

FINAL DECISION AND RESPONSE TO COMMENTS
ON PROPOSED CORRECTIVE MEASURES UNDER RCRA SECTION 3008(h)

HONEYWELL INCORPORATED
FORT WASHINGTON, PENNSYLVANIA

I. INTRODUCTION

This Final Decision and Response to Comments ("Final Decision") is being presented by the U.S. Environmental Protection Agency ("EPA"). The purpose of the Final Decision is to describe the Corrective Measure selected by EPA to address releases of hazardous waste and/or hazardous constituents at the Honeywell Incorporated ("Honeywell") Facility, located in Upper Dublin Township, Montgomery County, Fort Washington, Pennsylvania ("Facility"), present the concerns and issues raised during the public comment period and respond to all significant comments received by the EPA regarding the proposed Corrective Measure. See Figure 1 for the general location of the Facility.

EPA has described and evaluated corrective measures alternatives to mitigate or eliminate releases of hazardous waste and/or hazardous waste constituents at the Facility in an official document called the "Statement of Basis", which was issued on August 26, 1994. The Statement of Basis ("SB") also describes EPA's preferred Corrective Measure to cleanup the contamination which exists at the Facility, the SB is incorporated by reference and is attached to this document as Attachment 1.

The comments addressed by EPA in this document were communicated to EPA during a thirty (30) day public comment period which began on August 31, 1994 as well as a public meeting held on August 15, 1994. All of the comments received were carefully reviewed by EPA during the final selection of the Corrective Measure and have been answered in this Response to Comments. Comments received by EPA during the public comment period did not propose any additional corrective measure alternatives and did not suggest any need to change EPA's preferred corrective measure. Commentors did not propose any additional alternatives that had not been considered in the Corrective Measure Study ("CMS") and no reasons were provided for altering the proposed Corrective Measure. All comments expressed to and/or received by EPA were reviewed and considered by EPA prior to the issuance of this Final Decision. These comments and questions, as well as EPA's responses, are recorded in the following sections.

AR510137

II. THE SELECTED REMEDY

The corrective measure selected for the Facility is identified as GW-2 in the SB. Based on the findings of the RFI, groundwater has been identified as the environmental medium requiring corrective measures. EPA's selected remedy requires the Facility to:

- Install two new recovery wells.
- Conduct a pilot study to determine the most effective treatment method; UV/Oxidation or Air Stripping.
- Treat contaminated groundwater with Air Stripping or UV/Oxidation.
- Continue operation of the Interim Measures pump and treat system until the new groundwater pump and treat system is installed and operational.
- Treat off gases and treated groundwater from Air Stripping with Granulated Activated Carbon (GAC), or treat treated groundwater from UV/Oxidation with GAC.
- Determine if the in-place Interim Measures recovery wells should be used with the new pump and treat system or eliminated.
- Develop and implement institutional controls providing for periodic monitoring and reporting of groundwater data to track compliance with established media cleanup standards.
- Discharge treated groundwater to Pine Creek in accordance with the Clean Water Act NPDES regulations or to the sanitary sewer in accordance with limits required by the Delaware Valley Industrial Sewage Authority.

EPA has established media cleanup standards for the groundwater at the Honeywell Facility, they are the established Maximum Contaminant Levels ("MCLs") for the contaminants of concern. The MCLs are the maximum permissible level of a contaminant in water which is delivered to any user of a public water system as defined in the 40 C.F.R. Part 141, Subpart B.

Table 1, below, is a listing of the media cleanup standards that must be achieved for contaminated groundwater. All standards are expressed in parts per billion ("ppb") concentrations.

Table 1 - Media Cleanup Standards For Contaminants in Groundwater

<u>CONTAMINANTS OF CONCERN</u>	<u>MCL</u>
Benzene	5 ppb
1,1-Dichloroethene	7 ppb
Tetrachloroethene ("PCE")	5 ppb
Trichloroethene ("TCE")	5 ppb
Vinyl Chloride	2 ppb

When establishing media cleanup standards it is also necessary to establish points of compliance, that is, where media cleanup standards will be measured. The three (3) points of compliance are shown on Figure 2 and shall be at the following groundwater wells: MW-1, MW-9D and MW-25.

Pumping and treatment of groundwater at the Facility shall continue until all media cleanup standards have been achieved throughout the entire aquifer.

III. PUBLIC COMMENTS AND EPA RESPONSES

EPA held a thirty (30) day public comment period for the public to raise any issues relating to the remedy that EPA proposed in the SB. The public comment period began on August 31, 1994 and ended September 30, 1994. EPA received oral comments via telephone and written comments via mail. In addition, EPA received comments during a public meeting held on August 15, 1994 at the Upper Dublin Township Municipal Building, Fort Washington, PA.

A. Comments Received During the Public Meeting

On August 15, 1994, EPA conducted a public meeting at the Upper Dublin Township Municipal Building to present EPA's proposed remedy, and to respond to any public concerns. EPA's responses to the substantive comments received at the public meeting are as follows:

Comment 1 - How large is the treatment unit?

EPA's Response: Until the actual design of the treatment unit is developed, the actual size of the system will not be known. EPA estimates that the treatment unit should not be much larger than a garden shed, approximately 10 feet by 12 feet.

Comment 2 - Will the pump and treat system pump primarily from the most contaminated zone?

EPA's Response: Yes.

Comment 3 - In the bedrock investigation during the RFI, it mentions the presence of dense nonaqueous phased liquids ("DNAPLs"). Does this change EPA's decision since many papers coming out today say that pump and treat will not work on DNAPLs or will take long periods of time?

EPA's Response: No. During the RFI, focussed groundwater well installation and monitoring was undertaken to identify the presence of DNAPLs. However, during the investigation no pools or pockets of DNAPLs were found at the Honeywell facility.

Comment 4 - What are DNAPLs?

EPA's Response: DNAPLs are dense non-aqueous phased liquids. DNAPLs are almost pure product which are not dissolved in the water and lie on the bottom of the water table.

Comment 5 - The investigation report clearly mention the possibility of DNAPLs possibly being present.

EPA's Response: No, DNAPLs were not found during the RFI and as stated in EPA's response to Comment 3, the RFI focussed in part on identifying the presence of DNAPLs. In the event DNAPLs are discovered, it might be necessary to reevaluate the chosen alternative or modify the selected pump and treat system.

Comment 6 - Is there vinyl chloride in the lower aquifer?

EPA's Response: During the groundwater investigation portion of the RFI, analyses of samples collected from the deep aquifer did not show the presence of vinyl chloride in the deeper aquifer. During the bedrock investigation field measurements were taken of the samples collected. With the exception of one field measurement, no samples showed the presence of vinyl chloride.

Comment 7 - In the RFI report it mentions that it has not been determined if the vinyl chloride is a breakdown product of the VOCs at the facility and will there be more investigation of the lower aquifer to make sure the vinyl chloride concentrations don't increase over time?

EPA's Response: Yes, EPA has included monitoring for vinyl chloride as a part of the selected remedy for the Honeywell facility. As described above in EPA's response to Comment 6, EPA believes that the field measurement showing the presence of vinyl chloride is an anomaly.

Comment 8 - Will the pump and treat system be able to pump groundwater from the lower aquifer?

EPA's Response: Yes, the pump and treat system will be able to remediate contamination in the lower portion of the aquifer.

Comment 9 - Is the technical impracticability option described in the CMS an option that EPA would consider?

EPA's Response: No, not at this time. The technical impracticability option is an option that is used at sites where it is technically impracticable with existing technology to return a site to the media cleanup standards. It may be possible in the future that after several review processes EPA would determine that the media cleanup standards cannot be achieved. The impracticability option could be considered at that time.

Comment 10 - Is the goal to have this groundwater at drinking water levels?

EPA's Response: Yes, the goal is to have this groundwater at drinking water levels (MCLs).

Comment 11 - Is the estimated time period to clean-up the contaminated groundwater 30 years?

EPA's Response: Yes, EPA estimates that it will take approximately 30 years to achieve the media cleanup standards and return the aquifer to a usable drinking water source.

Comment 12 - Could the pump and treat system be operational for a longer or shorter period of time?

EPA's Response: Yes, the pump and treat system could be operational for longer or shorter than the estimated 30 years, depending on when the media cleanup standards are achieved.

Comment 13 - Is it possible that the levels of groundwater contamination could remain constant throughout the pumping and treating process of the groundwater?

EPA's Response: Yes, it is possible the levels of contamination remain constant.

Comment 14 - Is it possible that the groundwater will never be cleaned up to media cleanup standards?

EPA's Response: Yes, that is a possibility.

Comment 15 - EPA is estimating that it will take approximately 30 years to cleanup the groundwater but it could possibly never be completely cleaned up?

EPA's Response: Yes, it is possible that media cleanup standards will not be achieved.

Comment 16 - What happens if after several years the contamination stays constant or gets worse?

EPA's Response: EPA reviews selected corrective action remedies every five years to determine the effectiveness of selected corrective measures alternative. Based on the findings of EPA's five year review process, selected remedies can be altered or modified.

Comment 17 - How long will it take the groundwater contamination plume to reach Pine Run Creek?

EPA's Response: Implementation of EPA's selected remedy will ensure that contaminated groundwater is not discharged to Pine Run Creek. At the present time, operation of the Interim Measures groundwater pump and treat system is containing the plume and preventing the plume from migrating and discharging into Pine Run Creek.

Comment 18 - How can no action be an alternative that EPA would consider?

EPA's Response: No action is not EPA's preferred alternative for the Honeywell facility. The no action alternative is included in the CMS as a reference point against which other alternatives can be compared.

Comment 19 - Has the amount of contamination that was released into the groundwater ever been determined?

EPA's Response: No, the amount of contamination that was released into the environment has not been determined. The contamination could be the result of small spills over a long period of time, or one large discharge at one point in time.

Comment 20 - What happens if after 30 years the groundwater is not at drinking water levels (MCLs)?

EPA's Response: EPA expects that groundwater remediation activities will continue until media cleanup standards have been achieved. EPA evaluates the efficacy of the selected remedy every 5 years. Based on the findings of the 5 year review process, selected remedies can be altered or modified.

Comment 21 - Is there any new technology in the works today for the treatment of contaminated groundwater?

EPA's Response: EPA Region III has identified several newer, emerging technologies for the treatment of contaminated groundwater. Examples include: (a) The Photolytic Oxidation Process which uses a xenon pulsed-plasma flashlamp that emits short wavelength ultraviolet (UV) light at very high intensity

and will cause VOC contamination to change to a vapor phase which converts the VOCs into a less hazardous compound. (b) The Cross-Flow Pervaporation System which uses a permeable membrane that will partition VOCs from contaminated groundwater and then the VOCs and water can be handled for treatment separately. For more information concerning new remedial technologies please contact Alternative Treatment Technology Information Center (ATTIC) at (301) 670-6294 and/or Vendor Information System for Innovative Treatment Technologies (VISITT) at (800) 245-4505. Technical reports may be obtained by calling the Center for Environmental Research Information (CERI) at (513) 569-7562.

Comment 22 - What is UV/Oxidation?

EPA's Response: UV/Oxidation is a process by which groundwater is treated with hydrogen peroxide and ultra violet light. With this treatment volatile organic contamination is broken down into carbon dioxide and water.

Comment 23 - EPA has only indicated two compliance points that are on the facility property but it appears the contamination plume is migrating farther than the compliance points, how will the plume be monitored past the compliance points?

EPA's Response: The SB was incorrect in indicating two compliance points. There will be three compliance points and they are MW-1, MW-9D and MW-25. In addition to the three compliance points there will be 10 monitoring wells or points, located on and off the Facility, that will be monitored to track the contamination plume.

Comment 24 - How large will the structure be on top of these wells?

EPA's Response: Housing is not required for the monitoring wells. Monitoring wells already in place are either flush with the ground surface or have well casings that extend out from the ground surface approximately several inches.

Comment 25 - Is there any evidence of the groundwater beneath adjacent properties being effected?

EPA's Response: Yes, based on the findings of the RFI the groundwater contamination plume is present under the vacant property to the west, and is adjacent to the Honeywell facility.

Comment 26 - Are there any monitoring wells on the vacant property to the west?

EPA's Response: Yes, three monitoring wells are located on the vacant property to the west.

Comment 27 - Have the concentration levels in the three monitoring wells on the vacant property to the west been detected at low levels?

EPA's Response: Yes, the concentration of volatiles in these three monitoring wells were detected at low levels or not detected during the RFI.

Comment 28 - Will it take as long to clean the contaminated groundwater at the vacant property to the west as at the Honeywell facility?

EPA's Response: No, it should not take as long to achieve media cleanup standards in groundwater beneath the vacant property because the contamination concentration are at low levels.

Comment 29 - What is the difference between the Interim Measures pump and treat system and the alternative that EPA is proposing?

EPA's Response: The primary purpose of the Interim Measures pump and treat system is to contain the contaminated groundwater plume and prevent the contaminant plume's migration. The primary purpose of EPA's proposed alternative is to remediate contaminated groundwater in addition to pulling back and containing the contaminated groundwater plume.

Comment 30 - EPA has said that the current Interim Measures pump and treat system is preventing any impact on human health and the environment, so why is EPA proposing the other alternative?

EPA's Response: EPA's goal is to return this groundwater to its beneficial use as a drinking water source. The Interim Measures pump and treat system cannot achieve this goal.

Comment 31 - So, is the objective to return this aquifer to MCLs for some possible future residential scenario?

EPA's Response: Yes, the cleanup goal is to return the aquifer to its beneficial use as drinking water source.

Comment 32 - Would EPA allow an industrial tenant, on the vacant property to the west or on the Honeywell facility, to drill a production well for non-contact cooling water or process water, provided the water was not used for consumption?

EPA's Response: If EPA were to determine that the installation or operation of a particular groundwater well would interfere with the Honeywell Pump and Treat remedy, or otherwise present a threat to human health and the environment, EPA could utilize its authority under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA) or other federal laws to

enjoin such activities or require that they be performed in a manner which does not create such a negative impact.

Comment 33 - Are there three aquifers at the Honeywell facility?

EPA's Response: No, there is only one aquifer with three water bearing zones: Zone A, which consists of a near surface unconsolidated fill and of fluvial deposits; Zone B, which consists of weathered, highly fractured portion of the bedrock which is below and hydraulically connected to Zone A; and Zone C, which is the deeper fractured portion of the bedrock and is below Zone B and has little or no hydraulic connection because of an aquiclude between Zone B and Zone C.

Comment 34 - Will the proposed alternative clean the lower portion of the aquifer?

EPA's Response: Groundwater pump and treat systems can be designed to remediate groundwater at various depths including the deep aquifer. EPA envisions that the design of the groundwater recovery system for the Honeywell facility will focus on Zone A and Zone B of the aquifer (i.e., the highly contaminated shallower portions of the aquifer) and not Zone C (the deep portion of the aquifer).

Comment 35 - If it becomes necessary, how would you pump from the lower portion of the aquifer?

EPA's Response: Groundwater pump and treat systems can be designed to remediate groundwater at various depths including the deep aquifer. Recovery wells can be constructed to pump from the deep aquifer only, thereby isolating the deep aquifer from the shallower portions of the aquifer.

Comment 36 - Has it been determined if the middle and lower portion of the aquifer have a connection with each other?

EPA's Response: Yes. As stated in EPA's response to Comment 33, there is little or no hydraulic connection because of an aquiclude between Zone B and Zone C.

Comment 37 - Which is more harmful, vinyl chloride or TCE?

EPA's Response: Vinyl chloride is a known human carcinogen while TCE is a possible human carcinogen.

Comment 38 - Can EPA guarantee that the groundwater at the facility will ever be clean?

EPA's Response: EPA cannot guarantee the groundwater will ever be cleaned to MCLs.

Comment 39 - If the groundwater has levels at MCLs, will EPA sign off saying the cleanup is completed?

EPA's Response: As part of any enforcement document pursuant to which Honeywell is required or agrees to perform the corrective measures described in the Final Decision, EPA may include a provision that indicates the cleanup at the Honeywell facility is complete and the requirements of the selected remedy fulfilled if Honeywell can show, via the results of a certain number of consecutive sampling events, that the contaminants of concern are not present in the groundwater at levels exceeding the MCLs.

Comment 40 - When did EPA first learn about the contamination at the Honeywell facility?

EPA's Response: In 1990.

Comment 41 - Who supervised the pre-1990 investigative work which began in 1986?

EPA's Response: The Pennsylvania Department of Environmental Resources ("PADER").

Comment 42 - How did the EPA become involved?

EPA's Response: In 1990 EPA conducted an inspection at the Honeywell facility. Based on the findings of this assessment EPA initiated corrective action activities as authorized by the Resource Conservation and Recovery Act.

Comment 43 - Are there any municipal wells downgradient of the facility?

EPA's Response: Yes, a public supply well is located 0.9 miles southwest of the Honeywell facility. This well is located beyond the boundary of the contamination plume documented during the RFI.

Comment 44 - EPA is involved with TCE-contaminated wells in Hatboro. Are they related to the Honeywell facility?

EPA's Response: No, Hatboro is located several miles from the Honeywell facility, well beyond the contamination plume documented during the RFI.

Comment 45 - When does the public comment period begin?

EPA's Response: The public comment period began August 31, 1994 and ended September 30, 1994.

Comment 46 - How long will it be before the proposed alternative pump and treat system is operational?

EPA's Response: EPA estimates that the pump and treat system will be operational in approximately 1 to 2 years.

Comment 47 - What happens if Honeywell does not perform the required work?

EPA's Response: EPA has various enforcement authorities to compel implementation of the selected remedy. After the Final Decision document is available, EPA will initiate negotiations with Honeywell to execute an agreement to perform the required work to remediate the groundwater. EPA will attempt first to negotiate a consent order. In the absence of a consent agreement, EPA may issue an unilateral order to Honeywell. EPA anticipates that Honeywell and EPA will execute a consent order to implement the selected remedy.

Comment 48 - When will the negotiations begin?

EPA's Response: The negotiation with Honeywell will begin after EPA has selected a final remedy for the facility.

Comment 49 - What exactly is it that EPA needs to negotiate with Honeywell?

EPA's Response: EPA anticipates that Honeywell and EPA will negotiate and execute a consent order pursuant to Section 3008(h) of the Resource Conservation and Recovery Act. The terms and conditions of all Consent Orders are negotiated by EPA and the regulated community. In this case, negotiations will focus on the terms and conditions required by EPA to implement the selected remedy.

Comment 50 - Will EPA notify the current land owners of the Honeywell facility what EPA will be ordering Honeywell to do on the property?

EPA's Response: EPA will ensure that any owners of the property on which the Honeywell facility is located receive a copy of any order issued to Honeywell for implementation of the corrective measures.

B. Comments Received Via Telephone.

EPA received a telephone call from Mr. James Platt of Honeywell.

Shallow part of aquifer
Comment 1 - Honeywell does not agree with the points of compliance MW-1 and MW-25 that EPA has chosen in the SB. Honeywell believes that the points of compliance should be Pine Run Creek and the residential wells along Camp Hill Road. Honeywell projects that a TCE concentration of 6 ppm at MW-1 and MW-25 will cause a resultant concentration of TCE at Pine Run

Creek and the residential wells to be equal to or less than the MCL of 5 ppb. This projection is based on computer modeling completed during the CMS.

EPA Response: When establishing points of compliance, it is also necessary to establish points of compliance at which progress towards obtaining the media clean-up standards will be measured. Using the residential wells along Camp Hill Road and Pine Run Creek as points of compliance will not allow EPA and Honeywell to measure the progress of the selected remedy towards achieving media cleanup standards since no contaminants of concern were detected during the RFI at these locations. EPA does intend to include the residential wells and Pine Run Creek as monitoring points during remediation.

EPA notes that media cleanup standards must be attained throughout the contaminated groundwater, which includes MW-1 and MW-25.

In considering this comment, and reviewing RFI data, EPA is adding MW-9D as a third Point of Compliance. EPA believes that MW-9D should have been identified in the SB as a Point of Compliance. During the RFI, MW-9D was the location of the highest documented concentration of TCE.

-no compliance point in deep aquifer?

C. Written Public Comments Received During The Public Comment Period.

During the public comment period EPA received four letters, one dated August 16, 1994 from Mr. Michael Mandelbaum of the law firm Mandelbaum and Mandelbaum; one dated September 28, 1994 from Mr. Michael Mandelbaum; and two from Mr. James Platt of Honeywell Incorporated both dated September 30, 1994. All substantive questions and comments from these correspondences and EPA's responses are below.

* The following are from the letters dated August 16, 1994 and September 28, 1994 from Mr. Michael Mandelbaum.

Comment 1 - Would EPA allow an industrial tenant to drill a production well for non-contact cooling water or process water, provided that the water was not used for drinking water purposes?

EPA's Response: (See EPA response to Comment 32 above.)

Comment 2 - The Statement of Basis does not have a meaningful assessment of the contamination of the deeper aquifer (zones). At the public meeting on August 15, 1994, the EPA hydrogeologist indicated that all three aquifers were hydraulically connected and that there appeared to be a relationship between the contamination in the deepest aquifer and the shallower ones. Therefore, the Statement of Basis should refer to the

contamination in the deepest aquifer, and its relationship to the contamination to the shallower aquifers. Honeywell should then be obligated to remediate the contamination in the deepest aquifer.

EPA's Response: As set forth on page 1 of the SB, the purpose of the SB is, in part, to summarize information that can be found in greater detail in the documents located in the Administrative Record. The SB is not a substitute for the documents contained in the Administrative Record. A meaningful assessment of the deeper zones can be found in documents contained in the Administrative Record.

Based on the findings of the RFI there is only one aquifer, with three water bearing zones; Zone A, which consists of near surface unconsolidated fill of fluvial deposits; Zone B, which consists of weathered, highly fractured portion of the bedrock which is below and hydraulically connected to Zone A; and Zone C, which is the deeper fractured portion of the bedrock and is below Zone B and has little or no hydraulic connection because of an aquiclude between Zone B and Zone C. (See Comment 33, above.)

EPA believes that the primary focus of the Pump and Treat system design should be on the highly contaminated Zone A and Zone B. The concentration of contaminants in Zone C are orders of magnitude lower than those in Zone A and Zone B. EPA expects that the concentrations of contaminants in Zone C will diminish with natural attenuation while contaminants in Zone A and Zone B are aggressively remediated with pump and treat technology. Monitoring of the aquifer Zone A, Zone B, and Zone C, is included under EPA's selected remedy.

Comment 3 - Figure 3 (Zone A) of the Statement of Basis shows an indication of the highest concentrations of VOCs at the level of 10,000 ppb. There are concentrations in Zone B of VOCs as high as 100,000 ppb. The concentrations of VOCs in Zone B should be referred to in the Statement of Basis.

EPA's Response: The 100,000 ppb was detected in MW-9D and is shown on Table 1 of the SB.

Comment 4 - The pump and treat system will pull ground water horizontally and vertically upward from the bottom of the recovery well, but the pump and treat system will not be able to pull groundwater from the deepest zones.

EPA's Response: The design of the pump and treat system has not been submitted to or approved by EPA at this time. Groundwater pump and treat systems can be designed to remediate groundwater at various depths, including the deep aquifer. EPA believes that the design of the groundwater recovery system for the Honeywell facility should focus primarily on Zone A and Zone

B of the aquifer (i.e. the shallower portions of the aquifer) and not Zone C (the deep aquifer) since, as set forth in Comment 33 above, there is little or no hydraulic connection between Zone C, and the shallower Zone A and Zone B, because of the presence of an aquiclude between Zone B and Zone C. EPA expects that the concentrations of contaminants in Zone C will diminish with natural attenuation, while contaminants in Zone A and Zone B are aggressively remediated with pump and treat technology. Monitoring of aquifer Zone A, Zone B, and Zone C is included under EPA's selected remedy.

Comment 5 - The interim pump and treat system will not contain the contamination that is below the bottom of the recovery well. This should be addressed in the Statement of Basis.

EPA's Response: The primary purpose, of the interim measure pump and treat system is to contain the contaminants in the highly contaminated Zone A and Zone B of the aquifer. Based on the findings of the RFI, no contamination is migrating beyond the facility boundary in the lower portion of the aquifer, Zone C.

Comment 6 - At the public meeting on August 15, 1994, the EPA stated that it might be inappropriate to pump groundwater from the deepest aquifer because this will cause a downward pull of contamination. At the meeting, EPA also stated that if necessary it would screen a deep well and pull the groundwater in that zone. This still may pull the contamination downward because of the vacuum created when pulling water from the deep zone. Based upon the "Results of Risk Assessment Activities and Corrective Measures Study" dated August, 1994, what is EPA's position on how the deeper portion of Zone C will be remediated?

EPA's Response: Groundwater pump and treat systems can be designed to remediate groundwater at various depths, including the deep aquifer. EPA believes that the design of the groundwater recovery system for the Honeywell facility should focus primarily on Zone A and Zone B of the aquifer (i.e. the shallower portions of the aquifer) and not Zone C (the deep aquifer) because, as explained in the response to Comment 33, above, there is little or no hydraulic connection between Zone C and the shallower Zone A and Zone B because of the presence of an aquiclude. EPA expects that the concentrations of contaminants in Zone C will diminish with natural attenuation, while contaminants in Zone A and Zone B are aggressively remediated with pump and

treat technology. Monitoring of the aquifer Zone A, Zone B, and Zone C, is included under EPA's selected remedy.

Comment 7 - The proposal of discharging treated groundwater to Pine Run Creek appears difficult to monitor. If the

contamination reaches Pine Run Creek it will obviously spread faster. What precautions are being taken to prevent this?

EPA's Response: EPA's selected remedy provides for discharge of treated water to either Pine Run Creek or the sanitary sewer. Discharge to Pine Run Creek is regulated under the Clean Water Act NPDES regulations. Under a Clean Water Act NPDES permit, specific discharge limitations are established by PADER. Sampling and analysis activities are also required.

D. Comments Received From Honeywell Inc.

The following comments were submitted by Honeywell by a letter dated September 30, 1994 which refers to the transcript, which is attached as Attachment 2, from the public meeting on August 15, 1994.

Comment 8 - Page 9, line 21 reads - "Trichloroethylene which is a greaser". The line should read - "Trichloroethylene which is a degreaser".

EPA's Response: EPA concurs.

Comment 9 - Page 10, line 8 reads - "EPA calls Intermeasure Pump and Treat". The line should read - "EPA calls Interim Measures Pump and Treat".

EPA's Response: EPA concurs.

Comment 10 - Page 10, line 11 reads - "The location of Intermeasure". The line should read - "The location of the Interim Measures".

EPA's Response: EPA concurs.

Comment 11 - Page 11, line 5-16 - Discusses constituents of concern at the Honeywell facility.

Honeywell believes that since benzene has only been detected in one monitoring well (MW-17), which is located in a parking lot and benzene was not a compound used by Honeywell and given the well location, the absence of benzene from any other monitoring wells that it is likely this isolated detection came from the use of automobiles in the parking lot.

Honeywell believes that since tetrachloroethylene (PCE) was not used by Honeywell, though PCE has been detected during more than one sampling event at monitoring well MW-3D (a background well) at levels as high as 14 ppb, it is generally accepted knowledge that low levels of PCE and TCE have been seen throughout Montgomery County and therefore should not be considered a site related compound.

EPA's Response: Since benzene is a known human carcinogen and PCE is a possible human carcinogen and both were detected at the Honeywell facility above MCLs, EPA has included benzene and PCE as a contaminant of concern. As part of any enforcement document pursuant to which Honeywell is required or agrees to perform the corrective measures described in the Final Decision, EPA may include a provision which provides for modification of the Final Decision to delete benzene and/or PCE if Honeywell can show, via the results of a certain number of consecutive sampling events, that benzene and/or PCE is not present in the groundwater at levels exceeding the MCLs for such constituents.

Comment 12 - Page 12, lines 6-9 reads - "Honeywell has proposed two alternatives to remediate the groundwater. One is what EPA calls GW1, which is basically a no action alternative". Honeywell comment on above: Section 264.522(b) of EPA's "Corrective Action for Solid Waste Management Units as Hazardous Waste Management Facilities; Proposed Rules" (40 CFR Part 264, 265, 270 and 271, July 27, 1990) includes the following statement: "The Regional Administrator may require the permittee to evaluate as part of the corrective measure study one or more specific potential remedies". EPA requested Honeywell to evaluate the No Action alternative. The stated (by EPA) purpose for requesting evaluation of the No Action alternative was to provide a baseline for comparison of the technical, environmental, human health, institutional and cost considerations of other evaluated alternatives. Section 2-4 of EPA's "Guidance on Feasibility Studies under CERCLA" (EPA 540/G-85/003, June 1985) states that "at least one alternative for each of the following must, at a minimum be evaluated ... " including "a No Action alternative".

EPA's Response: EPA concurs.

Comment 13 - Page 12, line 11 reads - "Honeywell would shut down the Intermeasure". The line should read - "Honeywell would shut down the Interim Measures".

EPA's Response: EPA concurs.

Comment 14 - Page 14, line 6 reads - "it releases the DOCs or the contamination to". The line should read - "it releases the VOCs or the contamination to".

EPA's Response: EPA concurs.

Comment 15 - Page 14, line 10 reads - "actually suck up the DOC or the". The line should read - "actually suck up the VOC or the".

EPA's Response: EPA concurs.

Comment 16 - Page 14, line 16 reads - "get any residual DOCs which is left in the". The line should read - "get any residual VOCs which is left in the".

EPA's Response: EPA concurs.

Comment 17 - Page 13, line 6 reads - "Also the Intermeasure Pump and Treat". The line should read - "Also the Interim Measure Pump and Treat".

EPA's Response: EPA concurs.

Comment 18 - Page 13, line 11 reads - "Intermeasure Pump and Treat System, can be". The line should read - "Interim Measure Pump and Treat System, can be".

EPA's Response: EPA concurs.

Comment 19 - Page 16, lines 8-15 discuss homeowner wells along Camp Hill Road. Honeywell comment on above; An additional fact to support EPA's conclusion that it would be unlikely that private wells along Camp Hill Road would be impacted, is the location of a diabase dike, that runs essentially parallel to Camp Hill Road, on the south side, and is likely to act as a natural barrier.

EPA's Response: EPA concurs.

Comment 20 - Page 17, line 4 reads - "the USTs or the underground sewerage tanks". The line should read - "the USTs or the underground storage tanks".

EPA's Response: EPA concurs.

Comment 21 - Page 24, lines 19-21 reads - "A SPEAKER FROM THE AUDIENCE: Also there's vinyl chloride in the lower aquifer? MR. BOYD: Yes". Honeywell comment on above: To date, no vinyl chloride has been detected in any monitoring well, screened below 20 feet. The only positive result for vinyl chloride was at Boring-25, at the 181'-191' interval, where an estimated concentration of 3.1 ppb was reported. MW-25 is presently being resampled to confirm either the presence or absence of vinyl chloride.

EPA's Response: Vinyl chloride was detected at boring 25, though an estimated value, it was above the MCL of 2 ppb. Until vinyl chloride is confirmed to be present or absent, EPA is using the available information which shows an estimated value of vinyl chloride at 3.1 ppb.

Comment 22 - Page 25, line 4 reads - "breakdown product of the DOCs at the site". The line should read - "breakdown product of the VOCs at the site".

EPA's Response: EPA concurs.

Comment 23 - Page 25, lines 11-14 Discusses depths of recovery wells. Honeywell comment on above; RW-3 is planned for 25'-35' interval and RW-4 for 80'-100' interval.

EPA's Response: EPA notes the above information.

Comment 24 - Page 25, line 19 reads - "MR. BOYD: The Intermeasure Pump and". The line should read - "MR. BOYD: The Interim Measure Pump and".

EPA's Response: EPA concurs.

Comment 25 - Page 26, line 15 reads - "of 30 years as an average DOC cleanup". The line should read - "of 30 years as an average VOC cleanup".

EPA's Response: EPA concurs.

Comment 26 - Page 30, line 4 reads - "an intern measure, it will be only a matter". The line should read - "an interim measure, it will be only a matter of time".

EPA's Response: EPA concurs.

Comment 27 - Page 30, lines 5-6 reads - "of giving the velocity of about three to five feet per day in the Stockton and/or the". Honeywell comment on above: On a microscopic level, the groundwater flow rate in Zone A between RW-2 and RW-1 is approximately 6.08 feet per year (*i.e.*, a volume of water at RW-2 will flow toward RW-1 at a rate 6.08 feet per year). This is based on values for hydraulic conductivity and hydraulic gradient of 2.41×10 ft/sec and .008, respectively, as listed on page 29 of the draft RFI Report. Please note that the average groundwater flow velocity of 17.37 feet per year (stated in the report) is the estimated velocity of a particle of water through the pore spaces of the aquifer. The difference between the two values is the porosity of 35%.

EPA's Response: EPA misstated the groundwater velocity during the public meeting and concurs with above.

Comment 28 - Page 30, lines 20-21 and Page 31 lines 1-2 - There is a statement by EPA that it anticipates a rapid discharge of TCE and byproducts to Pine Run Creek "if nothing were done". Honeywell comment on above: The draft report titled "Results of Risk Assessment and Corrective Measures Study" noted an estimated

retardation factor for TCE of 1.45. Based on this retardation factor and a groundwater flow rate of approximately 6.08 feet per year, the rate of transport of dissolved TCE in Zone A is estimated at approximately 4.19 feet per year. The discharge of TCE to Pine Run Creek in the absence of remedial measures was simulated by the Risk Assessment. A computer model of groundwater flow and TCE transport estimated that the maximum future concentration of TCE in groundwater near the stream would be approximately 3,000 micrograms per liter (ug/l). Based on this maximum concentration, the relatively slow groundwater flow rate and projected stream flow rates, the study also indicated that discharge of this groundwater to Pine Run Creek would not cause surface water quality to exceed the MCL for TCE of 5 ug/l. Based on the above, the potential for discharge of TCE to Pine Run Creek should not be considered fairly rapid. In fact, based on available data, it appears improbable that the estimated future discharge of TCE to Pine Run Creek would cause exceedance of drinking water standards for TCE in surface water.

EPA's Response: EPA concurs that the discharge of TCE to Pine Run Creek would not be fairly rapid if nothing were done. EPA concurs with the context of the report titled "Results of Risk Assessment and Corrective Measure Study" and dated August 4, 1994. EPA maintains the position that if the No Action alternative was selected, Pine Run Creek would ultimately be the discharge point for contaminated groundwater.

Comment 29 - Pages 33-34 include another discussion of the No Action Alternative, including an inference that this alternative was suggested by Honeywell. Honeywell comment on above: Honeywell refers back to Comment 12 explaining why the No Action Alternative was evaluated. Also the draft report entitled "Results of Risk Assessment Activities and Corrective Measures Study, August 1994," states: (A) On page 39, 7.1 Alternative 1 - No Action Long-Term Effectiveness; "This alternative would not be effective in meeting long-term site objectives.... Therefore, the No Action Alternative will not comply with CMOs (Corrective Measures Objectives)". (B) On page 43, 8.1 Recommended Corrective Measure Alternatives; "Based on detection of TCE in groundwater from RW-2 at concentrations up to 26,000 ug/l, the results of Risk Assessment activities indicate that there is a potential for exceedance of CMOs under the No Action CMA. Therefore, the No Action CMA is not recommended".

EPA's Response: EPA concurs.

Comment 30 - Page 41, lines 14, 15 & 17 Refer to MW80, MWAD and MWAD respectively. The lines should read - "MW8D" for each reference.

EPA's Response: EPA concurs.

Comment 31 - Page 41, line 19 reads - EPA refers to "very low levels" in MW8D. Honeywell comment on above: No VOCs have been detected in MW8D.

EPA's Response: EPA concurs. No contamination was detected in MW8D. Samples from MW20, a shallow monitoring well next to MW8D, showed very low levels of VOCs. MW8D was installed to ensure that the contaminated groundwater plume was not migrating underneath Pine Run Creek.

Comment 32 - Page 47, lines 2-5 reads - "MR. BOYD: The current pump and treat system is just containing the plume. What it's doing is its keeping from spreading any further this way". Honeywell comment on above: While prevention of further migration is one of the objectives in the EPA-approved Interim Measures Work Plan, the current system has also been remediating groundwater since it became operational in October, 1993.

EPA's Response: EPA concurs. Although the primary objective of the Interim Measures System is to contain the plume, in this process, remediation of groundwater is also taking place.

Comment 33 - Page 50, line 13 reads - "Stockton, Brunswick and the Logton (ph.)". Honeywell comment to above: The Stockton Formation is the site formation. The Brunswick and Lockatong are not site related formations.

EPA's Response: EPA concurs. EPA was mistaken in the public meeting when it said there were three geological formations within the aquifer and said they are the Stockton, Brunswick and the Lockatong. The only geological formation is the Stockton formation.

Comment 34 - Page 52, line 7 reads - "layers of Stockton and Brunswick, you are". Honeywell comment to above: Brunswick is not a site related formation.

EPA's Response: EPA concurs. EPA was mistaken in the public meeting when it said there were three geological formations within the aquifer and said they are the Stockton, Brunswick and the Lockatong. The only geological formation is the Stockton formation.

Comment 35 - Page 53, line 13 reads - "the upper two layers, Stockton and Brunswick". Honeywell comment on above: Brunswick is not a site related formation.

EPA's Response: EPA concurs. EPA was mistaken in the public meeting when it said there were three geological formations within the aquifer and said they are the Stockton, Brunswick and the Lockatong. The only geological formation is the Stockton formation.

Comment 36 - Page 55, line 3 reads - "the communication between the Brunswick". Honeywell comment on above: Brunswick is not a site related formation.

EPA's Response: EPA concurs. EPA was mistaken in the public meeting when it said there were three geological formations within the aquifer and said they are the Stockton, Brunswick and the Lockatong. The only geological formation is the Stockton formation.

Comment 37 - Page 55, line 13 reads - "MR. BUNTIN: The TCA and associated". The line should read - "MR. BUNTIN: The TCE and associated".

EPA's Response: EPA concurs.

Comment 38 - Page 64, line 6 reads - "to implement intermeasure, if possible". The line should read - "to implement interim measures, if possible".

EPA's Response: EPA concurs.

The following comments were submitted by Honeywell by a letter dated September 30, 1994 which refers to the SB.

Comment 39 - Section IV, Previous Investigations, page 4 - The statement reads: "Honeywell concluded that the source of VOCs was most likely the UST 8 Area and the former solvent degreaser pit because both formerly contained TCE". Honeywell comment on above: The former solvent degreaser pit is not a separate source of TCE. To support this conclusion, the following are offered: (A) Page 4 of the draft RFI report dated December 15, 1993, in addressing soils sampled, including those sampled in the area of the former solvent degreaser pit, states that "[t]he results of soil sampling did not warrant further action". (B) The report entitled Results of Soil Sampling and Analysis, dated September 9, 1992 presented the results of soil sampling adjacent to the Solvent Degreaser Pit. On page 6 of the report stated it is that comparison of the results of sampling with applicable standards "[r]evealed no areas of environmental concern with respect to soils at the property". (C) Monitoring well MW-12 is located near the Solvent Degreaser Pit. Page 40 of the draft RFI report states that "[d]issolved VOCs were detected in groundwater from MW-12 during the July 1993 sampling round at a concentration of 6,300 ug/l. Review of plant operations and the results of soil sampling (EEC, 1992c) near MW-12 have not identified a separate source for the VOC concentrations at this location. Based on: 1) the VOC concentrations detected a B-22/135 at an interval of 54 to 70 feet bgs (B-22/54-70); 2) the observed hydraulic connection between B-22/54-70 and MW-12; 3) Comparison of the sample results from B-22/54-70 and MW-12 with results from B-23/80-100 and MW-9D and 4) the discussion in Section 6.1.2 of

groundwater flow in Zone B and C in an area with vertical flow potential, MW-12 is not likely to be in the immediate vicinity of a source of separate-phase TCE".

EPA's Response: EPA included this statement concerning the likelihood of the former solvent degreaser pit as a source of VOCs based on documents and information provided to EPA by Honeywell. In the "Purpose of RFI/CMS - Site Specific Information" section of the revised RCRA Facility Investigation Work Plan Fact Sheet dated June 12, 1992, it states that "Honeywell recently identified an additional potential source of contamination: a decommissioned solvent degreaser pit located inside the building". The RFI Work Plan dated December 1993, Section 1.6, "Historical Investigations," identifies the former degreaser pit as an area where concentrations of VOCs, primarily TCE, were discovered. The Results of the RCRA Facility Investigation dated December 15, 1993, Section 1.3, Previous Investigations, identifies the former degreaser pit as an area where concentrations of VOCs, primarily TCE, were discovered. The SB, Section IV, "Previous Investigations," page 4 also states "[d]uring these investigations no significant soil contamination was found". The SB, Section V, "Summary of the RCRA Facility Investigation," states "[a]s a result, groundwater has been identified as the only media requiring corrective measures". Given this comment, EPA believes this sentence should read: "The potential sources of VOCs are possibly the UST 8 Area and the former solvent degreaser pit since both formerly contained TCE".

Comment 40 - Page 6, Section VIII, "Summary of Facility Risks," and Page 9, Section X, "Evaluation of Proposed Remedy and Alternatives," Part B Attainment of Media Clean-up Standards, each list five Contaminants of Concern for the site. Honeywell feels that Benzene and Tetrachloroethane should not be included on the list of Contaminants of Concern for the following reasons: (A) Benzene has only been detected at MW-17 and has not been detected at any other monitoring well including MW-16 which is down gradient from MW-17. The detected concentration of benzene at MW-17 during sampling in September 1992 and July 1993 was 7 ug/l, only 2 ug/l over the MCL for benzene which is 5 ug/l. The source of benzene is unknown; it was detected in the groundwater from a monitoring well located within a parking lot. Since benzene is a common constituent of gasoline, incidental spilling of gasoline from automobiles in the parking lot is a possible source of the detected benzene. No available data which indicates that Honeywell is responsible for the presence of benzene in the groundwater from MW-17. Because the benzene in groundwater is located below the middle of a parking lot at a concentration which is only 2 ug/l above the MCL and which presents no apparent risk to human health or the environment, it should not be considered a Constituent of Concern. (B) Tetrachloroethane (PCE) has been detected sporadically at the site and was only detected above the MCL of 5 ug/l at MW-2D and

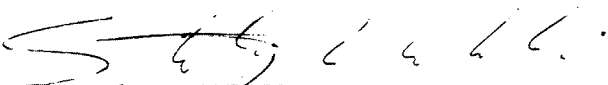
MW-3D. PCE was detected at MW-2D above the MCL of 5 ug/l during sampling in February 1990 but has not been detected in subsequent groundwater sampling events. Site related compounds, such as TCE, which are present in greater concentrations than PCE, were not detected in groundwater from MW-2D. This data supports the view that the presence of PCE is not related to the presence of other chlorinated hydrocarbons at the site. PCE was detected at MW-3D in the groundwater during sampling in February 1990 and October 1990 but has not been detected in subsequent groundwater sampling events. MW-3D is at an upgradient (background) location on the site. Honeywell indicated that PCE has not been used at the facility. Since there is no data that indicates that the presence of PCE in the groundwater at the site is attributable to Honeywell and based on the absence of PCE at concentrations above the MCL during sampling in 1992 and 1993, there is no apparent risk to human health or the environment and PCE should not be considered a Constituent of Concern.

EPA's Response: Since benzene is a known human carcinogen and PCE is a possible human carcinogen and both were detected at the Honeywell facility above MCLs, EPA has included benzene and PCE as a contaminant of concern. As part of any enforcement document pursuant to which Honeywell is required or agrees to perform the corrective measures described in the Final Decision, EPA may include a provision which provides for modification of the Final Decision to delete benzene and/or PCE if Honeywell can show, via the results of a certain number of consecutive sampling events, that benzene and/or PCE is not present in the groundwater at levels exceeding the MCLs for such constituents.

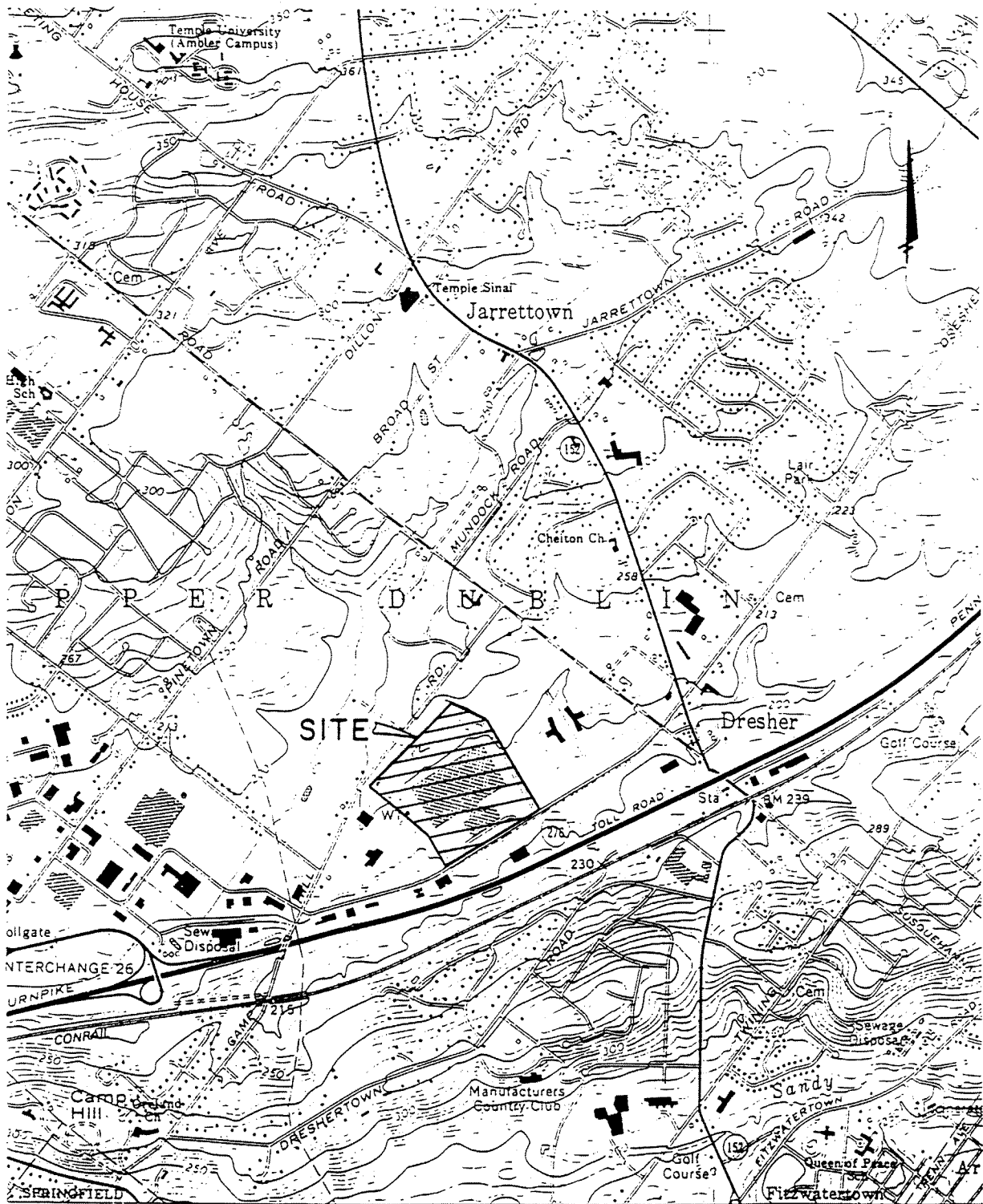
IV. DECLARATION

Based on the Administrative Record compiled for this Corrective Action, I have determined that the selected Corrective Measure as set forth in the Statement of Basis and modified or clarified by the Final Decision herein is appropriate and will be protective of human health and the environment.

Date: 12/16/94



Peter H. Kostmayer,
Regional Administrator
U.S Environmental Protection Agency
Region III



0 2000 FT.



SOURCE: USGS 7.5 Minute Quad Map: Ambler, PA

FOR ILLUSTRATION PURPOSES ONLY



Harding Lawson Associates
 Engineering and
 Environmental Services
 131 North Third Street
 Philadelphia, PA 19106
 215-627-4505

SITE LOCATION MAP

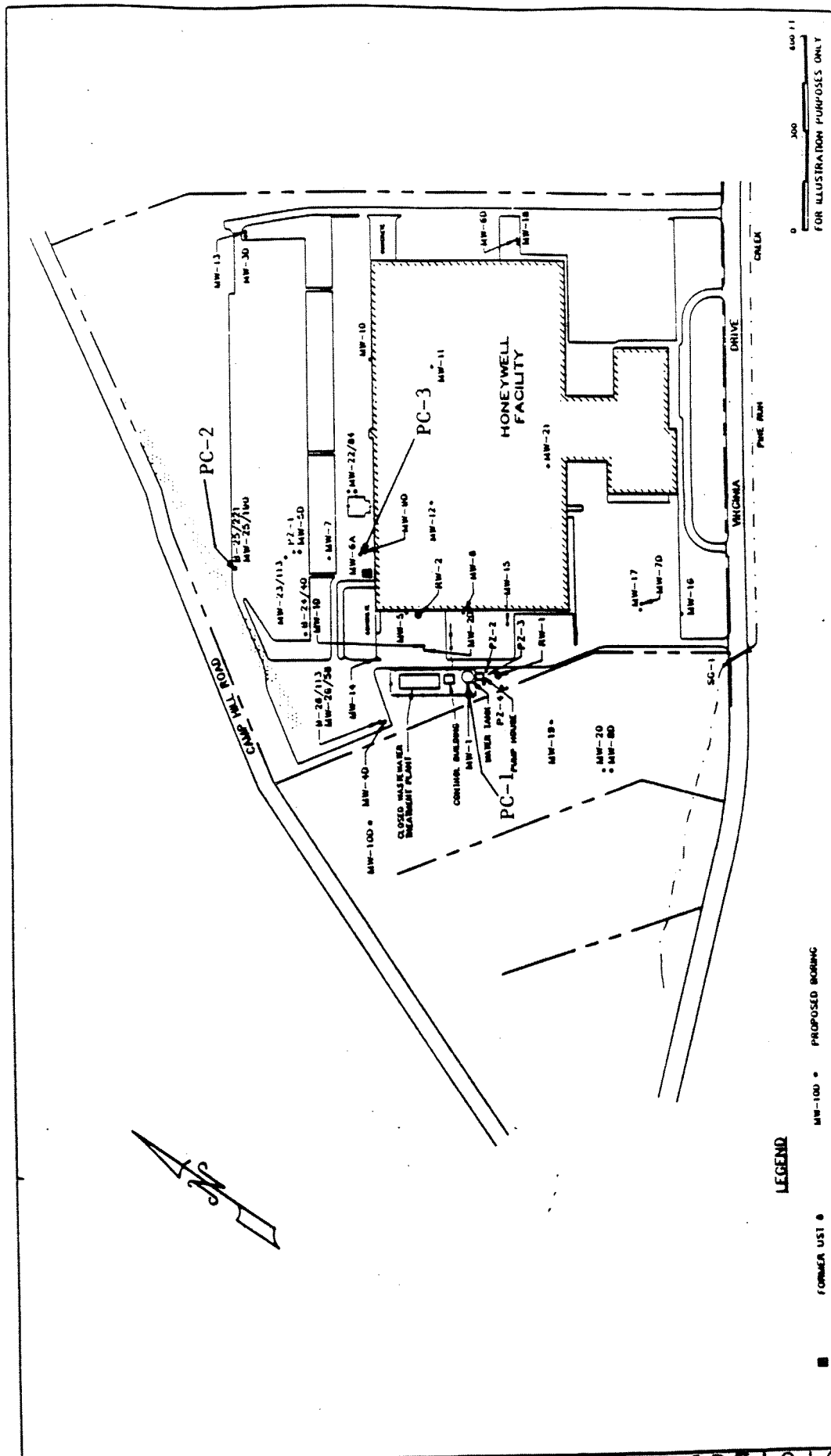
1100 VIRGINIA DRIVE
 FORT WASHINGTON, PENNSYLVANIA

FIGURE

1

DRAWN JSW	JOB NUMBER 19029.6	APPROVED	FILE S-BASE	DATE 8/6/93	REVISED DATE
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AR510160



LEGEND

- FORMER USE
- PROPERTY LINE
- - - FENCE
- ~ CREEK
- DIAMETER WIRE LOCATION (BASED ON GEOPHYSICAL SURVEY)
- MW-100 • PROPOSED BORING
- RW-1 • RECOVERY WELL
- MW-11 • MONITORING WELL
- ELECTRICAL SUBSTATION
- PC

Points of Compliance

Harding Lawson Associates
 Engineering & Construction Services
 131 North 30th Street
 Philadelphia, PA 19106
 215-837-1805
 FAX 215-837-1808
 JSM

WELL LOCATION PLAN

HONEYWELL, INC.
 FORT WASHINGTON, PA
 APPROVED 19029101 3/15/94
 DATE

FIGURE 2

AR510161