	0	0	3	0
Murikirk DMC	685156	0	0	0	0	0	0	0	0	0	0	0	1	0
Phoenix Admin	685475	0	0	0	0	0	0	0	0	0	0	0	1	0
Santa Ana Admin	685476	0	0	0	0	0	0	0	0	0	0	0	9	0
Santa Ana DMC	685176	0	0	0	0	0	0	0	0	0	0	0	0	0
Wilder Admin	685800	0	0	0	0	0	0	0	0	0	0	0	0	0
Atlanta, Overhead	685417	0	0	0	0	0	0	0	0	0	0	0	1	0
Fallsington Admin	685458	0	0	0	0	0	0	0	0	0	0	0	4	0
Irondale, Overhead	685419	0	0	0	0	0	0	0	0	0	0	0	7	0
New Castle, Overhead	685450	0	0	0	0	0	0	0	0	0	0	0	1	0
Zellwood, Overhead	685425	0	0	0	0	0	0	0	0	0	0	0	2	0
* Masonry Div Selling	601294	5	5	5	4	4	0	0	0	0	0	0	5	0
Masonry Regional Selling	685590	20	20	20	19	17	0	0	0	0	0	0	21	0
Forrer Factory Admin	685498	4	4	4	4	4	0	0	0	0	0	0	4	0
Forrer Manufacturing	685198	4	4	4	4	4	0	0	0	0	0	0	4	0

**** Includes Canadian Head Counts !***

WRG00373824
ED_005351_00000368-00498

353 East Killarney Lake
Moore, S. C. 29369
(864) 587-7184
August 6, 1996

Mr. Stephen R. Noone
Vice President of Financial Services Development
W. R. Grace & Co.- Conn.
55 Hayden Avenue
Lexington, Ma. 02173

Dear Mr. Noone:

Please accept this letter as an application for an Accounting Position at the new North American Financial Services Center to be located in Duncan, South Carolina. Joe Rogan, our General Manager advised me to get in touch with you.

During the past twenty-five years, my experience has been concentrated in the entire accounting and financial areas at the Enoree location. I was responsible for the complete General Ledger. All during that time, we were never late sending in our Trial Balances to Cambridge.

My confidential resume is enclosed for your review.

I would appreciate the opportunity to meet with you . Except on August 13th and 14th, I am available at any time that would be convenient to you. If you have any questions, do not hesitate to contact me at the above listed phone number or at (864) 969-3353 extension 202 during the day from 7:00 A. M. to 5:30 P. M.

Sincerely,

William K. Clements

William K. Clements

Enclosure: Resume

WILLIAM K. CLEMENTS

353 East Killarney Lake
Moore, S. C. 29369
(864) 587-7184 (Home)
(864) 969-3353 ext. 202 (Work)

OBJECTIVE

To continue and make a contribution in an accounting position offering the opportunity to utilize my educational background and work experience with W. R. Grace & Co. and meet its objectives in the organization.

EXPERIENCE
1971 - Present

W. R. GRACE & CO. CONN. (G C P) **ENOREE, S. C.**
Manager of Administration. **1982 -- Present**

Operations consist of a Mining Department that will move 2 Million tons of material a year with Backhoes, Draglines, Dozers and Haul Units with in-house maintenance. The Milling Department produces 100,000 tons of concentrate on a 5 to 7 day work week with 24 hour shifts and the material is shipped to various locations in the United States and Canada.

Maintained complete General Ledger - total $26 Million
Produced weekly payroll for 1000

Aug95	Sep95	Oct95	Nov95	Dec95	Jan96	Feb96	Mar96	Apr96	Budget96
10	2	0	0	0	0	0	0	9	0
2	5	0	0	0	0	0	0	2	2
5	5	0	0	0	0	0	0	5	5
4	3	0	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0	2	2
1	1	0	0	0	0	0	0	1	2
2	2	0	0	0	0	0	0	2	2
2	2	0	0	0	0	0	0	3	2
9	8	0	0	0	0	0	0	9	0
9	9	0	0	0	0	0	0	14	0
6	6	0	0	0	0	0	0	0	0
19	18	0	0	0	0	0	0	16	0
16	16	0	0	0	0	0	0	17	0
23	23	0	0	0	0	0	0	26	0
5	5	0	0	0	0	0	0	3	0
0	0	0	0	0	0	0	0	12	0
3	3	0	0	0	0	0	0	2	0
14	12	0	0	0	0	0	0	9	0
4	4	0	0	0	0	0	0	4	0
3	3	0	0	0	0	0	0	2	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	3	0
4	4	0	0	0	0	0	0	4	0
0	0	0	0	0	0	0	0	3	0
2	2	0	0	0	0	0	0	3	0
2	2	0	0	0	0	0	0	2	0
904	886	0	0	0	0	0	0	872	0
0	0								

Hourly