DEPARTMENT OF THE NAVY

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RE: PROPOSED PLAN FOR OU-3

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A Public Comment Hearing, held at the McDonald Elementary School, 666 Reeves Lane, Warminster, Pennsylvania, on Thursday, September 8, 1994, commencing at 7:00 p.m.

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BRAC Environmental Coordinator:

THOMAS C. AMES, P.E.

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MR. AMES: Good evening, my name is Tom Ames, I'm the BRAC Environmental Coordinator at the Navy base here just up the street in Warminster. I would like to thank the McDonald School and the Centennial School District for loaning their building tonight and allowing us to use this fine facility. I'd like to mention tonight we're going to focus on a proposed plan in the Kirk Road area of Warminster, and also I think it touches the Ivyland Borough, but tonight is a public meeting to accept comments from the public on a proposed plan along Kirk Road.

On the 20th of September, which is Tuesday night, a week from this coming Tuesday, we will have an evening meeting of the Restoration Advisory Board, and this is a board that involves community leaders, some private citizens, some of our commercial neighbors that we have put together to provide input on the environmental effort that the Navy is doing to clean up the situation in Warminster. So if you've got concerns that may not involve the Kirk Road area, perhaps we can address them after our presentation here tonight, or especially at that meeting on the 20th, and it's going to be held in the cafeteria at the base.

We've got some charts up that -- we've had some up along the hallway that many of you entered. And also another set of charts in the back area, and after I go through our proposed plan I'm going to give everybody an opportunity if they want to go back and look at some of the charts again, and then to reassemble and if there are comments to be given. And again the purpose of our meeting is to take the comments that the public has so we can see if our proposed plan and the alternatives that we are suggesting or the one alternative that we prefer is what comments that the public has, and if we need to make any changes they will be considered. I'm going to use the view graph machine. All of the information is either in the handout or on the charts, so -- but we felt that the charts were a little too small just to talk with up front here, so again what we're talking about is the Kirk Road area.

And if I can negotiate these steps a little bit. Here's Jacksonville Road that runs through the base, Street Road is along here, Kirk Road is the area just north of the base, and hopefully all of you are aware of it, Kirk Road comes down and then takes a jog and heads out towards Bristol Road. The Navy -- we've identified eight different sites that

are of concern, and two of those sites are along Kirk Road. One is this area here along where the road jogs, and it was a landfill area where trenches were dug and various wastes were put in there during the period 1966 to 1970. The other area is at the end of the abandoned runway, and it was a fire fighter training area that was in operation from 1961 to 1988. Now, both of those areas are -- those activities are not currently happening. We've stopped that activity, and what we're trying to do is to address some contamination that apparently has resulted from those activities.

The purpose of tonight's meeting is to explain the various alternatives that have been developed and to accept the comments on the remedial alternatives. We've got, and I wanted to emphasize that we are -- what we're addressing is the contamination associated with the shallow ground water in the Kirk Road area. So again, let me -- if I can rephrase that, the alternatives that we are discussing will address the ground water, the shallow ground water in the Kirk Road area. I want to mention that in addition to myself here tonight we have various personnel from the base, from the Environmental Protection Agency, from the state department -- Pennsylvania State

Department of Environmental Resources, and also Naval Facilities Engineering Command, and some consultants that the Navy has retained to assist in this effort.

We've developed three different alternatives to address the shallow ground water contamination in the Kirk Road area. The first is no action, with long term ground water monitoring. And this is required, the no action alternative is required as part of the Superfund law, and it establishes a base line for comparison of some of the other alternatives. The second alternative involves ground water extraction.

RESIDENT: What does that mean, the first no action?

MR. AMES: All we would do is to continue to monitor the ground water. We would utilize those wells that we've drilled or that we will convert the former residential wells, we would continue to monitor and see where the contamination went. But that's one that is not the preferred alternative, and it's required as part of the Superfund law to be -- a no action alternative is required.

The second alternative involves ground water extraction. We would withdraw -- we would drill some wells, withdraw the water from out of the ground

treat it right in the area of Kirk Road and discharge it right in that same area, so we would be drilling several wells, pumping that water out, treating it, and discharging it. Now, the difference between Alternative Two and Alternative Three, there's a couple of key differences, but in many cases they are similar. Alternative Three is ground water extraction, we would be drilling the same wells for Alternative Two as Alternatives Three. We would be treating the water right in that Kirk Road area or over on the other side of Jacksonville Road in an area that we know is Area A, but it would be on the industrial side of Jacksonville Road, and we would be discharging the water out a pipeline that runs down to Bristol Road and dumps into a tributary, to Little Neshaminy Creek. So we would be not dumping the water right in the Kirk Road area with Alternative C.

So the main purpose of tonight is we would like to get your feelings on two things, two main things: Should the treatment plant be built right in the area, Kirk Road area, and we will -- I'll go over exactly where in approximate location that would be, or should it be built over on the other side of Jacksonville Road. And the second this evening is where should the discharge be done? Should we pull

the water out and treat it and put it right back in. the Kirk Road area, or should we take it and treat it and dump it down past Bristol Road.

RESIDENT: Can you show us on the map exactly where that would be.

MR. AMES: Sure. One of our charts in the back, this just shows the ground water monitoring and then this is Warner Park here with the ball fields and the residential properties along Kirk Road, this is the captain McCracken's house right here, and this just shows some wells that would be put in the area, but again that's not the preferred alternative: This is Alternative Two. Again, we've got the chart in the back has it colored, and it may be a little more visible back there, and we'll take a break in a moment to allow you to do that. Again here is -- this is kind of busy, but this is Kirk Road here, and we would put a series of extraction wells along north of the fire fighter -- the old fire fighter training site, and the treatment plant to be between the end of that abandoned runway and Kirk Road, and the discharge would be pumped through a pipe across Kirk Road and into that intermittent stream that runs along Warner Park, and then out past Jacksonville Road and through Ivyland Borough.

Alternative Three, and again this is smaller and what you we want to show this is Jacksonville Road here, Kirk Road is here. We've got the same extraction wells, and the exact location of the extraction wells has not been determined yet, but we would put a treatment plant either here in Area C, and if it was along -- between the end of the runway and Kirk Road, if that treatment plant was there we would pipe the treated water, maybe we would run it up along the side of the abandoned runway over across Jacksonville Road, and then put it into an existing pipe that runs along the old railroad, New Hope and Ivyland Railroad, down toward Hobensack's and over, and then it discharges all the way on the other side of Bristol Road.

The other option is to put the extraction wells in, and pump the water over to the area on the west side of Jacksonville Road, treat it over here, and dump it out that same pipe and put it down there. So our main purpose tonight is to get your comments. The preferred alternative is this one here, this is Alternative Three. The Navy and E.P.A. have agreed that this is the preferred alternative. But certainly we want the public's input on whether this is the proper one to choose. The reason that this is

the preferred alternative is because we've got an existing pipe out already that already carries some water down to the unnamed tributary there, and it would be less of an impact on the Kirk Road area.

So if we could take a break, if you'd like, and visit the charts to take a look at it, or if that's not your desire we could just take some comments now. If I could ask you to -- if you do have a comment, this is a public meeting which is being recorded, and your questions will be -- or comments will be of more value if we could have your name, and if you'd like where you live so that we could associate, you know, where you live in the community and so on. And so if you do have a comment and we would appreciate you giving your name and telling us what you think.

MR. MACFARLAN: My name is Alan MacFarlan, I live at Bristol and Davisville. My question is, I understand the extraction process, but what has been done to get the pollutants out of the ground that's polluting the water?

MR. AMES: We are still -- one of the problems in this area is that we've got the site over here, the landfill site, and the monitoring wells that we've put there indicate that there's not a

contamination plume, there is an -- not an evidence that this old site is contaminating the ground water. The plume or the evidence of contamination is in this area here, right in the Kirk Road area, north of the fire fighter training area. So we're still -- we do not know -- we don't have a firm grasp on where the source is. But we know the ground water is affected, so we're still studying that problem: Where is this stuff coming from? But we are taking -- we do want to go ahead and address the ground water situation.

MR. STANBALD: Howard Stanbald from Reeves Lane. My question, I have two or three questions. Number one: How many gallons will you pull out of these wells per day, or per hour?

MR. AMES: The estimate right now is about 50 gallons per minute.

MR. STANBALD: And next question is: Why is the water pumped all the way, far away from the location, instead of being injected back into the ground near the site where it's being taken out?

MR. AMES: The thought would be to -- we have to meet strict Pennsylvania guidelines on putting the water back into the ground, and the -- I guess the alternative that we looked at would be to put it into the surface water and not inject it back down into

the ground.

MR. STANBALD: Wouldn't local wells be affected if you are taking 50 gallons a minute out of that area?

MR. AMES: Well, we have recently finished connecting all the wells along Kirk Road to public water, so that extraction has stopped now.

MR. STANBALD: Why was the original pipe line laid so far away along the railroad track?

MR. AMES: It was put in by -- we -- the Navy, it would be -- the Navy operates its own sewage treatment plant, and the Brewster Aircraft, when they built the whole aircraft factory in the '40's, put the plant in, and I'm not really sure the thinking as to why it was taken all the way down. Maybe it was the influence of the people of Ivyland that said, "We don't want it dumped in there, the nearest stream is all the way down there." So a pipe and easements were obtain from the property owners along here, so that the pipe runs all the way down here. But I don't think we have any true knowledge as to why it was done that way. This is Dave Kennedy from the State Department of Environmental Resources.

MR. KENNEDY: The treatment plant that is being built for the first operable unit, which is

ground water contamination in this area, there is a treatment plant being built to handle that. The treatment plant being built for that ground water contamination is oversized, and applied for a permit from the state of Pennsylvania for water discharge through the long pipe up to the Bristol Road area. And the Pennsylvania, my department, Department of Environmental Resources, gave the Navy very strict requirements for the discharge limits. So that anything coming out of that pipe has to meet the discharge limits that were just granted a few months ago.

MS. MORTON: Marie Morton. I'm just curious as to how you can meet the -- make the determination as to where to pump the waste if you are not sure where the source is, if you're dumping it, it's not going into the stream.

MR. AMES: We've got pretty good knowledge of where the contamination is right in the Kirk Road area, so even though we don't know where the source is, we're going to stop the migration any farther away from the Navy base, and we will pump the water out and treat it in a discharge.

MS. MORTON: So you're just basically -- you know the area of contamination, you just don't know

the exact source.

MR. AMES: I think that's the conclusion of our consultants and some of the people that have -- the regulators that have helped us out.

MS. MORTON: Do you know what the contaminants are?

MR. AMES: Right now it's, again, it's those that would be found in degreasers, sometimes you will see the expression "volatile organic compounds," but really they are degreasers. You could buy them, engine cleaner, or something like that. The same type of compounds that are in that.

MR. GRESH: Is it possible -- Steve Gresh -- is it possible that when they extended the runway that they extended it over one of these dumps, or not?

MR. AMES: We've recently found some aerial photographs of the runway extension, and based on some -- the runway was extended in the early 1950's, and based on the aerial photographs it looks like it was farmland, but we are going to be working with some of -- the E.P.A.'s got a section that does aerial photographic interpretation, and we are going to be looking at those, but from the untrained eye of mine it looks like it's just farmland.

MR. SNOKES: Jim Snokes. On Site Four have you ever gone jogging along that path on the base?

MR. AMES: I wish I had more often, but no, I haven't done that.

MR. SNOKES: You say you don't know where the contamination is coming from, but in the damp season there is an area in site Four that has a brownish tint of surface water. Has that been analyzed?

MR. AMES: We've analyzed ground water. I don't know if we've analyzed surface water.

MR. SNOKES: That's a soft mushy area runs right next to the jogging path, has a nice little odor to it when it's raining.

MR. AMES: This is part of this additional investigation we are presently doing, but we're looking at what to do especially with the soil in Site Four.

We haven't come to a conclusion yet, but we're certainly not done looking at the various alternatives involving the soil, this is associated with the ground water.

MS. LAMON: My name is Eleanor Lamon, I live on Otto Lane, Warminster. I would like to know the definition of ground water, shallow ground water, and surface water. What's the difference?

MR. AMES: Ground water is a term, and I hope that people that are more expert would correct me if I'm wrong. Ground water is a general term that's anything under the ground, under the surface.

MS. LAMON: How deep is this considered ground water, until it goes down into the --

MR. AMES: The water that would, for example, Warminster Municipal has some wells that these pull out of, they pull water out of the ground and use it for their system. The Navy has wells that are -- that we use at the base for our potable water system or drinking water for the base. Anything below the surface would be considered ground water. Now shallow ground water is a term that would -- it's a portion of that general term ground water that would include how far down?

MR. KENNEDY: Think of when you're driving through a road that has cut through the different layers you can see of the rock, that's the same thing that's happened underground. Some of these layers are porous and allow water to flow through them very slowly. Some of those layers are impervious and act like barriers. So almost anywhere in the world where you start digging down, you will have different layers of water and dry. We have defined around here

shallow going down to about a hundred feet. In other words, there's a fairly continuous layer of underground water down to -- depending where you are, 110 feet 80 feet, roughly about a hundred feet down. Then there's a moderately impermeable layer, then there's more layers underneath, which would be the medium and deep. But it's hard to give exact numbers, because it depends, you know, the layers are doing this.

MS. LAMON: I was wondering what you were talking about when you say ground water. How far down?

MR. KENNEDY: Around here about the farthest I know would be 400 feet.

MR. AMES: That would not be considered shallow.

MR. KENNEDY: No, that would be very deep. Roughly let's say a hundred feet for shallow.

MR. AMES: The surface water is normally considered a pond, a lake, a river, or a stream. Something that the water is visible on the surface.

MR. MCCALL: My name is Hugh McCall. 198 Duncan Road, Upper Southampton. Maybe I'm asking the wrong question at the wrong meeting, but I'm a little bit confused here. You're digging wells to get

contaminated water out, and retreating the water and you're going to put it back into a stream that's -- and then a few questions earlier a gentleman asked about the earth being a brownish color, whatever, in that one area. What has me a little confused is your hooking the homes all up in the immediate area to municipal water, and what is the big rush for the coming around with the water, treating the water right now, instead of getting in there and finding the source that is contaminating the water, whether it's digging down and getting this source out of the earth, and then worry about trying to clear the water up. I feel as though that the one step is a little bit ahead of the other, where I think clearing the ground up should be first. That's my opinion.

MR. AMES: If I could provide some comment, we know that the ground water is -- has some contaminants in it and the E.P.A.'s goal is to restore the ground water to an acceptable level. So that we know that there's a problem, we --

MR. MCCALL: Excuse, me for the last 30 years we know that, that has been going on, but we haven't known it. But right away we want to clear the water up, and everyone is hooked up municipal right now.

MR. AMES: We hooked up two areas to municipal

water.

MR. MCCALL: Right, but go ahead, I'm sorry. I interrupted you.

MR. AMES: We have a known situation and a cleanup goal established by E.P.A., whereas rather than wait, we've gone ahead and tried to attack the one problem.

MR. KIRSCH: I think part of the reasoning that I understand is also that you take that ground water, you clean it, and you prevent any pluming from that area to other areas. So it's also remedial action taking place immediately to prevent any more flow from wherever the contaminated area is coming from, and that is probably why they are doing that step one. I do concur with you that we should be looking for source. But in the interim you already have a problem of that water maybe moving over or spreading, since you don't know the sources there, you should be clearing out the water that is already there and cleansing it. If I'm not incorrect.

MR. AMES: Thank you.

MR. MCCALL: How -- when you do build these water treatment plants, how long do you expect to man them as far as the Navy or the government would be?

MR. AMES: In the original -- well, not -- the

first record of decision which addressed that Dave Kennedy talked about that addressed the shallow ground water contamination in this area west of Jacksonville Road, and in this area south of the runway, and the area of the Navy housing, we've signed a record of decision that says that we will continue for about a 30-year period.

MR. MCCALL: Thank you.

MS. LAMON: How about the soil that's contaminated?

MR. AMES: The soil that's contaminated --

MR. KENNEDY: That's a hundred feet down?

MS. LAMON: Any of them.

MR. KENNEDY: The water we're talking about pumping and treating is roughly a hundred feet down. There's nothing that can be done to the soil at that level, you just can't dig a hole a hundred feet deep and empty it. Obviously the gentleman who mentioned the source or number of gentlemen who've mentioned the source are correct, it doesn't do any good to pump and treat this forever and ever, until you find the original place of contamination and remediate that, if it can be. Frankly, what we've found has surprised us.

Looking at the map, our original two areas in

this were the fire training area at the end of the runway, and the trenching system along the jog here in Kirk Road. The soils in that area have been dug up and samples sampled extensively, and very little has been found, next to nothing. What is surprising is the contamination in the ground water we're finding is around here, which is neither of the two areas we thought the soils were contaminated. It looks as though the soil contamination is from someplace unexpected. So we've got to find it. But as soon as it's found, then plans can be made to see how big, I guess, see if it's possible to dig it up. But that caught us a little bit by surprise.

MR. MARTINDELL: That's predominantly where all the rain water that runs that side of the base ends up, in my backyard.

MR. AMES: Some of it flows down, obviously the runway is one of the higher points in the whole region, and is probably the reason why Brewster picked this area for their plant. But some of the water obviously on this side runs down this way, and there was -- there is an old drainage, concrete drainage ditch that runs down this way and across, but of course there may be water.

MR. MARTINDELL: It's an exposed -- at the

time 30 years ago it was just a small stream, now it's ten feet deep. It's a creek between mine and my neighbor's house. I mean, the waters, the pollutants that were dumped in that trench, you'd assume would be leaking for 20 years. That's not where it's going to go, it's not going to be on the soil. It's flushed down the toilet, really.

MR. AMES: I still would -- I haven't heard your comments on shall we dump the water and right in the area or dump it all the way down by Bristol Road.

MR. MCCALL: I think this fellow brought up a point. These homes, I don't live in that area, but he said all the ground water is running in his -- around his property.

MR. AMES: The surface water runoff from the rain I think is --

MR. MCCALL: Yes, but in that same area where are you talking about dumping it at that one point there.

MR. AMES: Right across the end of the abandoned runway, this drainage swale I mentioned, or drainage ditch goes across Kirk Road and into a stream along the end of Warner Park, I think it's known as Warner Park, and runs that way.

MR. MCCALL: You're preferred Number Three is

to use the pipe.

MR. AMES: Our preferred is to take it over and, utilizing that existing pipe running down the railroad tracks and -- or along beside the railroad tracks, and out Bristol Road.

RESIDENT: How far along that stream have you tested.

MR. AMES: The stream that's within Kirk Road?

RESIDENT: The stream that runs between Warner Park and --

MR. AMES: Have we tested the surface water in that stream, Neil? This is Neil Teamerson from Halberton, one of the Navy's consultants.

MR. TEAMERSON: The surface water along the streams north of the base, as well as surface water just north of the main building complex, they've been sampled in 1990 and 1992, and the results from those have not indicated that there's any significant levels of the types of substances that we've found in the ground water in the vicinity of Area C, nor have they indicated that any of the concentrations found in the surface or sediments would pose an unacceptable risk to human health. Some of the substances found in that area we found higher concentrations upstream than the vicinities of Sites

Four and Eight, and the Navy and E.P.A. are planning to do additional surface water sampling in that area. There's a plan for that. I don't know when it's going to be done. But to date, to answer your question head on, to date there hasn't been any results from the surface water sediments samples in and around Sites Four and Eight, Area C that would indicate there's a problem with those waters sites.

RESIDENT: As you're pumping this particular site out, is there water flowing again to that site, because you're sort of creating a vacuum situation, is there water now pumping to that site, and eventually could you be clearing through the pumping of the water, the contamination that's in the ground? In other words, I think David --

MR. KENNEDY: The answer is yes. That's why you allow 30 years, and if it hasn't flushed out the contamination in 30 years, you may have to go further. It may be flushed out sooner, but as you're pulling in clean ground water past the area of the, you know, hopefully it will wash it out.

RESIDENT: Pumping the water out, would that lower the water table on the north side of Bristol Road?

MR. AMES: The north side of Bristol Road?

RESIDENT: That's where our residence is.

MR. AMES: Bristol Road is up in this area here. The amount that we're pumping out, and again I'm not a hydrogeologist, and perhaps we could answer that question more with people that have -- that that's their life's work, but I don't think that we would be affecting anywhere near that distance away.

RESIDENT: On account of the flow there, you could cut our wells off altogether, take too much water.

MR. AMES: The pumping of these wells along, here although probably not 50 gallons a minute we -- the ground -- the extraction that the residential wells have that have been occurring by us connecting us to the Warminster municipal system would -- that water is not being withdrawn right now, so there is some balance, so to speak.

RESIDENT: Is that water contaminated there on -- where you've just got done saying they are not going to pump?

MR. AMES: This is Kathy Davis. Kathy works for the U.S.E.P.A. Region Three of Philadelphia.

MS. DAVIS: I'm the hydrogeologist assigned to this from the E.P.A.

RESIDENT: The water table you start pumping

that there, are you going to lower the water table to our residence up in Bristol Road? In other words, in a year or two from now will we be without water?

MS. DAVIS: What happens is the ground water in this area flows towards the north.

RESIDENT: We're north of that area.

MS. DAVIS: And what they are going to do is put extraction wells in right here, and since the grounds water moves this way, it will be stopping the movement of the ground water this way.

RESIDENT: But that's exactly where we live, on the other side of that.

MS. DAVIS: But it will only pull in a little bit, because what happens is that the ground water moves this way, and your pumping on it, it's easy to pump the water that's going in this direction, but it's hard it to pump the water that's already gone past it, so we'll only influence a small area.

RESIDENT: I'm retired from the government, where they put a well in, and three blocks away there was no water. We cut the whole area out.

MS. DAVIS: I guess there's two answers, two reasons why. One is right now the contractors for the Navy have put together a package for a pump test, which means that they take a well that's already

installed, and then they look at wells that are around it where they are going to put in additional wells in a very small area, and they will pump that pump test well and see how the other wells respond, and they can figure out how much of an area they are going to influence. So that information will be used to make sure that the people up on Bristol Road will not be impacted, because one of the requirements for the design that both E.P.A. and the state will require is that those homes are not affected by the remediation.

RESIDENT: We're south of them at the end of the runway. And if you pump water out of there you take the water from us, eventually.

MR. AMES: I think what the gentleman is saying, Bristol Road --

RESIDENT: We're further down. We're about that area right there, Davisville Road.

MR. AMES: Davisville Road is --

MS. DAVIS: Well, the wells are going to be pumped right in this area, and it will only affect a small area right there. What they are going to do is pump the water that's contaminated and prevent it from continuing to move up to affect the wells up there. That's why we want to pump now while we

continue to look for the source, because the ground. water will continue to move, so we want to stop that, contain it, clean it up while they continue to look for the source areas.

MR. CAMIOLO: My name is Vince Camiolo, I live at 140 Bristol Drive in Warminster. I heard a suggestion several meetings a from a fellow from the Neshaminy Watershed, and he suggested that you take that water and you spray it back over that area. I don't know if there's any problems with doing that, and by doing that you're recharging the water table in the area, and also flushing the water back through again and spraying it back over the area, recharging the water table until it cycles through clean.

MR. KENNEDY: Basically working for the state, I don't know of any instances where spray irrigation type of discharge has been approved in this area, and that also goes for someone who suggested reinjection. Our ground water policy in the state is that the ground water shall be absolutely back to background level, no matter how well you treat it after going through the treatment system, you can get down to, you know, as safe levels, well below the drinking water standards, but you can't get back to background you can never remove a hundred percent. 99 point 9,

but never a hundred. And the state requirement is that anything that goes into the ground water has to be at background level. So reinjection, spray irrigation, I know they've been use in the state, but in very, very rare situations.

MR. GRESH: After the pumping systems you referred, it should be very clean water. Why don't you just use that water and direct it to people that currently have wells. Then we don't have to worry about it.

MR. AMES: One of the things that the -- you mean to dump it back in the ground, or to use it as --

MR. GRESH: Use it to make it up to our homes, since it should be super clean, then we wouldn't have to worry about whether it's getting to them.

MR. AMES: The Navy is policy is not is to operate systems that are commercially or locally run, such as Warminster Municipal Authority. I don't think the Navy -- I don't -- we don't want to compete with somebody for that service.

MR. STANBALD: I asked you a question earlier about how much water you pull out, how many wells at 50 gallons a minute?

MR. KENNEDY: That's the total.

MR. STANBALD: All the wells 50 gallons a minute?

MR. AMES: That's -- we're talking about eight wells that the pumps are rated about six gallons a minute, something like that. So it's not every well would be 50 gallons a minute, it would be a total in than area of Kirk Road to be about 50 gallons a minute. That's based now, we haven't done that pump test. If the pump test showed that it would affect a larger area than what we think, then we might have to cut back that withdrawal, and the cleanup period of time period would be -- nobody has got 30 years of experience that says "this amount of contamination takes ten years or 20 years or whatever." It's a matter of 30 years we sort of picked as a significantly long period of time. So there's not a lot of experience that somebody can say, "It takes 30 years for this situation." I still -- let me ask the question once more: The discharge right in the Kirk Road area, the E.P.A. and the Navy have said the alternative that we prefer is the one that dumps the water all the way out at Bristol Road, and I haven't heard a lot of, "Yeah, that's a good idea," or "No, that's not a good idea." Brad?

MR. KIRSCH: Well, let me throw the question

back at you. Why do you prefer Bristol Road?

MR. AMES: Number one, the discharge from the treatment plant that we have that we're running right now, the sewage treatment plant that the Navy is running right now dumps into that intermittent stream. We have a permit from the state that allows us to do that, it is not -- because the Navy is moving most of its activity down to southern Maryland, that flow will stop, and so we would basically be replacing that flow from the sewage plant with this treated water. It's treated water in any case, so we wouldn't be adding a significant amount to that intermittent -- I mean the unnamed tributary to Little Neshaminy Creek.

MR. KIRSCH: So that you would be keeping an ecological balance, whether that would be happening in Bristol, whereas you would be creating a newer flow if you did it closer to the Kirk Road area.

MR. AMES: That's correct.

RESIDENT: Is that flow rate about the same, or how does it compare? How would it differ?

MR. AMES: Frank, what's our flow out of the sewage plant?

MR. FRANK: About 60 thousand gallons a day at this point in time.

MR. AMES: Can somebody do the math. How much is 50 gallons a minute --

MR. KIRSCH: Three thousand gallons an hour.

MR. AMES: Times 24 is 72.

MR. KIRSCH: About 120 thousand.

MR. AMES: It's in the same -- 60 thousand versus 72, it's about the same.

RESIDENT: Is this really going to be our choice?

MR. AMES: There's a comment period that started September first and extends to September 30, we will be taking input from anyone that says, "Boy, hey, why haven't you thought about piping it to Newtown and let them figure it out."

MR. MARTINDELL: Put it back in my yard. Doesn't bother me, that's where it started, might as well be put back there.

MR. DEERNOD: Tom Deernod. If in fact the other sections of this base are closed, would it be the Navy's intention to turn over the sewer treatment plant and water to the municipal -- or the water facility that we now have to either the county reuse committee or the county or Township itself?

MR. AMES: The -- we have connected our sewage treatment plant into Warminster Municipal Authority's

system, but we only purchased 20 thousand gallons of flow per day, and that was rather than purchase the entire flow for the population that's going to be there now, it was decided that 20 thousand gallons a day. So when our flows go down to less than 20 thousand gallons a day on a consistent basis, we would be shutting down that sewage treatment plant and closing. If the reuse required a pretreatment or something of that nature, we would be turning it over, but I think that the thought right now is to get rid of the plant, that it's not desired and Warminster has got a different time of system, there's not a need in the community for another treatment plant.

MR. DEERNOD: My question, the current position of that community if in fact economics development does take place on that site, whatever it might be, is that plant in the condition where it could supplement the current facilities that are owned by the municipalities that are affected by this move, and could it be upgraded to a point where we could use that as an additional source of water?

MR. AMES: Right now the plant is an excellent plant of 1950's and `60's technology, and it does an excellent job of treating and removing -- treating

the sewage that comes into it, but the permits that we received recently from the state have been more stringent, and we have been having trouble meeting those permits. So it could be added to -- you could add what might be called a polishing step or an additional filtration step on that system, but it's something that we felt more economical to tie into the system, the Warminster system at this time.

RESIDENT: Would it be -- the cost be too expensive to go in there, and rather than take the water, rather than redistribute it to a dry creek bed or put it into the flow, to truck it out of there in ten thousand gallon trucks. At the proposed rate you're taking it out, I think you can go there and possibly take it down to the river and dispose of it there. I think it would be probably a boon to Philadelphia to get something that clean. Redistribute it over.

MR. KENNEDY: It's 72 thousand gallons a day

RESIDENT: I thought you saw a hundred.

MR. AMES: Seventy-two thousand a day, it would be.

RESIDENT: That would cost us a lot of other tax money. We may as well drink it for that expense.

MR. OSTRAUSKAS: One thing I should point out,

the current alternative does include potentially the construction of a treatment plant right off of Kirk Road. So that, for example, if nobody in the community expresses an objection to that, that that could very well happen. If right now you don't choose to express anything, an objection to that, still if anybody for any reason doesn't think it's a great idea to build a treatment plant on Kirk Road, then that's something that should be indicated to the Navy through the comment period.

MR. KIRSCH: The question arises, if there's development on the base, then indeed a treatment plant might be necessary to augment what's happening on base. From the standpoint of the sewage treatment plants you're abandoning, I don't know whether the municipal authority has enough to handle an industrialization, perhaps, on the base. Would that treatment plant you're proposing to build be able to handle the sewage also, or would it be just limited to water?

MR. KENNEDY: It's strictly designed to handle ground water.

MR. KIRSCH: Can it be designed for an operational treatment of sewage?

MR. AMES: What we're talking about is a --

the contamination that's in the sewage is a bacteria-based, biological-based, and this is more chemical. So we're talking two different technologies, really. So it's not really possible to combine the two. It's been suggested that we take about a five- minute break. I'm going to go get a drink of water. So if we could take a stand up break.

RESIDENT: The system that you figured, the proposal that you have for the treatment plant, you're going to discharge that into the same line that Warminster dumps theirs into now, the line along the railroad.

MR. AMES: No, Warminster --

RESIDENT: Goes into Neshaminy Creek.

MR. AMES: I'm not aware of where Warminster dumps their -- their sewage treatment plant, which is off of Bristol Road, also discharges, but not at the same location. The Little Neshaminy Creek accepts both.

RESIDENT: It's going to go in the same place.

MR. AMES: Let's take a five-minute break.

(Whereupon a break was held off the record.)

MR. AMES: I've got a couple of points that were made to me during the break. And maybe I can --

when we talk abut a treatment plant for this ground water, this shallow ground water, it's not a treatment plant that you might think when you drive by the airport roads to Philadelphia, there's the Philadelphia Southwest Sewage Treatment Plant, or trying to think of other areas, even the plant in Warminster. This is a plant that involves, we've got a schematic here, some extraction wells, and it's labeled here as a transfer station, that's a fancy word for a pump, and we would put it into a holding tank, add some hydrogen peroxide. My chemistry is poor on me tonight. In the holding tank, put it through a sand filtration system, and also a granulated carbon absorption filter. So it's not a normal treatment system that would handle your sewage flow. This is a treatment system that basically is a filtration system.

Another point that was made to me is the statement that was made that an injection system would not be permitted by the state. We've got some discussion in the back going on that there are areas in Pennsylvania that do have that type of system, although none in this immediate region.

So those points were made to me during our break.

MS. DAVIS: As a follow-up to that, Tom. In

terms of the hydrogeology, putting an injection well in, you want to take the water that you want to inject and put it into the place. You don't want to put it anywhere near where the contaminants are, because when you take the water and inject it in the ground, it pushes the ground water that is there around, and the fractures that are underneath the surface, and it's very difficult to predict when you put that water into that cracked rock, whether it's going to hit the contaminated ground water. So if you are going to reinject the ground water, you want to put it in a clean area away from wherever you're pumping, and then that becomes an issue of excess, and areas where people actually want wells putting water.

MR. GRESH: If you want to put it back into a clean area, why wouldn't you push it to our wells?

MS. DAVIS: You can set up a system where there are extracting pumps taking contaminated ground water out, and you can cut the injection wells in so they push the contaminated water towards those extraction wells, but you have to understand the flow capacity sometimes, so that you know you're pushing the contaminated water towards the pumps that are taking it out. So if you want to push it away and

put the water in, do people want wells that are going to have clean water in their backyard, how to get it there, so how it's accessed, so it's acceptable.

MR. GRESH: What kind of potential problems does it have? What problems does that cause, pushing clean water at wells?

MS. DAVIS: As long as you're in an area where the ground water is clean, that's fine. But you don't want to push contaminated water around -- because you've studied it, you know where the ground water is going. So if you are pushing it around, you don't know where it's going, so that's another reason why injection was not decided on.

RESIDENT: What kind of size of the structure would that be?

MR. AMES: It's estimated the treatment plant we talk about a 50 by 50 foot building that might be two stories high. So two stories is about 20 feet 50 by 50 it would probably be a pre-engineered building with a metal side and a door and maybe a window or two, but it would be basically a squarish rectangular structure that I hope that gives you a feeling.

MR. GRAY: Harry Gray. You used the term 30 years. This is the life cycle of that thing, what

happens, does the problem go away at the end of the 30 years? If it doesn't, what do you do?

MR. AMES: If the problem is not solved after that 30-year period, the Environmental -- I would think the E.P.A. would not let the Navy shut down any treatment system, and if components wear out, we would be required to replace them. So the 30 years is a guess, really. It may be longer, it may be a little shorter, depending on what the condition of the ground water is.

MR. GRAY: Is that going to be a problem with the E.P.A., as the time goes past? What is the life cycle?

MR. AMES: I don't think there is any track record that shows us after 20 years the problem -- or after 15 years the problem is halfway solved or what. It's just --

MR. GRAY: My question is, how did you arrive at this 30 year number?

RESIDENT: 30 years is a default time period, when you don't know how long it's going to take to clean something up. For purposes of feasibility, the default is 30 years, so just so the cost you can compare. It doesn't mean something is going to happen in 30 years or not.

MR. GRAY: If the problem is not done, what happens?

RESIDENT: Then you keep after it.

MR. GRAY: The question is, do the surrounding people pay for it, or does the government continue to pay for it.

MR. AMES: The government would continue to pay for it. Again, we all know how the government gets fund: Your taxes and my taxes. That's the way it is.

RESIDENT: I have a question, this is also part of what we want to do in this Township is to try to get this property where it could revert to the Township control and be utilized for something. This 50 foot building, two story, if it's put over near the industrial complex now, utilizes the pipe going out to the creek, everything else that's over by Kirk Road, at least to Kirk Road, would that became buried with these wells heads, or would it be better where it -- what are the plans we have?

MR. AMES: The wells would have -- you'd have to have the wells exposed, at least at the surface, because if there's a problem with the pump you'd want access to pull that, open it up, and pull the pump and see what happened to it. But you would also to

have a pumping station. You'd have to have a pump there to pump it across the road.

RESIDENT: Pumps stations are not that unattractive.

MR. AMES: You could have a small building there.

RESIDENT: You could have a small space that could potentially be used for development. How is that going to be handled? Is the Navy going to retain ownership of the portion of that property, or the Navy is requesting easements to access that property?

MR. AMES: I don't have an answer for that. Joe Cody, any -- if a pumping station was put in the Kirk Road area, would that be transferred -- the Navy would want access to it in order to maintain it.

MR. CODY: There would have to be easements in order of the Navy to obtain access to that. And we've have to negotiate that with Economics Adjustments Committee. And just the footprint of the ground was going to be turned over accordingly.

RESIDENT: Let me clarify that. Without adjusting the footprint of the property that is going turned over in some way, shape, or form to some entity, is the Navy going to retain any ownership of

the property at that site at all? Other than easement rights.

MR. CODY: I don't know.

MR. AMES: If it could be worked out, if the treatment plant was built in the Kirk Road area, and a pumping station was also built there to move the water across the road so that it would reach the pipe along the railroad, as a minimum, the Navy would want an easement to be able to access that to operate the treatment system and maintain the pumps. If that was consistent with the plan developed by the Reuse Committee, that an easement arrangement would satisfy the redevelopment, then that's, I would think, how it would proceed.

RESIDENT: One more question. The pump house, the whatever you want to call it, the stripping station, and all the ancillary equipment, the wells, are they in fact going to encompass Site Four?

MR. AMES: No, not at the present time. There is -- the evidence of the contaminated ground water in this area is only along the area -- this area in here. You know, it there's some on base and there's some off base, but the Site Four at the present time, the extraction wells would be along the Kirk Road area between the end of the abandoned runway and the

captain's house.

RESIDENT: What happened to all the contamination down on Davisville Road?

MR. AMES: Davisville Road is here, this contamination, this is being addressed by a different pump and treat system.

RESIDENT: But those contaminants are still there?

MR. AMES: Yes, we haven't begun to pump the ground water out of this area and treat it.

RESIDENT: I need a little clarification. If the 50 foot structure is built by the industrial complex, is it planned to be built on property retained by the Navy over there that's currently going to be retained?

MR. AMES: At the present time the people -- the activity that is scheduled to retain -- or to remain at Warminster has indicated that they do not want this northern end of the parking lot and the area of the sewage plant. So that still needs to be --

RESIDENT: The sewage plant is not that far from the round house, and they are keeping the centrifuge. Would it be -- would it be on the property that the Navy is going to retain, which

would eliminate occupying more land that might possibly be put to better use?

MR. AMES: I think that's a question that needs to be addressed by the transition team, and the Reuse Committee. But there is -- an area adjacent to this current sewage treatment plant is a suitable area to put a treatment system. As we move farther towards the centrifuge area we get more congested with utility lines and existing drainage systems.

RESIDENT: Not an insurmountable problem?

MR. AMES: I'm a C.B., anything is possible. I would like to perhaps close tonight by indicating that we would solicit your written comments, if you'd like to provide something to us tonight we've got Mrs. Hayes is over here at a table with some pens and pencils and paper. Or if you'd like to provide us with a comment through the mail, in the back of our plan which I think there's still some copies available there, there's an address here of the Public Affairs Officer that we would welcome your comments. Again, the comment period closes on the 30th of September. Norm, did you have a question?

MR. KELLY: Norm Kelly. Being in Ivyland Borough, we couldn't be much closer to the pollution than anybody else around here, so we are very much

concerned of what's going on here, what can go on here, what might go on here. I happen to be a member of the Technical Review Committee, and now it's been switched to Rob, so I'm, I think, pretty much familiar with what people are trying to do and these people with Warminster having technical people on that committee, with the Navy having technical people on that committee, have spent hours, literally hours, going over, "How about this plan?" "No, that's not quite right, let's do it this way." "How about this way?" "We'll come back next week." And they spent hours trying to come up with these alternatives. And I can't speak for the whole Borough of Ivyland but I can speak for myself, being that close to the problem, and if I had a vote I would certainly recommend that they go ahead with Alternative Three, because these -- this recommendation these recommendations are coming from people that are paid to do this job. Not that those of us who are volunteers on the committees, and these are men and women that have actually spent long hours studying research to come up with this alternative.

And I would recommend, speaking for myself as a member of the Borough of Ivyland for many years, that Alternative Three must make some sense, or these

people would not recommend it. And I would suggest that you go ahead with Alternative Three. In the meantime, as Tom has told us, you have until April 30.

MR. AMES: September 30.

MR. KELLY: I'm giving you a little time. September 30, for those have you who are here tonight, to say, "Wait a minute, I thought of something else." Call one of your neighbors, "This is what we learned last night, do you see anything different?" Because that will all be taken into consideration when you do anything some April 30.

MR. AMES: Thanks, Norm. I would hear -- we are not -- I'll give you a little example, I was doing some work around the house this past weekend, and I ran the from into a situation where it was an extension of and electric line, and I had a problem it was too low, and my wife came out and looked at it and said, "Why don't you turn it up side down and do it that way." And that solved a problem. So another set of eyes can look at a situation. We could be looking at it too closely, and if you say, "Boy, what about this," we're certainly open to your comments or suggestions or whatever. So --

RESIDENT: Two questions. One, we're down at

Davisville Road on Bristol, and you said that's a whole different problem, the pollution down there.

MR. AMES: We haven't seen -- the problem that we're talking about tonight --

RESIDENT: What's being done about that area?

MR. AMES: We have taken some samples out of residential wells in an area that involves Ivyland and I guess that's Warminster Township up in that area. Along Bristol Road, and also again in the Casey Village area, and down around this area too, and we are -- our conclusion, our tentative conclusion is that the -- if there is there's some contamination in a couple of homes up here, it's not associate with the Navy base. And that's based on the fact that there are a large number of homes in between the Kirk Road area and the Bristol Road area that show no contamination.

RESIDENT: But down in Casey Village you have a lots of contamination down there. Are you doing anything to clear that water up?

MR. AMES: We've connected the Casey Village homes to municipal water, or the Navy paid money to the E.P.A. and the Corps of Engineers were involved, but we're looking at the direction of ground water flow. If the ground water flow shows that it's comes

off the base, then, you know, here's the Casey Village area over here, you know, we would say, "Boy, it makes sense to link these sites with the Casey Village." But in fact, there's some indication that the Casey Village flow may be coming from Casey Village down, and the ground water flow may be this way.

So that the Casey Village area may be a separate problem not associated with the base. And we're working with E.P.A. and their site assessment group to decide what the source is in Casey Village.

RESIDENT: We're very close to that area, and we are still on our wells. And my second question is, I believe that the first meeting you said like every six months the wells would be tested. They've only been tested once, I'd like to know when you will test them again.

MR. AMES: You can address that -- again, we wanted to talk about the Kirk Road area, either after the meeting with Lonnie Monaco, or, you know, Lonnie is from Northern division that's been spearheading the whole program. So perhaps I can get you two after the meeting

MR. OSTRAUSKAS: Also I might want to mention, maybe elaborate on what Tom referred to with the

E.P.A. site assessments program. What's happening basically is, assuming some of the information tends to indicate that the problem in Casey Village is not attributable to the Navy, and is attributable to some other source, that in this particular case then the E.P.A. would take over the investigation of that particular area, that particular problem, and in any case what's happening right now is a lot of the folks that have been hooked up to public water in Casey Village are having their wells converted into monitoring wells. So what will happen is to track the migration or the status of the contaminants in the Casey Village area, the ground water there that these wells will be monitored. So that's how, for example, the E.P.A. will determine whether, for example, a well on Bristol Road in your area might potentially be affected, and if the results indicate there's a problem, potential problem with that nature then an action will be taken. Right now there's no indication that would indicate that your well is threatened.

RESIDENT: What is involved in turning these wells over to monitoring wells?

MR. OSTRAUSKAS: Maybe Cathy Davis, the hydrogeologist could address that, but it's basically

a case of taking advantage of an existing residential well that's been constructed, and perhaps doing some minor alterations of that well to allow you to monitor, for example, particular ground water zone. But maybe Cathy can describe it in a little bit more detail.

MS. DAVIS: I'm going to pass the buck here, Jeff, do you want to explain.

MR. ORIENT: What we plant to do as far as well conversion most of these residential wells are open more hole wells that have pumps in them and electric lines, and basically they are open over a certain interval that's different ranging, depending on how much water they found when they drilled. The well -- in lots of cases the wells are run a hundred feet deep. What we would do is pull the pumps out, pull any kind of equipment out, do an evaluation of the well, decide what depth interval we want to focus on, and install a smaller diameter well made out of P.C.V. plastic with the screen and pipe coming up, or in some cases they are stainless steel, but we've usually been working with P.V.C. here, inside that well, fill the annular space between the smaller well casing and the bore hole sides with sand, and then some sort of sealant like cement or bentonite, and

put a cap on it, and that would be our monitoring well.

RESIDENT: I was just wonder, because mine is supposed to have that done to it, and I was wondering what they were going to do with it, and what kind of monitoring.

MR. ORIENT: We don't have a definite time frame set for the conversion right now. If you -- I expect it will happen in the fall.

MR. AMES: It was a relatively recent idea that developed out of the technical sub- committee about using the existing residential wells as a monitoring well instead of drilling new wells. So it's something that we have to work out contractually with the contractors to do that work.

RESIDENT: That was something I thought made sense, because in the original plan they planned on drilling a test well on my property, and then, you know, it didn't make any sense to me to have them come out and drill the hole when they are going to abandon the wells that are there. And then someone must have come up with the idea to use them.

I was just wondering when it was going to be done. I'm on Casey Village.

MS. MORTON: Did he just say -- there's a lot

of people that they are going to use their wells for monitering?

MR. OSTRAUSKAS: I would estimate about ten to a dozen homes that have given permission to either the Navy Or E.P.A. to convert wells.

MS. MORTON: My other question is for Cathy. Have you noticed any changes in the contaminant plumes, now that the municipal water has been hooked up --

(Remainder of question unheard.)

MS. DAVIS: Mr. Morton asked me if we've seen any changes in the migration of the contaminant plumes in Casey Village as a result of the home wells being shut off and having those homes hooked up to municipal water. And the answer to that is we haven't seen the data yet, but we -- I don't -- I'm not sure. I think we had discussions with the Navy about whether or not the Navy and or the Corps of Engineers would go in and take water elevations so we could see which way the ground water was flowing; as they started pulling the pumps out of these wells or the -- at least stopping the use of the wells in Casey Village, and we were going to look at the ground water elevations and see which way the ground water was flowing, whether it was towards the Village

or away. And then as Jeff described we were going to look at wells that were monitoring at specific intervals the home wells that we are monitering in Casey Village, and again look at the water elevations to see if they have changed. Samples will be taken to see if concentrations have changed, if the plume is actually move.

As Darius said, we are interested in looking at the levels of contamination in Casey Village, where the ground water might be taking that contamination, and if anyone in the area might be in the path way of the ground water moving towards their home.

MR. AMES: I certainly appreciate everybody coming tonight. I'm going to close tonight and go home and see if I can see if there's any homework that I need to help my kids with. But again, please take the opportunity either tonight or later on before the 30th to provide us with comments, and if you still have any questions there's a name and a phone number on the back of the plan to call, and I'm sure that we'll try to be as responsive as possible to get the answers back. Thank you very much.

(Whereupon the Meeting was Closed.)

C E R T I F I C A T I O N

I, Samantha Rosania, do hereby certify that the testimony taken by and before me are contained fully and accurately in the notes of testimony, and that the foregoing is a true and correct transcript of the same.

SAMANTHA ROSANIA
NOTARY PUBLIC