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Soil, Slag and Geology Roundtable Discussion

Bingham: Maybe we could get started with some questions either from the tours this morning or Mr. Oyler's talks. His worldly experiences made Nine Mile Run look rather small.

Oyler: I would expect only some variation because where you don't have an organic cover, it creates a reflective black box. There is not vegetation, currently, that is so great as to influence the temperature.

Bingham: Chris, in your risk assessment, did you monitor temperature?

Dzombak: Something struck me looking at the aerial photographs. We can see the revegetation is a fair amount ahead of where you started in Palmerton, Mr. Oyler. It seems that we have a pretty good start on the revegetation already.

Oyler: Definitely. I agree with you.

Charney: We're ahead in the revegetation if there's not going to be any more regrading. If the whole site is regrading, all that vegetation may be lost.

Blaustein: I had asked David earlier, because I had not thought about the temperature variation at the site. Bob, I don't know if that is one of the assessments that is being done—this is a very interesting aspect of the problem that I had not considered before. Because of the color of the slag and the lack of water retention, do we have that kind of temperature variation on the site?

Blaustein: So that the color is not in a range that is too extreme? I didn't know how dark 'dark' meant.

Sentz: It looks black to us.

Logelin: In the risk assessment portion, we did not. We monitored health aspects concerning the stream. The temperature variations within the slag were monitored in another report, which I did not bring with me today. I believe it is available in the library. We looked at the gases coming out of the slag as it heats up, but the temperature was mostly a side issue.

Dzombak: Regrading could have a negative impact on the existing vegetation, that's true. In the first workshop on July 2nd, we talked about the regrading. With respect to the greenway, there seemed to be a consensus that there was a desire not to have substantial regrading, especially filling in the valley. I don't know if any of the artists have thoughts on that—the issue whether the slopes should be left alone—preserve the corridor and preserve the vegetation which has started to grow on the slag. Any thoughts along those lines?

Bingham: John, can you compare the slope of the slag slopes to those at Blue Mountain?

Oyler: Blue Mountain has a lot of variety, there are some steeper portions and we were able to establish revegetation.

Schmidt: The Blue Mountain situation is different from what you were saying. If the tree roots can go through a toxic layer several inches thick, it will get to good soil and then they will branch out. Here, the slag is extremely porous. If there is just a shallow level of soil piled on, just enough to get the grass growing initially, the tree roots will not have deep enough soil. This will stunt their growth and you'll have very small trees. You won't get to a climax forest. Whereas, if you mix the soil with big bulldozers on top so you can get deep amendment of the soil, this will enable trees to grow on the site. I think this will be best in the long run.

Oyler: A technique that can be used which I haven't talked about yet is the cinder bank. We haven't really started full-scale work on it yet. However, we have, over the years, done 68 acres of vegetation work on that using the same technique. That's as deep as 300 feet in some areas. The roots would never escape these cinders. The oldest vegetation there has been there since 1981.

Schmidt: So that didn't effect the large trees?

Oyler: The nutrients leech down there and there is enough water retention now.

Schmidt: This appears to be so porous, you'd think that it would work.

Oyler: Our site appears to be the same.

Buck: This is really early soil development. If you have a zone on the surface with adequate nutrient availability, the top roots can be bringing in the nutrients while the bottom roots going into the slag can be bringing in water plus any nutrients down below. There would be a lot of feeding going on on the surface and a lot of drinking going on further down.

Schmidt: I just wondered, with the tremendous depth of the slag, why the water wouldn't go down through.

Buck: Right. The water retention is not great on the site, probably one-third of what soil would retain. But, it is still something. One thing I have noticed while doing test pits on the site is that when the soils are extremely rocky, with an organic mulch, the trees will go over 25 feet to find water between little cracks and porous areas. In very rocky soil, where there is little water retention, the trees will root very deeply. I have done test pits with extremely heavy backhoes that went down 23 to 25 feet deep and still didn't get to the end of the roots. Yet, in very loamy, silty soils that have great water retention, the root system is concentrated in the first couple of feet. They are getting enough from the top soils. Plants are allocating resources between top growth and root growth as they need it. In the case of slag, I think if you have some soil or some other material on top you can feed them to get the seedlings started. They will root as many feet down as they need to intercept water, even though the slag may only hold one-third or one-fourth as much water as soil.

Charney: I would like to bring up something that was mentioned before, that there is a do-nothing approach to the Nine Mile Run slag dump. Then there is housing development and the whole aesthetics issue. Are you talking about planting all these trees for the residents of the new housing development to create park-like amenities or will they be for the people who use the valley to provide some better ecological corridor than is there now?

Bingham: If I could interrupt for just a moment—if we can try to keep the conversation concentrated in the valley, I'd appreciate it.

Charney: Are the trees for the people who are using the valley, so they can look up and it looks pretty—or are you talking about trees for the housing development?

Sentz: It is both.

Charney: I'm asking Tom.

Schmidt: It would be both because it would be a true regeneration of the site. It would make the site more like it was in the beginning, capable of supporting trees where ever they may be planted.

Dzombak: Tom is coming at this project, I think, from the standpoint of trying to recreate as close to the previous natural setting as possible, in terms of forestation.

Schmidt: Yes, exactly, because we have this tremendous introduction of slag, that we'd like to bring the valley back to what was there before.

Charney: What was there before 1950 or 1920 is the same thing as was there now...what's the point?

Schmidt: We are talking about making the city more livable and attractive and I think if you do a treatment of the soil...

Charney: There are people who don't necessarily want the site to be pristine, nice trails, bridges and all that.

Schmidt: I'm assuming there is going to be housing mixed in, too.

Charney: But we're being asked to forget about the housing—we're just talking about the valley now. I don't think we can forget about the housing, but that is what Bob wanted us to do.

Bingham: Yes, if we could, we'd like to steer away from the housing development topics. Are you advocating a do-nothing approach?

Charney: No, I'm advocating a do-less approach. I was just wondering if you were asking about the do-nothing.

Bingham: We have talked about that a lot and it is one of the options outlined on a chart in the background document. Certainly, one scenario is to minimize the grading, have no grading, or what are the options if we don't want to move any slag around or we don't want to move the climax forest but it would be curious...

Charney: Obviously, cleaning up the stream is very important. I mean no one is really questioning that, but concerning the use of the open space.... People's use of public space is very finicky. Five years ago there were joggers, then there were rollerbladers, now its mountain biking, and biking trails. Who knows what it will be ten years from now? So I think to say that, "Yes, we want a place to attract people to the city," we need to know what may attract Tom or what may not attract me or you. It is a very slippery question.

Bingham: Maybe we can talk about not having it all one way or another. A versatile, multi-purpose use site. That is the kind of information we are looking to gain through this process.

Caginalp: I think there is another very viable option that may be better than those mentioned before, that has been described in the *University Times* at the University of Pittsburgh, that there are better and cheaper alternatives. In these discussions, there has been very little discussion that we are

dealing with millions of cubic yards of industrial waste. Do-nothing is an option, maybe not a very good one; another option is assume that nothing harmful is there is a very undesirable option. A very desirable option is to look at ways that this industrial waste can be cleaned up. If you look at the computer industry and how much it cost a few years ago compared to what it costs now, it has come down considerably. Similarly, clean-up costs are coming down dramatically. And now [regarding] the issue of what's out there. I am very disturbed by the information that has been propagated, in part from the STUDIO and the most recent information about the slag on Nine Mile Run, this idea that the slag is [benign] is false. We saw that the recent report found numbers for chromium up to twenty-five hundred. [Technical studies completed in other communities show that chromium in these concentrations are toxic.] For instance, in Woburn, Massachusetts between 1966 and 1986, the childhood leukemia rate was 4-fold higher than the national average. Residents of Woburn may have been exposed to arsenic and chromium. In Hudson County, New Jersey, homes in Lafayette Gardens had three times the level of chromium dust as control homes. In at least two tests, chromium levels in children's urine was found to be correlated with distance from the slag site.

The wording for these examples were excerpted from the October, 1997 Newsletter of the Citizens for the Responsible Development of Nine Mile Run in lieu of the actual dialogue. The taped audio was corrupted by dialogue from the other roundtables.

Buck: That's leaving out a lot of data from Maryland. I'm just saying that is not the upper range for chromium, I'm sorry. You can find numbers in the natural barrens of Pennsylvania which are over a thousand. I guess what I am taking issue with is that you are implying that this is some Chernobyl when it's not. Responsible people have done analyses and put this data into perspective—its not like we are going to be making a diet out of slag.

Caginalp: Are you familiar with the 20-year study in New Jersey?

Buck: What other industries were present in that study? I mean, you make this look like some kind of cover-up.

Bingham: Chris, can you address these issues or are they addressed in your risk assessment?

Logelin: Yes, I think there is risk inherent in many different areas of our society, no doubt about it. Industry has created a tremendous amount of risk. And I think what we really need to do is look at the risks with the development of the property, if we want to look at those risks—we were asked to look at those risks. Yes, there are some high chromium levels there. Is there hexavalent chromium there? We did not find any, which is the most...

Caginalp: Which lab did you send it to, your own?

Logelin: No, we would not send it to our own. We sent it to a DEP approved laboratory, RJ Lee Laboratories and they do a lot of testing throughout the state. Regardless, I admit there is chromium there. Is the chromium in a state that is very harmful? No. Chromium is found in slag...

Caginalp: Do you know about the studies...have you seen them?

Logelin: I don't really care to know...I don't know if that is relevant to the situation we have here today. We are trying to decide what types of risks there are with the development of the site. There may be long-term risk to breathing the air in this building, but I'm not going to stop breathing because there is something in the air here. We are looking at whether or not the risks associated with the development of a property are acceptable. There are always going to be risks. The acceptable risks to you are going to be different than the acceptable risks to me. But we have to have a baseline to base that on.

Caginalp: Right, and the acceptable risks are going to be different to someone who is ignorant of the basic studies and someone who is not.

Dzombak: Are these within state standards?

Logelin: They are below the state standards for residential areas; they are below those standards.

Caginalp: No, they aren't.

Logelin: Yes, they are. Look at the new 1997 April MSC standards and they are there.

Caginalp: The standard is 1,000 for total chromium and you found over 2,500...

Logelin: No, they are not 1,000 for total chromium, they are 1,000 for hexavalent chromium. Yeah, go look at it. I've got it in the report.

Caginalp: There is a report that compares standards in the different states and they sometimes differ by a factor of a thousand. Say one state has a standard that is more restrictive by a factor of a thousand, does that mean that the chemical is safer in one state than the other? No. What do these standards mean? They are effective of the legal powers that industry and citizens' groups can bear.

Logelin: Right, but again you still have to look at direct exposure paths and what are the risks associated with these activities.

Bingham: Excuse me for a second, I think you have been given enough time and I think we have to move on to other subjects we should cover.

Charney: The URA went to the planning commission in March to regrade and the Mayor made an announcement in the paper that the regrading was to start in April. That was without any community input at all.

Blaustein: And the process stopped. Your voice was heard.

Charney: Fine, but you have to pay attention...

Blaustein: And have we paid attention now? The process halted in favor of the community's interest in the project.

Charney: There have been no meetings.

Blaustein: But the process stopped to allow the Squirrel Hill Urban Coalition to form its groups and for us to respond.

Charney: Anyhow, we're talking about the valley and the STUDIO.

Blaustein: In terms of revegetation, certain standards have to be met to allow any level of vegetation on the slopes that are not vegetated, is that right? Maybe Mr. Oyler can talk about this. Are there different remediation standards depending on whether you are just going to grow grasses or trees. Or do you have to start at the same base level? Regardless of what your ultimate plan is for the revegetation? Does your first stage differ depending on what your ultimate goal is?

Oyler: Yes, yes, no and yes. I don't know what kind of a regulatory position you would be in as compared to industry doing something. I think that you folks probably will have, from the city of Pittsburgh, would have a lot of latitude as to what you are going to do. I think that you are in a negotiating position with PA DEP, if they get involved. Depending on the way you revegetate, they might not even need to be. Probably, what you as group will be able to do, is decide what you want to do and how

you want to do it and then start to look at the regulatory difficulties.

Oyler: We are working on a federal superfund site. And the state and local governments don't really get a say. Plus, on these sites, everything that can be done has to be done.

Oyler: Nothing like that is regulated.

Buck: I think you are asking if the ground is prepped and the nutrients would need to be different for a herbaceous cover versus a forest cover. I would say no. I say the developed areas I would direct a lot more resources and a lot more intensity toward, because you are more in a manicured park mode. But say, on the slopes that face the valley, you could accelerate natural succession more by adding some of the missing factors. Mulch, motility. But like the choice of seeds that you use, say if you were establishing temporary cover where start-up community herbaceous cover would be very important. For example, use crown vetch and you choke out everything else. So you wouldn't want to do that. But you do need some sort of cover to hold things together and you use temporary covers that will yield to trees in the future. Like using shade intolerant grasses and select planted trees so the trees can shade out the competition of the grass.

Buck: I didn't qualify that as well as I should have, there are cover types that can produce 100 percent herbaceous cover by the fall and then be killed by the winter. Then either by dormant seeded or seeding next spring you could introduce other species. Having already stabilized the surface.

Blaustein: So how did you get around the DEP regulations that say you can't put sludge on slopes greater than 15 percent.

Blaustein: But there are basic levels of water retention, minerals, pH, those things that have to be found in order too.

Blaustein: Just to allow things to grow, I mean beyond regulations, just in terms of revegetation. I mean, that is really what the question is, I think.

Sentz: You mentioned this morning that if you want to see mature trees ever develop on the site, you would want to avoid covering the whole site with grass, because that makes it difficult for the development.

Sentz: I have heard Tom say that he would like to see the soil worked down to a depth of approximately seven feet. Is that what you said Tom, to really support tree growth?

Schmidt: That would be the deepest, between three and seven.

Sentz: I know that when we were doing the original master plan for the site, a firm out of Philadelphia. Andropogon was involved. I believe they recommended reworking down to three feet. I notice also from my own observations, going backpacking in the natural areas, that occasionally I will see a tree that has been blown over, up-rooted, that has a very shallow root system, no more than 18 inches into the soil and yet it is a very large tree. Is there any firm figure for if you want to support large tree growth what you have to go down to? As I have said, I have heard three feet, but I have seen myself, very large trees with even less than three feet of soil.

Buck: I guess the limitation is how much water the tree can exploit within thickness of the growing medium. So in a flood plain where maybe the water table is at 18 inches, those plants will have lots of water available and, too, they cannot grow under water. In some cases, I have seen magnificent trees growing on top of boulders growing in a tiny litter layer, they tend to be adapted species that can really ration down their water consumption when they have to.

Sentz: So the water storage becomes a very key factor in determining how deep to go.

Buck: And aeration, because if you have lots of water but no air they can't...

Oyler: In something like the slag here you are going to find that it is so porous that moisture is going to decrease and the roots will chase it.

Schmidt: Will the alkalinity kill the roots that penetrate down through the soil?

Oyler: It won't kill them; it is not like a toxicity situation. I think that nutrients would be very difficult, but there are adaptive species.

Buck: If you do soil tests on that slag, and the iron, the manganese, the carbon and the zinc are not very soluble.... But it is probably an underestimation of what is available to plants because in their immediate root zone they are putting out organic acids that will sort of chelate just immediately around the roots. We are talking about a zone of millimeters. And

the other thing is, if they have a litter layer on top they are going to do most of the nutrient cycling up there. And it is just getting nutrient poor water from way down below. I think it would be really useful to show up with a really heavy duty back-hoe and dig into the slag to show what some of these older trees are doing in terms of the rooting nets and it is pretty easy to do and you dig a trench and sometimes you bring out the roots and you get a power washer and you hose off the face of that trench and you can see exactly where the roots are. That's sort of an investigation technique worth doing.

Bingham: Could we possibly move into options for remediating the soil and the idea of demonstration sites to see how things would work, and how the community would feel about, say, the sewage sludge, fly ash combination?

(There is gap due to technical difficulties, there was some discussion of the relation with the sewer lines and the need for future grading.)

Logelin: But you are right Peg, before grading can begin and the utilities can begin, there is going to have to be a stormwater runoff permit that will be issued by DEP for that construction activity to address runoff, oh yes, and a sedimentation control plan as well. Prior to any of that grading and excavation activity DEP is going to have to insure that we won't have additional impacts on the lower valley due to those construction activities. And that is all part of that whole process and that is why I don't believe that grading can happen in the next month or so just like Dan was saying. Those issues have to be solved first.

Sentz: In addition to the erosion and sedimentation control plans, there is also an officially adopted storm water management plan for this watershed which states that the rate of runoff after development can be no more than the rate of runoff before the development. In this case you have a very porous soil, artificial soil, out there, right? So you have a relatively low runoff rate and you are going to have to address stormwater management, looking at detention facilities. One of the things that has to be considered in the design of the wetland is, do we want some of this additional runoff to supplement any wetland that might be constructed, the wetland acting as a sponge to release some more steady flow into the stream over time. So there is a whole range of questions related to stormwater management, both keeping the rate from adversely affecting the

stream and possibly even using the additional runoff generated to help the stream along in terms of the wetland acting as a sponge and releasing the flow to supplement the natural flow during dry weather times.

Charney: Joan asked questions to John Oyler about certain things in the regulations, how did you do this, how did they apply....

Sentz: She was talking about one specific aspect and that was the use of sludge on steep, sloped areas.

Charney: Yeah, I know that. There is a workplan between the URA and EPA involving state guidelines and regulations that apply.

Blaustein: That was certainly not my question how we get around regulations. I was curious about a superfund site. We have no intentions of getting around any regulations. What are going to be our guidelines for how we proceed are the regulations we must meet at both the state and the federal level. That certainly is not the case.

Skolnick: My concern is the use of the sludge. We have had forums on the use of sludge, the Sierra Club, and it is amazing how many people come out of the woodwork and don't want any part of any use of sludge; and this is in agricultural areas. Now we are concerned about the contamination of the stream, and the wetland is going to help, but it is not going to solve any problems. If we use sludge, we are going to exacerbate the problem, not help. So while it may help the growth, we all know that sludge does promote growth where ever it is used. That is a very serious consideration that you can't minimize. But when you are talking about sludge, understand that that raises peoples hackles immediately. Whether it is true or not, that is the reaction you get.

Bingham: That is certainly only one option, maybe we should address other options, including composting.

Oyler: I don't think that you need to decide today or even in the near future what organic amendment you use, but I was trying to show you what has been used (and very successfully) on toxic slag. One possibility, if you can't decide, would be to put in some test plots. Get some yard waste, get some MSW compost, get some mushroom compost, any number of organic materials like that.

Skolnick: I would avoid the word 'sludge'; I would use an euphemism for it. I really mean that. It has been our experience.

Bingham: Like I said, I would change it to 'bio-solids'.

Sentz: Sludge. There are two problems: one, you have to be aware that it can contain contaminants far in excess of what you might find on the site right now, particularly sludge that you get from sewage plants that accept industrial waste. The other concern with sludge is more of a political subjective, whatever you want to call it, is that people just have a mental block against the idea of using anything related to sewage in any proximity to their neighborhood, even if it is a benign sludge.

Ridenour: I would like to bring up the issue of stormwater. What happens now, is it just rushes down. What is going to be done during grading?

(Gap due to technical difficulties)

Skolnick: It is pretty stable. There are a couple of little land slides over near the tunnels, but they are very minor when you consider the entire site.

Prellwitz: Water goes right through the slag.

(Gap due to technical difficulties)

Blaustein: Can we talk about the next step then, what happens when the slag is graded? Does that activate anything? What are the changes that happen and maybe all of you experts can talk about what happens when you grade it, does it change the composition? Do things get activated that haven't been exposed when you hit these hard levels? What happens?

Buck: We reclaimed about 100 acres at the LTV residual waste site at Alliquipa and to get the DEP and everybody comfortable with the idea of revegetating the slag, we made some little test areas. Basically we excavated three or four feet down and rolled it around and laid it out flat and applied our amendments, in this case fly ash and sewage sludge, fertilizer, feed and mulch. When you do break up slag (which is weathered on the outside) and the insides get exposed, the pH goes up for a little while but those surfaces very quickly weather. Carbon dioxide in the atmosphere and moisture will take that calcium hydroxide and make it calcium carbonate and then you are very quickly back to where you have a carbonate rind around the hydroxide oxide.

Goodson: Is that what causes the vapor? What about the dust? Would that be a problem? Would you think?

Buck: I think most of the dust and the particles are already small. The regrading is surely not going to make a lot of fine particles; it will break up big particles.

Goodson: But it shouldn't be suspended in the air for very long anyway, I wouldn't think.

Buck: Right, right.

Dzombak: The dust suspension, it is my understanding, is something that the risk assessment addressed. The URA will release that at some point. The appropriate forum to challenge it is a technical forum and go point by point.

(Gap due to technical difficulties)

Logelin: I think that is exactly right, in any process like this where you have a large development. In any development like this where you have a tremendous amount of stakeholders, residents, developers, commercial development, you have people that occasionally use the site—want to use the site. I think you need to have this type of forum to get those thought processes apart. In order to analyze a report like what we did, it takes many eyes, without a doubt. It does because not all of the assumptions that we used are going to be agreed upon. I don't think all of the parameters we looked at will be agreed upon. At some point in time you can research it to death, and still come up with the same answer you started with. But at what point is too much? I am not sure. I think the step that URA took is quite unique. Number one, the constituents and the concentrations of constituents in that slag pile (if this was any other development site in a brownfield) would not require a site specific risk assessment. They are too low, they are below all of the standards that require a risk assessment. URA has gone beyond what is necessary to develop a site like this to try to satisfy some of those unknowns that we really don't know. I think that bodes very well for URA. To go beyond that, they are going to and have, released this to CMU to look at and they are also releasing it to DEP and the Health Department next week because we had just got the final report in their hands on Friday. So there is going to be a lot more input prior to releasing it to the URA as a final. We released it to GAI and a number of other consultants to get consensus.

Yes, I think you have looked at all of the exposure points. You have looked at the receptors, you have gone through the process correctly. Now there are going to be additional questions that we will have to ask, but that is why these forums are put together. The professor that was here earlier and left is raising issues, I think, that need to be raised. Unfortunately, he takes them out of context and that doesn't help us understand what the real problems and the real issues are.

Bingham: Can we talk about, if there are any suggestions, how to address the risks different from this discussion?

Charney: I think the Coalition sponsored focus group on environmental issues is going to ask that question. We did send a report to the URA and asked them if they can review some of these reports with those of us that are not that knowledgeable about these issues. The letter was sent in April. I think there is a major issue about regrading, does it need to be regraded all at once. At what point can you start digging trenches for sewers, putting in streets—is that a period of months, years?

Buck: I think it should be done as extemporaneously as possible, because as long as they are working the land there you are vulnerable to all kinds of erosion issues and they don't want to put in the erosion controls more than once. So if you regrade, stabilize, and then you go back in start putting in the utilities, streets, and so forth, you are doing work twice. Because you....

Charney: So you don't have to wait for the regraders to hit the streets to put the sewers in?

Buck: Oh, I see, you mean maybe in terms of an expansive slag issue?

Sentz: Or if you are doing fill, if some of the slag is used as fill. Is there a compaction issue?

Buck: Yeah, there is a consolidation. I am not an engineer, I am a soil scientist, but just from hearing my colleagues when they have been doing a major fill project, they are monitoring how well compacted it is, but they still come back every few days to survey the ground to see if there was any consolidation and settling more than what they expected.

Dzombak: An important issue is expansion and heat.

Skolnick: Can I ask a question? Is it possible to get a short report on the remediation you did in Alliquipa? I think that situation is very similar, except that maybe there aren't any slopes. How successful

were you? What did you encounter? What would you do differently if you had it to do over again? What you learned....

Buck: I would have to get permission to do that.

Sentz: Does Century III provide us with any information, or is that a different type of slag out there? That is a very large development site that was regraded extensively. A very large slag site. I know there can be radically different slag, so I am wondering if there are similarities in the slag because if there are similarities in the slag, that might provide us with a lot of useful information.

Bingham: Maybe you could speak to this, John, but from what I understand it is also dependent on the use of the site. If you are putting housing there, there are different regulations then if you are just putting parking lots or big box development. This is the process at the South Side works.

Buck: I have had some involvement with the South Side Works. I think that Century III is a good model in terms of some of the potential problems with dusting and regrading and having to deal with noise and neighbors and nuisance problems. We can see what kinds of dust control measures are working. John Oyler has had some experience with regrading the cinder banks which is an area for fused slag similar to what we have at Nine Mile Run. One of the conditions he required was dust control, and somebody with a hydro-seeder, basically a portable fire hose on hand and real time monitoring dust. John Oyler: What we had to do was we had personal monitors on the operators, everyone was in half waist respirators. We had ambient monitors around the periphery. Lots of monitors. We had a Health and Safety man with a mean grab that could detect dust. This went on for several weeks a couple of times a year for a few years as we did different things. These are little battery operated pumps that pump air across a filter and then you analyze what is on the filter. They are commonly used on hazardous sites, kind of just to see what is going on here, but the highest we ever got was three to four percent of the PEL. That is permissible exposure level, so we weren't even close. We never had to use the hydro-seeder; that sat there for dusting. When we cracked open the face, we found there was sufficient moisture, that the material was not dusty. So I think you have

a similar situation here, probably. Unless you are doing it right in the middle of July in 100 degrees, every day and windy. I wouldn't expect a lot of dusting, there is a lot of moisture in the slag.

Charney: One of the recommendations is to have trails come down. Has the URA considered that in the regrading plans?

Bingham: You are speaking of access trails. I think that is going to come up more in the next phase, more of a planning design phase. When more detail about usage is discussed.

Dzombak: As the greenway develops, as we develop trails along the greenway, it is apparent that my concern is safety.

Sentz: I think with regard to any trails that connect the upper plateau areas with the lower areas, you will not be looking at extensive grading to create those trails. Like virtually any other neighborhood in Pittsburgh you will look for the best route for the trail to follow existing topography—as opposed to having to gouge out something.

Dzombak: Pittsburgh style is to have 800 steps.

Bingham: Is that an option, a step strategy?

Dzombak: Now there is a child safety standard....

(More technical difficulties)

Sentz: One of our designers always had this fantasy of reestablishing another incline in Pittsburgh.

Brown: Does anybody know if any of the slag at the site has any economic value? They mine the slag out of the Century III area all of the time. The slag at Old Browns Hill Road looks like very fresh slag.

Logelin: They did try to re-mine some of that slag not too long ago, maybe ten years ago.

Sentz: I think they were trying to reclaim as many metals as possible when they did that study about ten years ago. They either got what they could or they decided that they were not getting enough to make it economical.

Bingham: I understand there is a supply and demand problem.

Sentz: Additionally, in this region, so much aggregate is available from the rivers and the regular dredging of the rivers that it probably is an economic consideration. There are just too many competing cheaper means of getting that type of aggregate.

Skolnick: Is this the right kind of slag? We had a horrible error with the highway east collapsing as a result of the expansion. The wrong kind of slag was used.

Buck: I know we are running short, but I wonder if it would be useful for the public and for us to have someone from the regulatory agency, like DEP, talk about what the regulatory safety net is, for example, stormwater. Sometimes there are exceptions taken. I think we need to know what sort of regulations are applicable.

Skolnick: Well, DEP is important, but, also, the Allegheny County Health Department because they are the regulatory agent for DEP in Allegheny County.

Blaustein: And for air quality once the grading starts, the Health Department does air.

Buck: We need someone with real stature.

Bingham: Thank you very much for coming.



John Buck, a soil scientist who has worked on a number of revegetation projects speaks to an East European graduate student about revegetation.