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RCRA GROUND WATER MONITORING REPORT VOLUME 6 - ROUND 6 SAMPLING MARCH 1988

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RCRA GROUND WATER MONITORING REPORT

VOLUME 6 — ROUND 6 SAMPLING
MARCH 1988

WESTINGHOUSE MATERIALS COMPANY OF OHIO
FERNALD, OHIO

DEPARTMENT OF ENERGY
FEED MATERIALS PRODUCTION CENTER

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RCRA GROUND WATER MONITORING REPORT

VOLUME 6 - ROUND 6 SAMPLING

March 1988

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1.0 INTRODUCTION

The Feed Materials Production Center (FMPC) is a uranium metal processing facility operated for the Department of Energy (DOE) by the Westinghouse Materials Company of Ohio (WMCO). It is located near Fernald, Ohio (Figure 1-1). As part of the continuing RCRA ground water monitoring compliance effort, the sixth round of ground water samples was collected from forty on-site and off-site wells between November 30 and December 7, 1987. The results of the Round 6 sampling are summarized in this report.

The first round of quarterly ground water sampling was conducted between August 1, 1985 and January 1986. The three phases are described below:

- Phase 1 of Round 1 was performed on August 1, 1985. Four wells screened in the saturated portion of the glacial till were sampled as part of this work. The results of the analytical testing were presented and interpreted in a Dames & Moore report dated December 19, 1985 (Reference 1).

- Phase 2 of Round 1 was completed three weeks later on August 27, 1985. Seven wells completed in the sand and gravel aquifer were sampled during this phase. Results were provided in a Dames & Moore report dated December 20, 1985 (Reference 2).

- Phase 3 of Round 1 took place in early January 1986 and involved the sampling of 32 on-site and off-site monitoring wells. Results from this effort were presented and discussed in a Dames & Moore report dated June 1986 (Reference 3).

Analytical results from all phases of Round 1 sampling are included in Appendix F of this report. Even though changes in water quality occur over time, a comparison between the results for the three phases of Round 1 and other rounds can be made to estimate relative changes in overall ground water quality.

Round 2 RCRA sampling was completed in May 1986. Results of Round 2 sampling were presented and discussed in a Dames & Moore report dated November 1986 (Reference 4). Analytical results from Round 2 sampling are included in Appendix F of this report.

Round 3 of the RCRA sampling was completed in August 1986 and results were presented and discussed in a Dames & Moore report

dated March 1987 (Reference 5). Analytical results from Round 3 are included in Appendix F of this report.

Round 4 RCRA sampling was completed in November 1986, and the results were presented and described in a Dames & Moore report completed in May 1987 (Reference 6). Analytical results from Round 4 are included in Appendix F of this report.

Round 5 sampling was completed in May 1987, and the results were presented and described in a Dames & Moore Report completed in November 1987 (Reference 7). Analytical results from Round 5 are included in Appendix F of this report.

Round 6 RCRA sampling was completed in December 1987, and is the subject of this report. This is in conformance with U.S. EPA Interim Status Detection monitoring requirements (40 CFR Part 265).

2.0 GROUND WATER MONITORING

The ground water monitoring performed as part of this project was initiated to characterize ground water quality at the FMPC. It also assists in identifying RCRA regulated hazardous and radionuclide constituents that may be present in the ground water. A previous study by Dames & Moore (Reference 8) has indicated that uranium is present in portions of the sand and gravel aquifer at levels above background.

A total of forty-one (41) on-site and off-site wells are included for sampling in the RCRA program. The location of each well is shown on Figure 2-1. Only forty wells were sampled in Round 6 because MW-14s was dry and could not be sampled. The wells monitor two distinct water bearing units; a shallow clayey till layer and an underlying sand and gravel aquifer. The shallow till system is monitored by wells MW-12, MW-19TP, MW-20TP, MW-21TP, MW-22TP, and OS-1A. The remaining 35 wells are all completed in the sand and gravel aquifer. The sand and gravel aquifer wells are completed at various depths in order to provide information on the potential vertical movement of any identified above-background constituents. Figure 2-3 is a diagram of the aquifer under the FMPC and the designation of well series identifiers. The till wells in the RCRA sampling program are equivalent to 100 series wells in the Remedial Investigation /Feasibility Study (RI/FS). The majority of the wells in the RCRA sampling are equivelant to 200 and 300 series wells in the RI/FS. The three production wells are equivelant to the 400 series wells in the RI/FS. As a part of the hydrogeologic investigaiton of the RI/FS, existing wells will be cataloged and assigned a series designation conforming with the relationships shown in Figure 2-3. Data from sampling programs prior to the RI/FS will be reevaluated to assess vertical and horizontal gradients.

2.1 Selection of Background Wells

Characterization of background water quality at RCRA-related facilities is usually performed by sampling a well hydraulically upgradient of the waste disposal area. The well is typically completed in the same hydrogeologic unit as the downgradient wells. Because of the geology of the FMPC site, this procedure was only followed in selecting a background well for monitoring the glacial till.

The selection of background wells for the RCRA sampling program was based on the hydrogeologic data available at the time the investigation began. The current RI/FS will greatly expand the hydrogeologic data. The data from the well installation and sampling portions of the RI/FS will refine the determination of background wells and water table gradients.

In order to discuss the rationale for the selection of the background wells in the RCRA sampling, a basic understanding of the regional geology is required. A more detailed description of site geology may be found in Reference 8.

The sand and gravel aquifer beneath the FMPC is part of the New Haven Trough. This trough is an east-west trending subsurface channel curved in virtually impermeable Upper Ordovician Shales. The trough has been filled with highly permeable, alluvially deposited sands and gravels that are covered with till. The northern boundary of the trough corresponds roughly with the northern boundary of the FMPC. North of the trough, till is deposited directly on bedrock.

Well MW-12, which is used as a background well for monitoring the till, is screened in the glacial till and weathered bedrock. It is located hydraulically upgradient from the four other shallow wells and is about 500 feet north of the Plant Production Area. The water level elevation in MW-12 was 22 to 36 feet higher than the on-site till wells during Round 6 sampling. Water levels within the four till wells on site have water table elevations that range over an almost 14 foot wide elevation span.

The background well for the sand and gravel aquifer at the FMPC should have been placed upgradient (north) of the waste disposal area. However, the sand and gravel aquifer north of the FMPC abruptly grades into a thick sequence of glacial till overlying shale bedrock. The chemistry of the ground water in this till may be quite different than that of the ground water in the sand and gravel. Ground water in clays tends to have different natural concentrations of many constituents than water in sand and gravel. If a well completed in clayey materials was used as

the background well for the sand and gravel aquifer, non-representative background concentrations may have been identified for some of the constituents being analyzed.

Since an upgradient well screened in the till might not be representative of background water quality, a nearby water supply well had been selected to characterize background ground water quality in the previous Dames and Moore reports. The Southwestern Ohio Water Company operates a well, SW-2, that is complete in the sands and gravels of the New Haven Trough, approximately one mile east of the site. This well has historically been used as the background well for the sand and gravel aquifer. After review of the Dames and Moore data, MW-11 appears to be the upgradient, background well for the sand and gravel aquifer. Monitoring Well 11 has maintained consistent water quality throughout the study and has consistently been the upgradient well in the data reports. The MW-11 water quality is drawn from the upper portion of the upper sand and gravel aquifer, and is not unlike the water from SW-2. This revision of the designation of the upgradient and background water quality will be further refined as part of the RI/FS.

Samples of the ground water were collected between November 30 and December 7, 1987 using the sampling procedures outlined in the "RCRA Groundwater Procedures Manual" (Appendix A). The samples were then sent to Howard Laboratories, Inc., in Dayton, Ohio for analysis according to U.S. EPA-approved protocols and procedures (Reference 9).

Tests were performed for 94 specific parameters, including numerous ions, metals, organic compounds, and radionuclides. A list of the parameters that were analyzed is included in Appendix C. The compounds that were detected in the sampled wells are included in Tables 3.1 through 3.4 of this report. A copy of the laboratory data sheets is provided in Appendix D. For ease of reading, only the volatile organic compounds actually detected have been included in Tables 3.1 through 3.4. Appendix E contains copies of the chain-of-custody forms and request-for-analysis forms for the Round 6 samples.

2.2 Water Table Configuration

Water level elevations were measured at most well locations. At Wells P-1, P-2, P-3, MW-1s, MW-3, MW-5, SW-2, OS-2 and OS-3, the depth of the water could not be measured due to the construction of the well. Measurements and water table elevations from Round 6 sampling are presented in Table 2.1.

A water table elevation contour map of the sand and gravel aquifer underlying the FMPC site and its surrounding area is presented as Figure 2-2. These water table elevations are in

general agreement with results previously reported for this site. Ground water flow in the sand and gravel aquifer is generally east to southeast. The water table is quite flat with a drop of only four feet across the entire site.

The ground water elevations at most of the measurement points are approximately 1 to 3 feet lower than those reported for May 1987. The summer of 1987 was extremely dry, and therefore the drop in the water table is not unexpected.

Water table contours for the glacial till wells are not available. This is due to the limited number of wells completed in the till and the great differences in water elevation in the five wells on-site. Water elevations in the till range over a span of 14 feet. Given this range and the heterogeneous nature of the till, it is doubtful that there is a single water bearing zone in the till. The ongoing RI/FS monitoring well installation program and data analysis will help resolve this uncertainty.

3.0 WATER QUALITY

The ground water quality data developed from this sixth round of RCRA sampling has been divided into the following categories:

- Water quality data from the shallow (glacial till) ground water system;
- Water quality data from wells completed in the sand and gravel aquifer inside the Plant Production Area;
- Water quality data from the Plant Production wells; and
- Water quality data from wells completed in the sand and gravel aquifer outside the Plant Production Area.

These categories have been used as an aid in evaluating the large number (over 4,000 values) of laboratory analytical results. The categories are consistent with the ground water flow systems present at the FMPC and, where appropriate, comparisons between the categories have been made.

3.1 Glacial Till Ground Water Quality

Six wells have been completed in the till water bearing zone at the FMPC and have been sampled as part of the Round 6 work. These are MW-12 (upgradient well), MW-19TP, MW-20TP, MW-21TP, MW-22TP, and OS-1A. Well OS-1A is a downgradient, off-site monitoring well. Analytical data from these wells are presented in Table 3.1. These data indicate that:

- No pesticides/herbicides were detected in the water recovered from glacial till saturated zones.

- Six volatile organic compounds (VOC) were detected in MW-19TP. Concentrations of these compounds ranged from 0.83 to 29.50 ug/l. The following VOC's were detected: cis-1,2-Dichloroethene; 1,1-Dichloroethane; 1,1,2,2-Tetrachloroethane; Bromoform; Chloroethene (Vinyl Chloride); and 1,2-Dichlorobenzene. Bromoform was present at 0.91 ug/l, which is below the maximum contaminant level (MCL) of 100 ug/l as defined by the U.S. EPA Safe Drinking Water Act (SDWA). Cis-1,2-Dichloroethene was found at 29.50 ug/l, which is below the proposed maximum contaminant level goal (PMCLG) of 70 ug/l as defined by the SDWA; and 1,2-Dichlorobenzene was present at 0.83 ug/l, which is below the PMCLG of 620 ug/l (SDWA). Chloroethene (Vinyl Chloride) was detected at 0.87 ug/l, which is below the maximum contaminant level of 2 ug/l as defined by the U.S. EPA National Primary Drinking Water Regulations. Also detected in MW-19TP during Round 5 RCRA sampling were 1,1-Dichloroethane, Chloroethene (Vinyl Chloride) and cis-1,2-Dichloroethene. VOC's were not detected in any other till monitoring wells during Round 6 sampling. The presence of VOC's in ground water at MW-19TP may indicate that Pit 4 is influencing the shallow till zone. Monitoring of these constituents will continue in the ongoing RI/FS hydrogeologic assessment program.

- Gross alpha activity values exceeded the primary water quality standards in MW-21TP and MW-22TP. Alpha activity levels from this and previous rounds of sampling have indicated a general upward trend in alpha activity in these wells. The other till wells did not exhibit any systematic changes in alpha activity. Monitoring of alpha activity will continue in the ongoing RI/FS project at the FMPC.

- Gross beta activity exceeded the primary water quality standards in MW-19TP, MW-21TP, and MW-22TP. The activity measured in MW-21TP represents a five-fold increase above values reported in previous rounds of sampling. A general upward trend in beta activity is apparent in this well. Monitoring will continue in the ongoing RI/FS at the FMPC.

Ground water samples collected in the RCRA program are analyzed for an extensive list of radionuclides selected as representative, site-specific parameters. For clarity, only those radionuclides present at detectable activities will be discussed here. See Appendix C for the complete list of radionuclide analytical parameters.

- Total uranium levels reported for MW-21TP and MW-22TP exceeded values detected in previous rounds of sampling. Total uranium detected in MW-19TP decreased, and uranium levels above background (References 8 and 16) were not detected in MW-12, MW-20TP or OS-1A. Radium 228 was detected in MW-21TP and MW-22TP at 23 pCi/l and 4 pCi/l, respectively. The MW-21TP value exceeds the primary water quality standard for total radium. None of the other radionuclide analytical parameters tested for were detected. Monitoring for the radionuclides listed in Appendix C will continue in the ongoing RI/FS program.

- Coliform levels exceeded the SDWA primary standard of 1 colony/100ml in ground water from wells MW-19TP, MW-20TP, MW-21TP, and OS-1A. Given that Well OS-1A is near a cow pasture and dog house, a high coliform level is not surprising. Coliform levels in excess of the SDWA primary standards have been detected consistently in this well. Coliform levels were elevated above previous rounds in MW-19TP and MW-21TP, while the level in MW-22TP remained about the same relative to previous RCRA monitoring results. A decrease in coliform was reported for MW-20TP. High levels of coliform have been detected previously in this well.

- Manganese concentrations in MW-19TP, MW-20TP, MW-21TP, and MW-22TP were in excess of the SDWA secondary standard of 0.05 mg/l. Manganese concentrations in MW-19TP and MW-22TP increased in Round 6 as compared to previous sampling rounds. This is in contrast to the total dissolved solids and iron concentrations, which decreased in Round 6 compared to previous rounds. These contrasting trends may be due to the influence of Pit 4 on the local water chemistry. These constituents will continue to be monitored by the ongoing RI/FS program.

- Elevated TOX concentrations, above those reported in previous rounds of sampling, were noted in all of the till wells except the background well, MW-12, and the off-site well, OS-1A. The MW-12 TOX concentration remained below the detection limit, while the OS-1A TOX value decreased relative to previous data. Elevated TOX levels in the remaining till wells may be related to the VOC's detected in MW-19TP.

- Chloride concentrations ranged from 4.0 to 420.0 mg/l in the till ground water with the highest concentration found in MW-19TP. Sulfate concentrations ranged from 4.0 to 410.0 mg/l in the till ground water, with the

highest concentration occurring in MW-22TP. Sulfate levels in MW-19TP and MW-22TP were in excess of the SDWA secondary standard of 250 mg/l. Nitrate concentrations in samples of the till ground water were below the primary SDWA standard of 10.0 mg/l (reported as N). Nitrate levels increased in MW-20TP and MW-21TP and decreased in MW-22TP and OS-1A in Round 6 as compared to previous sampling rounds. Nitrate levels in MW-19TP were consistent with previous sampling measurements. Nitrate levels in MW-20TP and MW-21TP increased by an order of magnitude over Round 5 measurements. Measured nitrate values for MW-22TP and OS-1A have been highly variable in previous rounds of sampling; however, both wells show a 25% decrease in value from Round 5. Monitoring of these constituents will continue in the ongoing RI/FS program at the FMPC.

- Concentrations of metals (lead, barium, etc.) were within or below drinking water standards for all of the till wells. Manganese was an exception and was noted above.

- The pH of water from the till zone was within the secondary SDWA standard range of 6.5 to 8.5. The total dissolved solids measured in MW-12, MW-19TP, MW-21TP, and MW-22TP are in excess of the secondary SDWA standard of 500 mg/l.

- Phenol concentrations from all of the till wells were below the taste and odor U.S. EPA water quality criterion for phenol of 0.3 mg/l.

3.2 Sand and Gravel Aquifer Water Quality - Inside Plant Production and Waste Storage Area

Within the Plant Production Area, the sand and gravel aquifer is monitored at varying depths by 14 wells. The majority of these wells are installed within the vicinity of the Waste Storage Area. Analytical results of ground water samples from these wells are presented in Table 3.2. These data indicate that:

- No pesticides/herbicides were detected in any of the wells sampled in Round 6. Low levels of the pesticide/herbicide 2,4-D and 2,4,5-TP Silvex were found in MW-8s in Round 2; however, these constituents have been sampled for, but not detected in, subsequent sampling rounds 3 through 6. Monitoring will continue in the ongoing RI/FS program.

- No VOC's were detected in any of the sand and gravel ground water monitoring wells. See Appendix C for a list of VOC analytical parameters.

- Gross alpha activity exceeded the SDWA primary water quality standards in MW-3 and MW-21s. The gross alpha activity levels have increased in activity compared to Round 5 in MW-1s, MW-4, and MW-5. Gross beta activity exceeded the SDWA primary water quality standard in MW-3, MW-10, MW-19s, MW-21s, and MW-22s. Beta activity has increased as compared to Round 5 in MW-1s, MW-4, MW-5, MW-8s, MW-13s, and MW-13d. The monitoring wells near Pit 4 have shown levels above detection in previous rounds of sampling; however, Round 6 is the first time that activity has exceeded the SDWA primary water quality standard apart from the immediate Pit 4 area. The activity reported appears to be independent of the well's screened interval as the increased activity is noted in both the upper and lower portions of the upper sand and gravel aquifer (Reference 8). Further monitoring of the entire sand and gravel aquifer will be conducted as part of the ongoing RI/FS program at the FMPC.

- No radionuclides other than uranium, radium 226, radium 228, and strontium 90 were detected in the sand and gravel aquifer inside the FMPC Production Area. Radium 226 was detected in MW-3 at 16 pCi/l. This is 11 pCi/l above the SDWA primary water quality standard for total radium. Radium 228 was detected in MW-3 and MW-21s at levels in excess of the total radium SDWA primary standard. Strontium 90 was detected in MW-21s at 22.0 pCi/l. This is above the drinking water standard for strontium 90 of 8 pCi/l. Uranium was detected in MW-3, MW-19s, and MW-21s at levels above those detected in previous sampling rounds. The previous levels measured in MW-3 have indicated a slight upward trend in total uranium; however, review of the data, including WMCO monthly analyses doesn't support the anomalous activity reported in Round 6. Additional monitoring will be conducted in the ongoing RI/FS program at the FMPC.

- Manganese concentrations exceeded SDWA secondary water quality standards in ten out of fourteen of the wells. Consistent concentrations were reported for all wells with detectable values. No detectable concentration of manganese was reported for MW-4, MW-19s, MW-21s or MW-22s. The sand and gravel aquifer upgradient well, SW-2, reports a manganese concentration of 0.151 mg/l. The results suggest that background (MW-11) values greater than 10 times are reported for MW-10 and MW-19s. The remaining eight wells have values 1 to 10

times above 0.151 mg/l. Monitoring for manganese will continue in the RI/FS program.

- Elevated TOX levels were found in MW-13d, MW-13s, MW-4, MW-5, MW-1s, MW-3, MW-19s, and MW-22s as compared to the background well, MW-11. Only MW-19s has shown detectable TOX levels in consecutive rounds of sampling. Previous sampling rounds indicate variable TOX concentrations.

- Sulfate levels exceeded SDWA primary water quality standards in MW-10, MW-13d, and MW-19d. Levels reported for MW-3, MW-8s, and MW-22s were above levels reported in previous rounds. Sulfate levels below those reported in previous rounds of sampling were noted in MW-4 and MW-19s. Nitrate levels exceeded SDWA primary standards in MW-10, MW-19s, MW-21s, and MW-22s. While still above the standard, decreased nitrate concentrations were reported for MW-19s and MW-10. Overall decreases in nitrate concentration were noted in six of nine wells which reported detectable concentrations in Round 5. These elevated concentrations for both sulfate and nitrate correspond to data collected in the previous rounds of sampling. The elevated values near Pit 4 (MW-19s, MW-19d, MW-22s, and MW-21s) may indicate that Pit 4 is influencing the sand and gravel aquifer. Monitoring of these constituents will continue in the ongoing RI/FS program.

- Iron levels exceeded the SDWA primary water quality standards in nine of fourteen wells. Overall, a slight decrease in iron concentration was seen from previous rounds of sampling. The reported iron concentrations are most likely related to regional water quality within the sand and gravel aquifer and not to FMPC operations (Reference 7). Other metals and water quality indicators were not detected or were within or below U.S. EPA Water Quality Standards.

- The pH of water from the sand and gravel aquifer inside the Production Area is within the SDWA secondary standard range of 6.5 to 8.5. The total dissolved solids values in MW-10, MW-13s, MW-13d, MW-19s, MW-19d, MW-21s, and MW-22s exceed the SDWA secondary standard of 500 mg/l.

- Phenol levels exceeded SDWA recommended water quality standard in MW-4, but were below the taste and odor U.S. EPA water quality criterion of 0.3 mg/l. No other wells reported phenols above the detection limits. Analysis for phenols in these wells has shown, and

continues to show, wide fluctuation in occurrence and concentration. Sampling for these constituents will continue in the ongoing RI/FS program at the FMPC.

3.3 Plant Production Wells

Three wells provide the FMPC with necessary potable and production water. These wells (P-1, P-2, and P-3) are screened in the lower portion of the lower sand and gravel aquifer and are discussed separately because of their specialized use and importance to the FMPC. Samples were collected directly from the well. Results of laboratory analysis are shown in Table 3.3. Based upon these results, the following statements can be made:

- No pesticides/herbicides were detected in any of the three production wells.
- VOC's were not analyzed for the production wells due to the pump and piping configurations rendering the wells inaccessible to bailing.
- No radionuclides related to past or present FMPC operations were detected in levels exceeding water quality standards. Gross beta activity was the only activity reported above detection limits; however, the values were well below the SDWA primary water quality standards of 30 pCi/l.
- TOX values above the detection limit were reported for P-1 and P-2. The values were comparable to previous rounds of sampling.
- Iron concentration values exceeded the SDWA secondary water quality standards of 0.3 mg/l for Wells P-1, P-2, and P-3. These values appear to represent regional aquifer quality and not FMPC operation activities. It should be noted that the water from these wells is filtered and treated prior to use as a water supply. All production well samples were collected from the wells prior to that treatment.
- Reported manganese levels for the three production wells were above the SDWA secondary standard of 0.05 mg/l, and two to three times higher than the value measured in the background well (SW-2). Metals and other water quality indicators were within U.S. EPA water quality standards.
- The pH of water from the plant production wells was within the SDWA secondary standard range of 6.5 to 8.5. Total dissolved solids concentration was above the SDWA

secondary standard of 500 mg/l for P-1 only. TOC and conductivity were indicative of fresh water.

- Sulfate and chloride levels were below the SDWA secondary standards for these constituents. Nitrate concentrations were below the detection limit for all three wells.

- Phenol concentrations were below the detection limit for all three wells.

3.4 Sand and Gravel Aquifer Water Quality - Outside Plant Production Area

Water quality within the sand and gravel aquifer outside the Plant Production Area is monitored at varying depths by 14 monitoring wells and four water supply wells. Thirteen of the 14 wells were sampled, as MW-14s was dry. Sampling data from these wells is provided in Table 3.4 and shows that:

- No pesticides/herbicides were detected in any of the wells outside of the FMPC Production Area.

- A single VOC (1,1,1-Trichloroethane) was detected in MW-15s at 5.13 ppb concentration, which is well below the 200 ppb primary water quality standard. No other VOC's were detected in ground water from the sand and gravel aquifer outside of the Production Area. The VOC 1,1,1-Trichloroethane has been detected in MW-15s in the last four rounds (rounds 2 through 5) in slightly increasing concentrations. However, the analysis of Round 6 indicates a decrease in concentration from Round 5, but the values are similar to those measured in rounds 2 through 4. The fact that similar contamination has not been noted upgradient makes tracing migration pathways difficult. Sampling for VOC's will continue in the ongoing RI/FS program at the FMPC in an effort to better define subsurface flow.

- Gross alpha activity exceeded the SDWA primary water quality standard of 15 pCi/l in MW-15s, MW-20s, OS-1, and OS-2. Alpha activity levels above those reported in Round 5 were reported for MW-14d, MW-16d, and OS-3. Gross beta activity exceeded the SDWA water quality standard of 30 pCi/l in OS-1, MW-15s, and OS-2. Beta activity levels above those reported in Round 5 were noted in MW-9, MW-14d, MW-16s, MW-16d, MW-18s, MW-18d, MW-20s, SW-2, and OS-3. The gross alpha and beta activities noted in excess of the standards are consistent with what has been noted in the previous five rounds of sampling. Gross alpha and beta

activities will be monitored in the ongoing RI/FS program at the FMPC.

- Radionuclides, other than uranium and radium 226, were not detected in the sand and gravel aquifer. Total uranium was detected in MW-14d, OS-1, OS-2, OS-3, and MW-15s. The three highest uranium concentrations found in this group of wells are associated with gross alpha and beta activity in excess of primary standards (MW-15s, OS-1, and OS-2). Total uranium levels measured in OS-3 showed the largest increase, from 25 pCi/l to 204 pCi/l, the remaining three wells showed values similar to previous data. Radium 226 was detected in OS-2, but at activities below the SDWA primary water quality standard. The monitoring of these constituents will continue in the ongoing RI/FS program underway at the FMPC.

- Manganese concentrations exceeded the SDWA secondary water quality standards of 0.050 mg/l in ten of the seventeen wells monitored. The wells exceeding the standard are: MW-9, MW-11, MW-14d, MW-15d, MW-17s, MW-17d, MW-18d, MW-20d, SW-2, and OS-3. Iron concentrations exceeded the SDWA secondary standard of 0.300 mg/l in seven of the seventeen wells sampled. The wells exceeding the standard for iron are: MW-11, MW-14d, MW-15d, MW-17d, MW-18d, MW-20d, and OS-3. These constituents will continue to be monitored in the RI/FS program.

- TOX levels were above detection limits in MW-9, MW-11, MW-14d, MW-15s, MW-17s, MW-17d, MW-18s, MW-18d, MW-20s, and OS-3. The TOX concentration reported for MW-14d represents the largest fluctuation from Round 1 through Round 5. The Round 6 analysis for MW-14d was seven times higher than previous rounds. However, previous data indicates wide fluctuation in occurrence and concentration of TOX.

- TOC levels were in the normal range for ground water.

- Chloride and sulfate concentrations in ground water from this group of wells are all below the SDWA secondary standards. Only MW-17s and SW-2 contained total dissolved solids in excess of the SDWA secondary standard of 500 mg/l. Nitrate concentrations were below the SDWA primary standard.

- Chromium (total) was detected in MW-14d and MW-18d at levels below SDWA primary water quality standards. The concentration detected in MW-18d is lower than the value found in Round 5. Round 6 is the first sampling

in which chromium (total) was detected in MW-14d. The occurrence of chromium has not been seen in every round of sampling. The wells that have shown chromium have been screened in the upper portion of the upper sand and gravel aquifer and include MW-14s, MW-15s, MW-16s, MW-17s, MW-18s, and MW-20s. Round 6 is the first round of sampling in which chromium was detected in a well screened in the lower portion of the upper sand and gravel aquifer. Arsenic was found in MW-15d; the concentration was below the SDWA primary standard of 0.050 mg/l. Cyanide was present in MW-15d and MW-20s at concentrations below the SDWA primary the PMCLG of 0.75 mg/l. Copper was detected in MW-9, MW-14d, MW-16s, and MW-18d. Nickel was also detected in Well OS-2. Lead was found in MW-14d and MW-18d. Zinc was detected in MW-15d, SW-2, OS-1, OS-2, and OS-3. None of these metals exceeded the SDWA primary or secondary standards; however, monitoring for these constituents will continue in the RI/FS.

- The pH of water from the sand and gravel aquifer outside of the Production Area is within the SDWA secondary water quality standard range. The total dissolved solids concentrations in MW-17s and SW-2 exceed the SDWA secondary standard of 500 mg/l.

- Phenols concentration exceeded SDWA recommended water quality standards in five of the seventeen wells. The following monitoring wells reported detectable values: MW-9, MW-15d, MW-16d, OS-2, and MW-18d. Phenols were detected in MW-18d in concentrations similar to those reported in Rounds 1, 2, 4 and 5. Well MW-18d was the only well that showed consistent occurrence. The remaining wells have had large fluctuations in occurrence and concentration. Monitoring for phenols will continue in the ongoing RI/FS program.

3.5 Results of QA/QC Analysis

As part of the ongoing QA/QC program at the FMPC, known spiked QA/QC samples (shipped with the ground water samples) were tested by Howard Laboratories, Inc., as a check on the accuracy of chemical analysis. The results of these analyses are presented in Table 3.6.

Reported values (as analyzed by Howard Laboratories, Inc.) agree very closely to the actual values, as determined by the U.S. EPA Environmental Monitoring and Support Laboratory. The average difference in indicators (QC #1 and #2) was -0.51 mg/l and 7.6 mg/l, respectively. The average difference in metals (QC #3) was 0.00025 mg/l. The second metals ampule (QC #4) average

difference was -0.001 mg/l. The purgeables (QC #5, QC #6, and QC #7) reported average differences of -9.82 mg/l, -1.8 mg/l, and 0.45 mg/l, respectively.

All of the reported QA/QC values and average differences were within the acceptable range for the actual values as reported in the U.S. EPA Environmental Monitoring and Support Laboratory, Water Pollution Quality Control Check Samples.

4.0 CONCLUSIONS

This report presents the analytical results of the Round 6 RCRA ground water sampling at the FMPC. From these results the following conclusions are drawn:

- Water quality within the till saturated zone appears to differ from the upgradient, background ground water. Radionuclide activities and typical water quality indicator (chloride, sulfate, and nitrate) concentrations have increased near Pit 4 in MW-19TP, MW-21TP, and MW-22TP.

- Water quality of the sand and gravel aquifer within the Plant Production Area appears to indicate degradation of water quality with respect to sulfate and nitrate. These values were not significantly different in Round 6, but were consistent with previous sampling. Gross alpha and beta activity were detected in an increased number of wells.

- Water quality of the Plant Production wells appears to have remained constant compared to the quality reported in previous rounds of sampling. Manganese and total dissolved solids were the only constituents noted in excess of SDWA standards.

- The quality of the sand and gravel aquifer outside of the FMPC Plant Production Area does not appear to show any significant change from previous sampling. However, various metals have been detected at very low concentrations south of the FMPC Production Area. A single VOC was detected in MW-15s. Detectable levels of gross alpha and beta, as well as uranium, were found at levels slightly higher than those reported in Round 5. The greatest levels of activity are noted to the south of the FMPC Production Area.

- No pesticides/herbecides were detected in any wells.
- VOC's were only detected in wells inside the Production Area, and all values were less than the primary drinking water standards.

REFERENCES

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(2) Dames & Moore, 1985, Sample Results: Sand and Gravel aquifer, RCRA Groundwater Monitoring: Report to Health Safety and Environmental, NLO, Inc., dated December 20, 1985.

(3) Dames & Moore, 1986, Results of Round 1 Groundwater Sampling, Feed Materials Production Center, Fernald, Ohio. Report dated June, 1986.

(4) Dames & Moore, 1986, RCRA Groundwater Monitoring Report. Volume 2 - Round 2 Sampling. Report dated November, 1986.

(5) Dames & Moore, 1987, RCRA Groundwater Monitoring Report. Volume 3 - Round 3 Sampling. Report dated March, 1987.

(6) Dames & Moore, 1987, RCRA Groundwater Monitoring Report. Volume 4 - Round 4 Sampling. Report dated May, 1987.

(7) Dames & Moore, 1987, RCRA Groundwater Monitoring Report. Volume 5 - Round 5 Sampling. Report dated November, 1987.

(8) Dames & Moore, 1985, Groundwater Study-Task C Report. Report to the Department of Energy, Feed Materials Production Center, dated July, 1985.

(9) U.S. EPA, 1983, Methods for Chemical Analysis of Water and Wastes. EPA-600/4-79-020.

(10) U.S. EPA, 1986, RCRA Groundwater Monitoring Technical Enforcement Guidance Document (TEGD), Pub. No. OSWER-9950.1.

(11) Code of Federal Regulations, 1985, Part 264.97 General Groundwater Monitoring Requirements.

(12) Westinghouse Materials Company of Ohio, 1987, Feed Materials Production Center Environmental Monitoring Annual Report for 1986. U.S. Department of Energy, Oak Ridge Operations Office, Contract No. DE-AC05-86OR2121600, 133 pg.

LIST OF ABBREVIATIONS AND ACRONYMS

ASI	Advanced Sciences, Inc.
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DWS	Drinking Water Standards
EPA	Environmental Protection Agency
FMPC	Feed Materials Production Center
MCL	Maximum Contaminant Level
mg/l	Miligrams per liter
MSL	Mean Sea Level
MW	Monitoring Well
NLO	National Lead of Ohio
NPDWR	National Primary Drinking Water Regulations
NTNCWS	Non-transient Non-community Water Systems
OS	Off-site
pCi/l	Picocurie per liter
PDWS	Primary Drinking Water Standards
ppb	Parts per billion
ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
SDWA	Safe Drinking Water Act
SDWS	Secondary Drinking Water Standards
SW-2	Southwest Ohio - Collector Well No. 2
TDS	Total Dissolved Solids
TOC	Total Organic Carbon
TOX	Total Organic Halogens
TP	Test Pit
VOC	Volatile Organic Compound
WMCO	Westinghouse Materials Company of Ohio

TABLE 2.1
ROUND 6 WATER LEVEL ELEVATION -- NOVEMBER 1987

WELL #	DEPTH to WATER (ft)	CASING ELEVATION (MSL)	GRADE (MSL)	WATER TABLE ELEVATION (MSL
P-1	NA	578.66	576.66	NA
P-2	NA	579.16	577.16	NA
P-3	NA	579.36	577.36	NA
1S	NA	585.55	583.47	NA
1d	65.92	585.31	583.81	519.39
3	NA	560.86	559.30	NA
4	35.75	556.85	556.15	521.10
5	NA	557.09	555.53	NA
8s	57.00	576.60	574.90	519.60
8d	57.00	576.62	574.82	519.62
9	36.51	557.23	555.31	520.72
10	69.51	588.39	586.56	518.88
11	65.23	585.78	583.64	520.55
12	35.85	639.67	637.48	603.82
13s	72.93	590.37	588.71	517.44
13d	72.75	590.36	588.72	517.61
14s	16.80	535.79	533.76	518.99
14d	16.80	535.81	533.71	519.01
15s	61.51	579.65	577.80	518.14
15d	63.90	579.41	577.80	515.51
16s	23.00	542.28	540.47	519.28
16d	22.81	542.13	540.50	519.32
17s	17.10	536.19	534.43	519.09
17d	17.33	536.35	534.28	519.02
18s	53.43	573.36	571.31	519.93
18d	41.75	573.88	571.56	532.13
19s	65.23	585.38	583.26	520.15
19d	65.00	585.25	583.20	520.25
TP-19	7.62	584.96	582.98	577.34
20s	56.72	574.44	573.42	517.72
20d	57.90	574.71	573.31	516.81
TP-20	6.15	574.73	573.21	568.58
21s	65.62	586.02	594.42	520.40
TP-21	4.50	585.61	584.06	581.11
22s	67.25	587.95	587.93	520.70
TP-22	8.45	588.91	587.93	580.46
SW-2	NA	NA	NA	NA
OS-1	63.90	581.83	581.35	517.93
OS-2	NA	NA	NA	NA
OS-3	NA	NA	NA	NA
OS-1A	14.48	581.83	581.83	567.35
*IT-1	61.90	579.93	577.93	518.03
*IT-2	78.00	595.58	593.22	517.58
*IT-5A	76.82	594.22	592.17	517.40
*IT-6	57.81	576.02	574.07	518.21

*Not Sampled NA-Not Avilable MSL-Mean Sea Level

Table 3.1

SHALLOW (TILL) GROUNDWATER SAMPLING RESULTS (FMPC)
(All results in ppm except as noted)

NAME	MW-12	MW-19TP	MW-20TP	MW-21TP	MW-22TP	OS-1A
Chloride	110.0	420.0	4.0	14.0	90.0	20.0
Iron	0.064	1.270	0.098	0.450	0.130	<0.050
Manganese	<0.015	1.500	0.390	0.980	2.130	<0.015
Phenols	<0.005	<0.005	0.005	<0.005	0.005	0.010
Sodium	226.000	418.000	2.670	10.000	22.900	20.900
Sulfate	4.0	280.0	40.0	220.0	410.0	84.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.0025	<0.0025	<0.0025	<0.0025	0.003	<0.0025
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	17.600	456.000	77.300	119.000	323.000	99.200
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Chromium						
-Total	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Fluoride	0.76	0.30	1.13	0.94	0.61	0.61
Mercury	<0.0002	<0.0002	<0.0003	<0.0002	0.0003	<0.0002
Potassium	12.200	1.950	0.970	1.300	4.220	18.200
Magnesium	43.000	165.000	19.700	55.000	135.000	30.200
Nickel	<0.005	0.010	<0.005	<0.005	<0.005	<0.005
Nitrate	<0.02	0.06	0.56	0.42	0.35	1.14
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus	<0.02	0.11	0.13	0.28	0.13	0.09

TABLE 3.2

SHALLOW (TILL) GROUNDWATER SAMPLING RESULTS (FMPC)

(All results in ppm except as noted)

NAME	MW-12	MW-19TP	MW-20TP	MW-21TP	MW-22TP	OS-1A
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
T.D.S.	642	2480	344	780	1840	484
C.O.D.	<10	25	14	17	85	<10
pH (1)(2)	7.76	6.65	7.26	7.23	6.92	7.66
Conductivity(1)(3)	1120	5310	510	857	2240	837
T.O.C. (1)	<1	5.00	4.75	5.75	7.00	3.25
T.O.X. (1)	<10	210	28	10	32	<10
Coliform (7)	<2	350	250	1000	<2	325
Alachlor (4)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4,5-TP- Silvex	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOC's						
1,1,2,2-Tetrachloroethane (4)		1.54				
Cloroethene (4)		0.87				
Bromoform (4)		0.91				
cis-1,2-Dichloroethene (4)		29.50				
1,1 Dichlorethane (4)		15.00				
1,2-Dichlorobenzene (4)		0.83				
Gross Alpha (5)	<1	7	5	964	149	<1
Gross Beta (5)	7	77	12	3310	988	24
Radium 228 (5)	<1	<1	<1	23	4	<1
Uranium (5)	1.0	40	<1.0	6440	4200	<1.0

Table 3.2 Cont.

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS INSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	MW-1s	MW-1d	MW-3	MW-4	MW-4 (DUP)	MW-5
Chloride	18.0	20.0	21.0	25.0	24.0	18.0
Iron	2.010	4.790	0.952	0.183	0.179	2.060
Manganese	0.596	0.361	0.385	<0.015	<0.015	0.502
Phenols	<0.005	<0.005	<0.005	0.006	<0.005	<0.005
Sodium	12.200	15.300	12.400	14.000	14.400	9.000
Sulfate	68.0	13.0	92.0	44.0	52.0	72.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.005
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	95.500	82.200	84.100	81.600	83.000	94.900
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium						
-Total	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Fluoride	0.11	0.11	1.64	0.39	0.32	0.09
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	2.040	0.888	2.700	2.810	2.830	2.080
Magnesium	26.600	23.500	23.400	21.000	21.200	26.400
Nickel	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate	<0.02	<0.02	<0.02	0.63	0.63	<0.02
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus	<0.02	0.08	<0.02	<0.02	<0.02	<0.02

Table 3.2 Cont.

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS INSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	MW-1s	MW-1d	MW-3	MW-4	MW-4 (DUP)	MW-5
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.020	0.402	<0.020	<0.020	<0.020	<0.020
T.D.S.	416	352	404	380	336	464
C.O.D.	<10	<10	17	<10	<10	<10
pH (1)(2)	7.43	7.39	7.36	7.39	7.38	7.30
Conductivity(1)(3)	630	590	575	558	558	633
T.O.C. (1)	<1	<1	1	1	<1	<1
T.O.X. (1)	39	<10	51	54	<10	29
Coliform (7)	<2	<2	180	9	23	<2
Alachlor (4)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4,5-TP- Silvex	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Gross Alpha (5)	4	<1	2980	2	3	2
Gross Beta (5)	15	<3	14,100	17	19	9
Radium 226 (5)	<1	<1	16	<1	<1	<1
Radium 228 (5)	<1	<1	294	<1	<1	<1
Uranium (5)	<1	<1	11,700	<1	<1	<1

Table 3.2 Cont.

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS INSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	MW-8s	MW-8d	MW-10	MW-13s	MW-13s (DUP)	MW-13d
Chloride	18.0	12.0	85.0	26.0	27.0	64.0
Iron	6.110	2.540	<0.050	2.530	2.510	6.770
Manganese	0.438	0.387	4.620	0.176	0.186	0.341
Phenols	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	11.700	13.300	132.000	12.900	13.800	46.100
Sulfate	44.0	9.0	780.0	116.0	112.0	300.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.0025	0.003	<0.0025	<0.0025	<0.0025	<0.0025
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	50.000	78.000	359.000	108.000	109.000	182.000
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide	<0.005	<0.005	<0.005	<0.005	0.006	<0.005
Chromium						
-Total	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Fluoride	0.16	0.16	0.10	0.11	0.13	0.20
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	2.760	1.220	14.300	2.590	2.630	4.220
Magnesium	24.800	21.900	58.400	27.800	27.600	20.400
Nickel	<0.005	<0.005	0.009	<0.005	<0.005	<0.005
Nitrate	<0.02	<0.02	71.00	<0.02	<0.02	<0.02
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus	<0.02	0.07	<0.02	<0.02	<0.02	<0.02

Table 3.2 Cont.

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS INSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	MW-8s	MW-8d	MW-10	MW-13s	MW-13s (DUP)	MW-13d
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.020	0.226	<0.020	0.028	<0.020	<0.020
T.D.S.	292	344	2000	448	608	860
C.O.D.	<10	<10	<10	<10	<10	<10
pH (1)(2)	7.46	7.45	6.86	7.17	7.16	7.00
Conductivity(1)(3)	437	528	2350	775	765	1310
T.O.C. (1)	<1	<1	<1	1.75	1.78	3.25
T.O.X. (1)	<10	<10	<10	<10	64	38
Coliform (7)	<2	<2	<2	<2	<2	22
Alachlor (4)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4,5-TP- Silvex	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Gross Alpha (5)	<1	<1	<1	<1	<1	<1
Gross Beta (5)	16	7	62	5	6	10
Radium 226 (5)	<1	<1	<1	<1	<1	<1
Uranium (5)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Table 3.2 Cont.

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS INSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	MW-19s	MW-19d	MW-21s	MW-22s
Chloride	46.0	52.0	43.0	89.0
Iron	<0.050	<0.050	<0.050	<0.050
Manganese	<0.015	2.370	<0.015	<0.015
Phenols	<0.005	<0.005	<0.005	<0.005
Sodium	26.600	45.100	57.600	32.200
Sulfate	92.0	400.0	88.0	108.0
Silver	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.0025	<0.0025	<0.0025	<0.0025
Barium	<0.200	<0.200	<0.200	<0.200
Calcium	131.000	201.000	167.000	144.000
Cadmium	<0.001	<0.001	<0.001	<0.001
Cyanide	<0.005	0.006	<0.005	<0.005
Chromium				
-Total	<0.005	0.007	<0.005	<0.005
-Hexavalent	<0.005	< 0.007	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025
Fluoride	0.17	0.16	0.16	0.46
Mercury	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	3.420	6.160	7.280	4.840
Magnesium	30.500	25.100	28.400	46.800
Nickel	<0.005	0.008	<0.005	<0.005
Nitrate	34.20	0.13	76.70	52.00
Lead	<0.005	<0.005	<0.005	<0.005
Phosphorus	<0.02	<0.02	<0.02	<0.02

Table 3.2 Cont.

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS INSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	MW-19s	MW-19d	MW-21s	MW-22s
Selenium	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.020	<0.020	<0.020	0.028
T.D.S.	712	908	988	864
C.O.D.	<10	<10	<10	<10
pH (1)(2)	7.32	6.98	7.26	7.27
Conductivity(1)(3)	960	1180	1280	1220
T.O.C. (1)	1.00	1.00	1.00	1.00
T.O.X. (1)	143	<10	<10	88
Coliform (7)	<2	<2	<2	<2
Alachlor (4)	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0
2,4,5-TP- Silvex	<0.5	<0.5	<0.5	<0.5
Gross Alpha (5)	9	2	31	3
Gross Beta (5)	1290	12	2770	1220
Uranium (5)	7.0	<1.0	9.0	<1.0
Radium 226 (5)	<1.0	<1.0	<1.0	<1.0
Radium 228 (5)	<1.0	<1.0	12.0	<1.0
Strontium 90 (5)	<1.0	<1.0	22.0	<1.0

Table 3.3

GROUNDWATER SAMPLING RESULTS PLANT PRODUCTION WELLS (FMPC)
(All results in ppm except as noted)

NAME	P-1	P-2	P-3	P-3 (DUP)
Chloride	40.0	32.0	13.0	13.0
Iron	5.700	3.600	2.630	2.650
Manganese	0.423	0.400	0.389	0.385
Phenols	<0.005	<0.005	<0.005	<0.005
Sodium	37.200	20.000	11.900	11.700
Sulfate	140.0	36.0	32.0	40.0
Silver	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.0025	<0.0025	0.003	0.003
Barium	<0.200	<0.200	<0.200	<0.200
Calcium	126.000	103.000	84.600	85.500
Cadmium	<0.001	<0.001	<0.001	<0.001
Cyanide	<0.005	<0.005	<0.005	0.006
Chromium				
-Total	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025
Fluoride	0.15	0.12	0.18	0.20
Mercury	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	4.690	1.800	1.370	1.790
Magnesium	34.900	29.300	20.300	20.800
Nickel	<0.005	<0.005	<0.005	<0.005
Nitrate	<0.02	<0.02	<0.02	<0.02
Lead	<0.005	<0.005	<0.005	<0.005
Phosphorus	0.12	0.11	0.07	<0.02

TABLE 3.4

GROUNDWATER SAMPLING RESULTS PLANT PRODUCTION WELLS (FMPC)
(All results in ppm except as noted)

NAME	P-1	P-2	P-3	P-3 (DUP)
Selenium	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.020	<0.020	<0.020	<0.020
T.D.S.	604	436	352	360
C.O.D.	<10	<10	<10	<10
pH (1)(2)	7.26	7.37	7.35	7.38
Conductivity(1)(3)	1020	773	566	571
T.O.C. (1)	1	1	2.25	2.25
T.O.X. (1)	16	19	<10	<10
Coliform (7)	<2	<2	<2	<2
Alachlor (4)	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0
2,4,5-TP- Silvex	<0.5	<0.5	<0.5	<0.5
Gross Alpha (5)	<1	<1	<1	<1
Gross Beta (5)	6	4	<3	<3
Radium (5)	<1	<1	<1	<1
Uranium (5)	<1.0	<1.0	<1.0	<1.0

Table 3.4

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS OUTSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	MW-9	MW-11	MW-14d	MW-15s
Chloride	23.0	20.0	21.0	19.0
Iron	0.142	2.360	0.907	<0.050
Manganese	0.067	0.154	0.093	<0.015
Phenols	0.006	<0.005	<0.005	<0.005
Sodium	12.700	10.500	13.000	11.000
Sulfate	64.0	76.0	60.0	60.0
Silver	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.0025	<0.0025	<0.0025	<0.0025
Barium	<0.200	<0.200	<0.200	<0.200
Calcium	84.700	99.300	105.000	77.800
Cadmium	<0.001	<0.001	<0.001	<0.001
Cyanide	<0.005	<0.005	<0.005	<0.005
Chromium				
-Total	<0.005	<0.005	0.018	<0.005
-Hexavalent	<0.005	<0.005	<0.010	<0.005
Copper	0.050	<0.025	0.025	<0.025
Fluoride	0.20	0.26	0.13	0.18
Mercury	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	2.060	0.910	2.220	2.440
Magnesium	24.100	25.700	29.500	20.400
Nickel	<0.005	<0.005	<0.005	<0.005
Nitrate	1.54	<0.02	1.46	1.98
Lead	<0.005	<0.005	0.006	<0.005
Phosphorus	0.08	<0.02	<0.02	<0.02

Table 3.4 Cont.

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS OUTSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	MW-9	MW-11	MW-14d	MW-15s
Selenium	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.020	<0.020	<0.020	<0.020
T.D.S.	364	444	346	335
C.O.D.	<10	<10	<10	<10
pH (1)(2)	7.57	7.38	7.67	7.45
Conductivity(1)(3)	540	709	530	561
T.O.C. (1)	<1.00	2.25	1.75	2.25
T.O.X. (1)	16	10	98	68
Coliform (7)	31	<2	9900	<2
Alachlor (4)	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0
2,4,5-TP- Silvex (4)	<0.5	<0.5	<0.5	<0.5
VOC's				
1,1,1 Trichloroethane (4)				5.13
Gross Alpha (5)	<1	<1	7	35
Gross Beta (5)	18	<3	17	95
Radium 226 (5)	<1.0	<1.0	<1.0	<1.0
Uranium (5)	<1.0	<1.0	13.0	269.0

Table 3.4 Cont.

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS OUTSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	MW-15d	MW-16s	MW-16d	MW-17s	MW-17d
Chloride	27.0	24.0	23.0	33.0	21.0
Iron	2.730	0.200	<0.050	<0.050	1.640
Manganese	0.343	0.025	<0.015	0.122	0.267
Phenols	0.005	<0.005	0.008	<0.005	<0.005
Sodium	7.190	15.000	12.900	10.600	8.900
Sulfate	88.0	64.0	68.0	100.0	76.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	0.003	<0.0025	<0.0025	<0.0025	<0.0025
Barium	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	113.000	89.900	79.400	124.000	95.100
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide	0.006	<0.005	<0.005	<0.005	<0.005
Chromium					
-Total	<0.005	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	0.026	<0.025	<0.025	<0.025
Fluoride	0.18	0.16	0.18	0.13	0.16
Mercury	<0.0002	<0.0003	<0.0003	<0.0002	<0.0002
Potassium	1.640	2.750	1.990	2.000	1.980
Magnesium	25.100	23.700	22.500	26.600	20.200
Nickel	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate	<0.02	0.98	1.30	<0.02	<0.02
Lead	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus	<0.02	0.39	0.04	<0.02	<0.02

Table 3.4 Cont.

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS OUTSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	MW-15d	MW-16s	MW-16d	MW-17s	MW-17d
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	0.092	<0.020	<0.020	<0.020	<0.020
T.D.S.	490	336	332	527	420
C.O.D.	<10	<10	<10	<10	<10
pH (1)(2)	7.44	7.49	7.53	7.13	7.26
Conductivity(1)(3)	620	560	540	775	633
T.O.C. (1)	<1.00	1.00	1.00	3.25	1.25
T.O.X. (1)	<10	<10	<10	47	21
Coliform (7)	<1	<1	4	<2	<2
Alachlor (4)	<2.0	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0	<1.0
2,4,5-TP- Silvex(4)	<0.5	<0.5	<0.5	<0.5	<0.5
Gross Alpha (5)	<1	5	3	<1	<1
Gross Beta (5)	4	12	17	<3	<3
Radium 226 (5)	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium (5)	<1.0	<1.0	<1.0	<1.0	<1.0

Table 3.4 Cont.

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS OUTSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	MW-18s	MW-18d	MW-18d (DUP)	MW-20s	MW-20d
Chloride	8.0	12.0	12.0	22.0	23.0
Iron	<0.050	0.799	0.187	<0.050	1.110
Manganese	<0.015	0.056	0.030	0.027	0.185
Phenols	<0.005	0.015	0.019	<0.005	<0.005
Sodium	5.500	7.100	6.600	15.300	12.300
Sulfate	44.0	68.0	64.0	64.0	88.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Barium	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	105.000	83.500	90.000	83.500	97.100
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide	<0.005	<0.005	<0.005	0.006	<0.005
Chromium					
-Total	<0.005	0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	0.005	<0.005	<0.005	<0.005
Copper	<0.025	0.025	<0.025	<0.025	<0.025
Fluoride	0.21	0.21	0.23	0.22	0.13
Mercury	<0.0002	<0.0002	0.0002	<0.0002	<0.0002
Potassium	1.430	0.632	0.711	2.520	2.130
Magnesium	25.700	32.000	32.900	19.400	23.800
Nickel	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate	1.24	<0.02	<0.02	2.84	<0.02
Lead	<0.005	0.007	<0.005	<0.005	<0.005
Phosphorus	<0.02	<0.02	<0.02	<0.02	<0.02

Table 3.4 Cont.

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS OUTSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	MW-18s	MW-18d	MW-18d (DUP)	MW-20s	MW-20d
Selenium	<0.0025	<0.0025	<0.0025	<0.005	<0.0025
Zinc	<0.020	<0.020	<0.020	<0.020	<0.020
T.D.S.	383	368	408	376	400
C.O.D.	<10	<10	<10	<10	<10
pH (1)(2)	7.37	7.36	7.36	7.45	7.36
Conductivity(1)(3)	560	570	590	551	561
T.O.C. (1)	2.00	<1.00	<1.00	<1.00	2.25
T.O.X. (1)	24	18	25	22	<10
Coliform (7)	<2	26	14	3	<2
Alachlor (4)	<2.0	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0	<1.0
2,4,5-TP- Silvex(4)	<0.5	<0.5	<0.5	<0.5	<0.5
Gross Alpha (5)	<1	<1	<1	<1	<1
Gross Beta (5)	7	12	14	21	4
Radium 226 (5)	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium (5)	<1.0	<1.0	<1.0	<1.0	<1.0

Table 3.4 Cont.

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS OUTSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	SW-2	OS-1	OS-2	OS-3
Chloride	44.0	22.0	19.0	24.0
Iron	<0.050	<0.050	<0.050	1.540
Manganese	0.151	<0.015	<0.015	0.389
Phenols	<0.005	<0.005	0.016	<0.005
Sodium	19.200	14.300	10.100	10.600
Sulfate	76.0	60.0	52.0	68.0
Silver	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.0025	<0.0025	<0.0025	<0.0025
Barium	<0.200	<0.200	<0.200	<0.200
Calcium	109.000	93.300	89.200	109.000
Cadmium	<0.001	<0.001	<0.001	<0.001
Cyanide	<0.005	<0.005	<0.005	<0.005
Chromium				
-Total	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025
Fluoride	0.17	0.22	0.17	0.16
Mercury	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	3.100	3.190	3.160	2.810
Magnesium	28.500	21.700	20.900	23.100
Nickel	<0.005	<0.005	0.006	<0.005
Nitrate	1.93	2.04	2.21	<0.02
Lead	<0.005	<0.005	<0.005	<0.005
Phosphorus	<0.02	<0.02	<0.02	<0.02

Table 3.4 Cont.

SAND AND GRAVEL AQUIFER
GROUNDWATER SAMPLING RESULTS OUTSIDE PRODUCTION AREA (FMPC)
(All results in ppm except as noted)

NAME	SW-2	OS-1	OS-2	OS-3
Selenium	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	0.066	0.359	0.095	0.022
T.D.S.	531	444	384	444
C.O.D.	<10	20	<10	15
pH (1)(2)	7.38	7.49	7.56	7.44
Conductivity (1)(3)	690	580	530	600
T.O.C. (1)	<1.00	<1.00	<1.00	<1.00
T.O.X. (1)	<10	<10	<10	39
Coliform (7)	<2	1	29	<2
Alachlor (4)	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0
2,4,5-TP- Silvex	<0.5	<0.5	<0.5	<0.5
Gross Alpha (5)	1	59	59	10
Gross Beta (5)	17	104	99	23
Radium 226 (5)	<1	<1	1	<1
Uranium (5)	0.0	396.0	319.0	204.0

Table 3.5
Water Quality Standards

	Primary (9)	Secondary (10)	Recommended (10)
Chloride	- - -	250	- - -
Iron	- - -	0.3	- - -
Manganese	- - -	0.05	- - -
Phenols	- - -	- - -	0.001
Sodium	- - -	- - -	- - -
Sulfate	- - -	250	- - -
Silver	0.05	- - -	- - -
Arsenic	0.05	- - -	- - -
Barium	1.0	- - -	- - -
Calcium	- - -	- - -	- - -
Cadmium	0.010	- - -	- - -
Cyanide	- - -	- - -	0.05
Chromium			
- Total	0.05	- - -	- - -
- Hexavalent	- - -	- - -	- - -
Copper	- - -	1.0	- - -
Fluoride	1.4-2.4	- - -	- - -
Mercury	0.002	- - -	- - -
Potassium	- - -	- - -	- - -
Magnesium	- - -	- - -	- - -
Nickel	- - -	- - -	- - -
Nitrates	10.0	- - -	- - -
Lead	0.05	- - -	- - -
Phosphorous, Total	- - -	- - -	- - -
Selenium	0.01	- - -	- - -
Zinc	- - -	5.0	- - -
T.D.S.	- - -	500	- - -
C.O.D.	- - -	- - -	- - -
pH-lab (2)	- - -	6.5-8.5	- - -
Conductivity-lab (3)	- - -	- - -	- - -
T.O.C.	- - -	- - -	- - -
T.O.X.	- - -	- - -	- - -
Coliform (7)	1	- - -	- - -
Lindane (4)	4	- - -	- - -
Endrin (4)	0.2	- - -	- - -
Methoxychlor (4)	100	- - -	- - -
Toxaphene (4)	5	- - -	- - -
2,4-D (4)	10	- - -	- - -
2,4,5-TP, Silvex (4)	10	- - -	- - -
Gross Alpha (5)	15	- - -	- - -
Gross Beta (5)	30 (8)	- - -	- - -
Radium, Total (5)	5 (6)	- - -	- - -

Table 3.5 Cont.

U.S. EPA NATIONAL PRIMARY DRINKING WATER REGULATIONS
VOLATILE ORGANIC COMPOUNDS

Maximum Contaminant Levels*

PARAMETER	MAXIMUM CONTAMINANT LEVEL (mg/l)
Benzene	0.005
Carbon Tetrachloride	0.005
1,2-Dichloroethane	0.005
Trichloroethylene	0.005
Para-Dichlorobenzene	0.075
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.20
Vinyl Chloride (Chloroethene)	0.002

*As reported in the Federal Register, July 8, 1987. The notice applies to all community water systems and non-transient non-community water systems (NTNCWS). NTNCWS are those which regularly serve the same 25 or more persons at least six months per year.

NOTES FOR TABLE 3.1 THROUGH 3.5

(DUP) Results from replicate sample

(1) Average of four tests

(2) pH results in standard units

(3) Conductivity results in umhos/cm

(4) Concentrations reported in ppb (ug/l)

(5) Results in pCi/l

(6) Standard is for Radium -226 Plus Radium -228

(7) Reported in colony per 100 ml

(8) Maximum Permissible Activity taken from World Health Organization, 1970 European Standards. National Primary Drinking Water Regulation for gross beta is 4 mR/year.

(9) Taken from 40 CFR Part 141 National Interim Primary Drinking Water Regulations - Subpart B - Maximum Contaminant Levels, July 1, 1984.

(10) Taken from 40 CFR Part 143 National Secondary Drinking Water Regulations - Section 143.3 - Secondary Maximum Contaminant Levels.

TABLE 3.6

RESULTS OF QA/QC ANALYSIS

INDICATORS QC #1 mg/l	REPORTED VALUE	ACTUAL VALUE	DIFFERENCE (Reported-Actual
COD	14	14.9	-0.9
TOC	6	6.12	-0.12
	Average Difference =		-0.51

INDICATORS QC #2 mg/l	REPORTED VALUE	ACTUAL VALUE	DIFFERENCE (Reported-Actual
COD	224	218	6.0
TOC	101	91.8	9.2
	Average Difference =		7.6

METALS QC #3 mg/l	REPORTED VALUE	ACTUAL VALUE	DIFFERENCE (Reported-Actual
Nickel	0.103	0.100	0.003
Lead	0.100	0.100	0.000
Arsenic	0.094	0.100	-0.006
Selenium	0.025	0.025	0.000
Cadmium	0.022	0.025	-0.003
Chromium	0.106	0.100	0.006
Mercury	0.0057	0.005	0.0007
Manganese	0.113	0.100	0.013
Copper	0.105	0.100	0.005
Iron	0.092	0.100	-0.008
Zinc	0.092	0.100	-0.008
	Average Difference =		0.00025

TABLE 3.6 (Cont'd.)

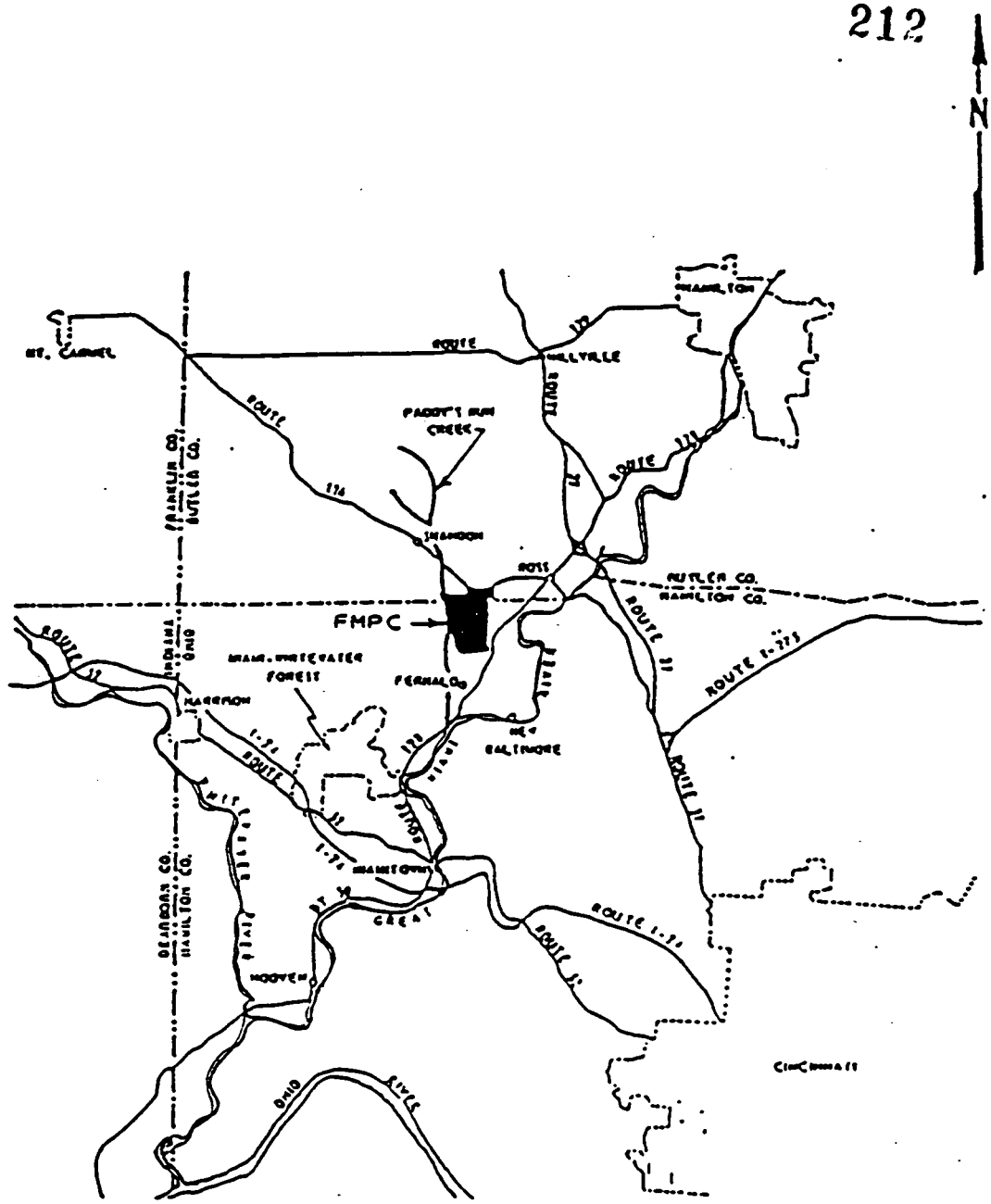
RESULTS OF QA/QC ANALYSIS

METALS QC #4 mg/l	REPORTED VALUE	ACTUAL VALUE	DIFFERENCE (Reported-Actual
Silver	0.009	0.010	-0.001
	Average Difference =		-0.001

PURGEABLES QC #5 ug/l	REPORTED VALUE	ACTUAL VALUE	DIFFERENCE (Reported-Actual
M-Dichlorobenzene	88.9	100	-11.1
P-Dichlorobenzene	88.8	100	-11.2
O-Dichlorobenzene	88.6	100	-11.4
Hexachlorobutadiene	8.8	10	-1.2
2-Chloronaphthalene	85.8	100	-14.2
	Average Difference =		-9.82

PURGEABLES QC #6 ug/l	REPORTED VALUE	ACTUAL VALUE	DIFFERENCE (Reported-Actua
M-Dichlorobenzene	99.2	100	-0.8
P-Dichlorobenzene	99.4	100	-0.6
O-Dichlorobenzene	99.0	100	-1.0
1,2,4 Trichlorobenzene	95.3	100	-4.7
	Average Difference =		-1.8

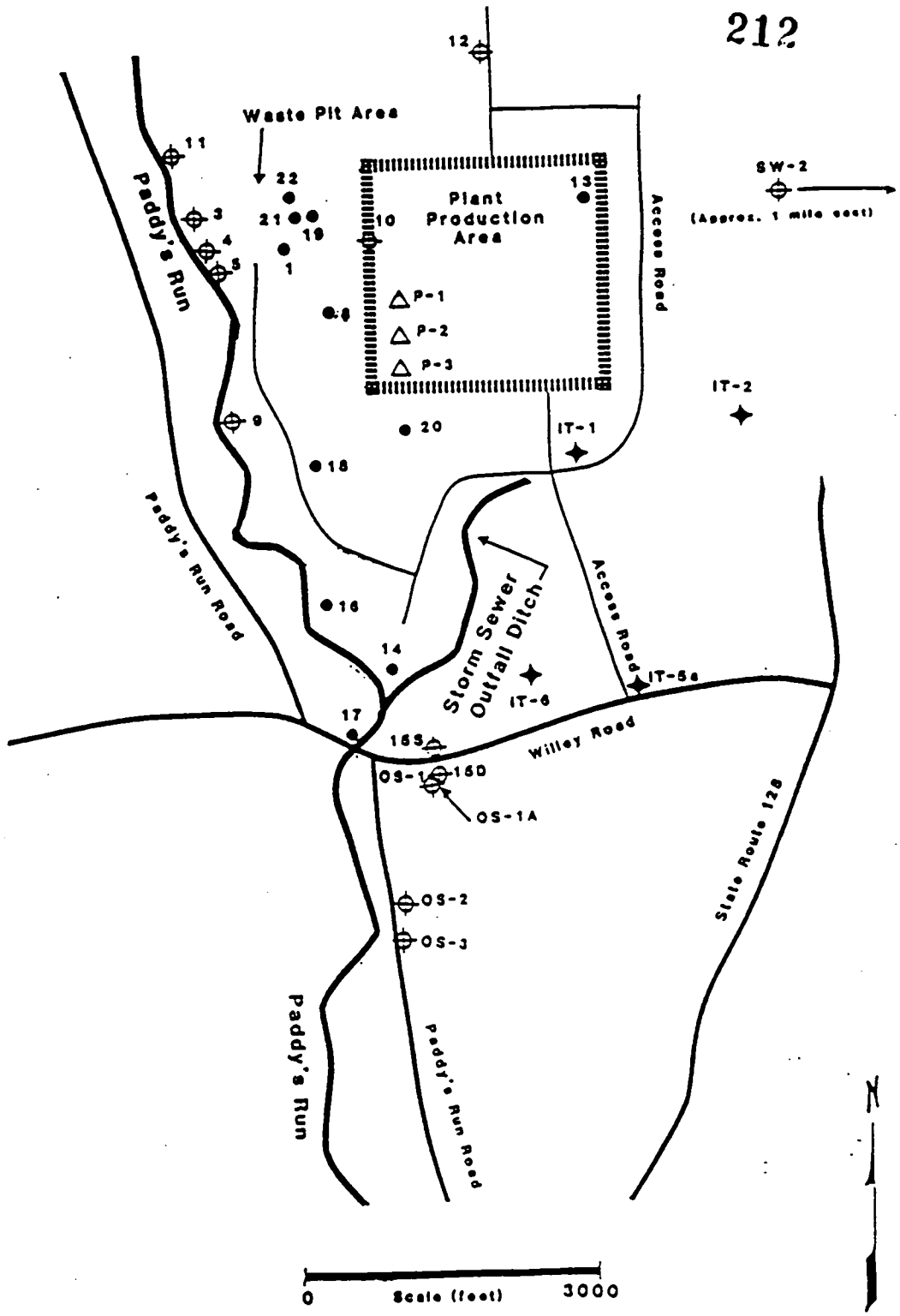
PURGEABLES QC #7 ug/l	REPORTED VALUE	ACTUAL VALUE	DIFFERENCE (Reported-Actua
Hexachloroethane	10.4	10	0.4
Hexachlorobutadiene	10.2	10	0.2
2-Chloronaphthalene	101.0	100	1.0
Hexachlorobenzene	10.2	10	0.2
	Average Difference =		0.45



SITE LOCATION MAP

48

Figure 1-1



Explanation:

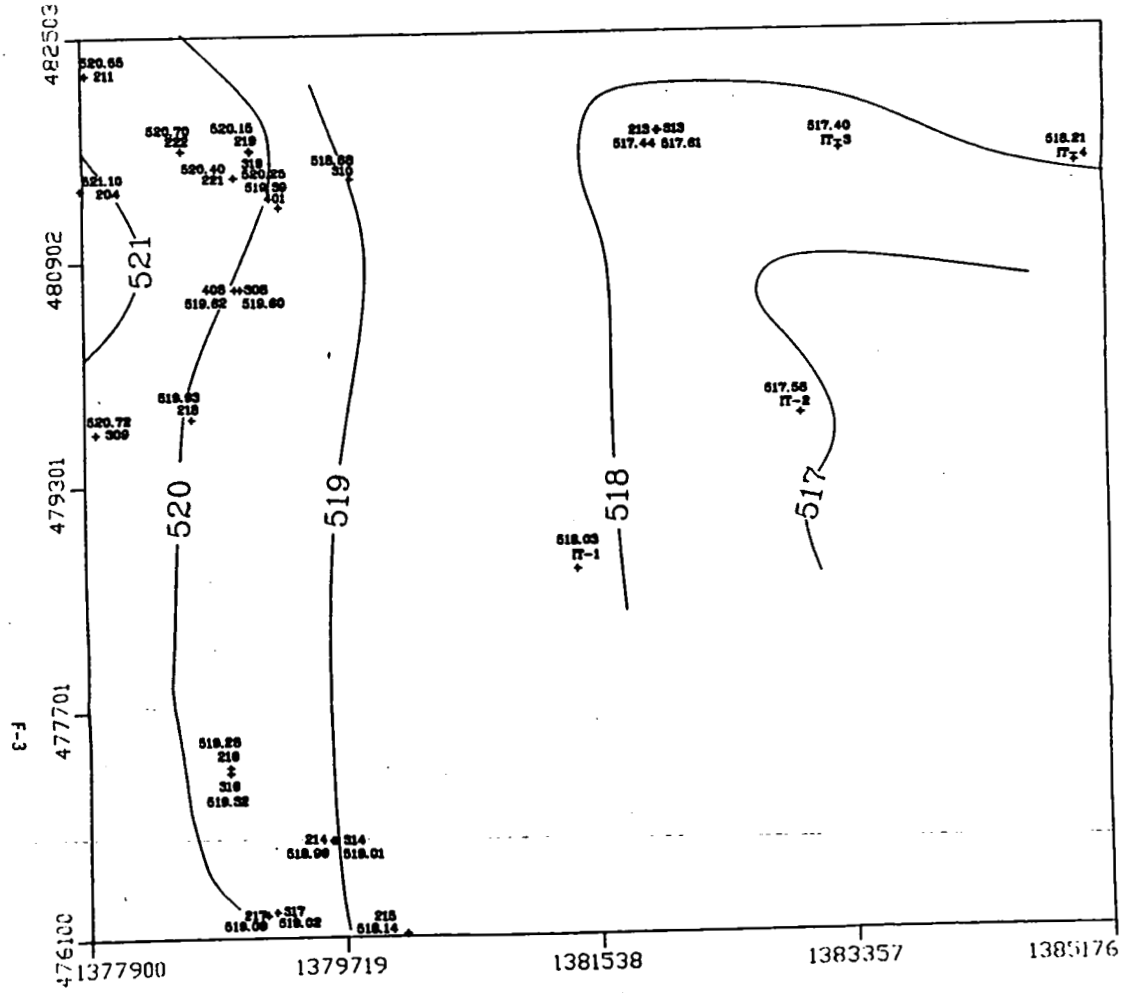
- Single Well Location
- Cluster Well Location
- Production Well Location
- IT Well Location

WELL LOCATION

Figure 2-1

Department of Energy
FMPC
Pieziometric Surface Contour Map

RCRA Ground Water Monitoring Report
Round 6
November, 1987



Water Table Elevation – Upper Sand and Gravel

Contour interval = 1 foot

Figure 2–2

Fernald RI/FS
General Monitoring Well Depths and Screen Locations

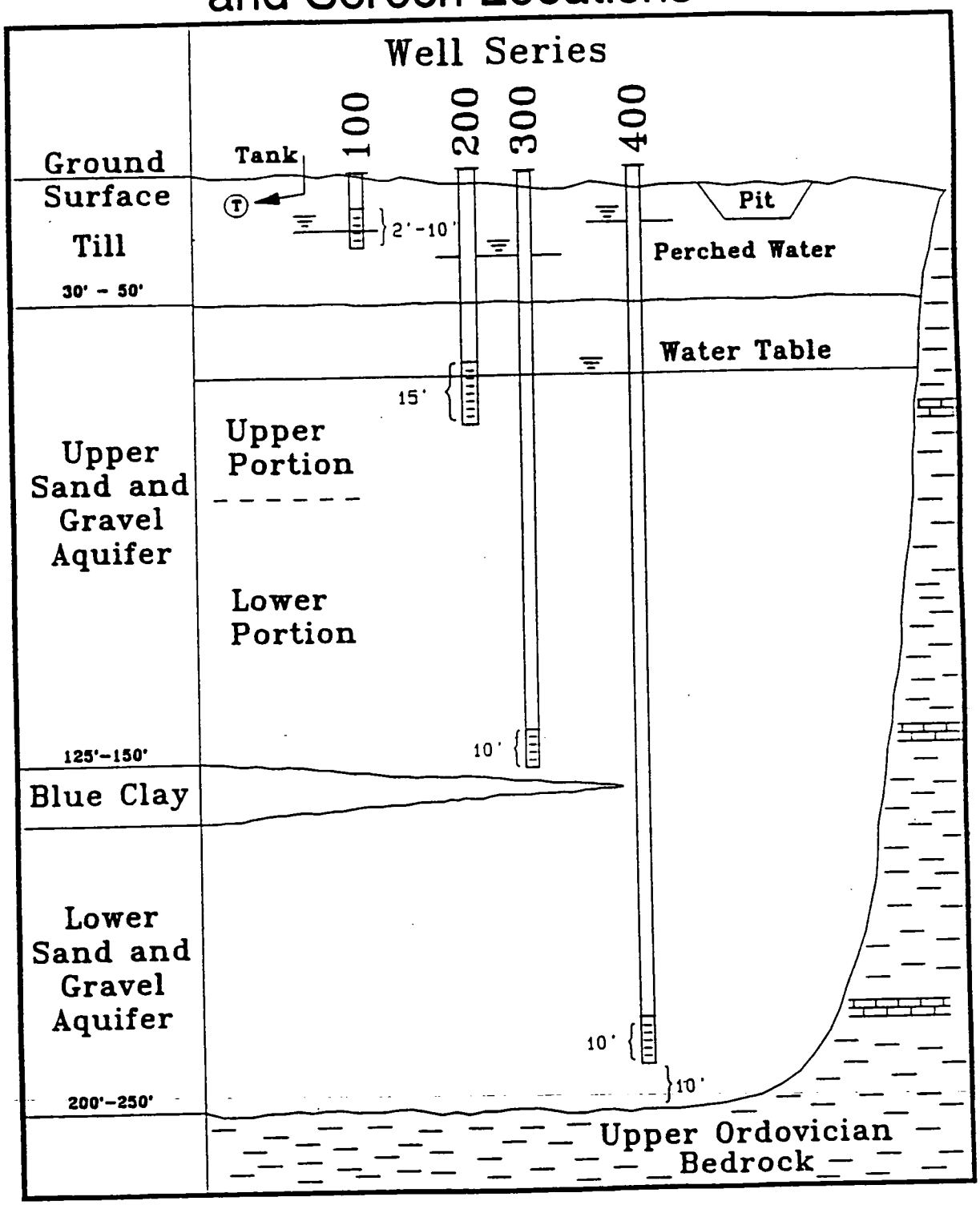


Figure 2-3

Appendix A

RCRA Ground Water Sampling Procedures Manual

RCRA GROUND WATER Sampling Procedures Manual

Fernald Feed Materials Production Center

TABLE OF CONTENTS

PROCEDURE	TITLE
ASI-9801	Methodology for Decontamination of Ground Water Sampling Equipment for the RCRA Ground Water Sampling Assessment at the Fernald Feed Materials Production Center (FMPC)
ASI-9802	Methodology to Conduct RCRA Ground Water Sampling for the RCRA Ground Water Sampling Assessment at the Fernald Feed Materials Production Center (FMPC)
ASI-9803	Methodology for Field Meter Calibration for use in RCRA Ground Water Sampling for the RCRA Ground Water Sampling Assessment at the Fernald Feed Materials Production Center (FMPC)
ASI-9804	Methodology for Performing the Health and Safety Sample Container Activity Determination for Samples Collected for the RCRA Ground Water Sampling Assessment at the Fernald Feed Materials Production Center (FMPC)
ASI-9805	Methodology for Sample Packaging and Shipping for use in the RCRA Ground Water Sampling Assessment at the Fernald Feed Materials Production Center (FMPC)

TITLE: Methodology for the Decontamination of the Ground Water Sampling Equipment for the RCRA Ground Water Sampling Assessment at the Fernald Feed Materials Production Center (FMPC)

1.0 PURPOSE

This procedure provides the methodology to decontaminate the ground water sampling equipment to be used in the RCRA ground water sampling assessment to be conducted at the FMPC. The sampling equipment includes Teflon bailers, stainless steel submersible pump, and the water depth indicator.

2.0 SCOPE

This procedure applies to decontamination of sampling equipment to be used for ground water sampling for the FMPC ground water assessment.

3.0 RESPONSIBILITY

3.1 It is the responsibility of the Team Leader to see that this procedure is followed during the field activities and that all personnel are experienced with this procedure and with the field equipment.

4.0 REQUIREMENTS

4.1 Equipment and Materials

The following is a listing of equipment and materials for the decontamination of ground water sampling equipment for the ground water assessment at the FMPC.

- Decontamination basins
- Deionized water
- Paper towels
- Methanol
- Plastic bags
- Spray bottles
- Field logbook
- Plastic sheeting

5.0 PROCEDURE

5.1 The sampling equipment shall be decontaminated at designated sites.

5.2 When the equipment is removed from the wells, care will be

taken to avoid contact of the equipment and the ground surface.

5.3 The equipment shall be cleaned with deionized water, a methanol rinse, and followed by two deionized water rinses.

5.4 A rinsate sample will be collected from the final deionized water rinse to perform the required equipment rinsate analysis.

5.5 The rinsate sample shall be collected in the appropriate containers with the necessary preservatives.

5.6 The rinsate sample will be analyzed for the following parameters:

- Radionuclides
- HSL-Organic Volatiles
- HSL-Inorganic Metals, Cr^{+6}, HSL Semi-volatile Organics
- Total Coliform
- Cyanide
- Phenols/Nitrates
- Mercury, other metals

5.7 The following is the proper procedure for packaging, labeling, and documentation of the rinsate sample:

- Screw the cap onto the sample bottle, and seal with custody tape
- Complete a sample label and attach it to the sample bottle
- Place the sample bottle into a plastic bag to minimize potential for contamination or spillage
- Complete the Sample Collection Log
- Complete the Chain-of-Custody Record
- Complete the Request for Analysis form

5.8 Each piece of sampling equipment shall have a unique identification number assigned to it. Record the identification numbers of the equipment decontaminated and the rinsate sample number in the field logbook.

TITLE: Methodology to Conduct RCRA Ground Water Sampling for the RCRA Ground Water Sampling Assessment at the Fernald Feed Materials Production Center (FMPC)

1.0 PURPOSE

The procedure provides the methodology to sample 41 RCRA wells at the FMPC. The sampling equipment includes stainless steel-teflon, submersible, centrifugal pumps and teflon bailers.

2.0 SCOPE

This procedure applies to the collection of RCRA ground water samples to be used for the RCRA Ground Water Sampling Assessment.

3.0 RESPONSIBILITY

3.1 It is the responsibility of the RCRA Ground Water Sampling Team Leader or designee to make sure that this procedure is followed during the field program.

3.2 It is the responsibility of the RCRA Ground Water Sampling Team Leader or designee to make sure that the personnel performing the task are experienced with this procedure and use of the sampling equipment.

3.3 It is the responsibility of the individuals performing the task to follow this procedure and document unusual occurrences.

4.0 REFERENCES

4.1 FMPC RI/FS QAPP Section 6.1 Ground Water Sampling Techniques

5.0 REQUIREMENTS

5.1 Equipment and Materials

5.1.1 Methodology to Conduct RCRA Ground Water Sampling for the RCRA Ground Water Sampling Assessment

5.1.2 Forms

- Tailgate Safety Meeting
- Field Activity Daily Log
- Ground Water Sample Collection Log
- Water Quality Field Collection Report
- Sample Labels
- Chain of Custody Record

o Request for Analysis

5.1.3 Custody tape
5.1.4 Field logbook
5.1.5 Plastic ground sheets
5.1.6 Latex gloves
5.1.7 Gallon size ziplock bags
5.1.8 Eight-gallon polyethylene bags
5.1.9 Paper towels
5.1.10 Five-gallon container
5.1.11 pH meter
5.1.12 Specific conductance meter
5.1.13 Thermometer
5.1.14 Dissolved oxygen meter
5.1.15 Water depth indicator
5.1.16 Tape measure graduated to 0.01 feet
5.1.17 Labels
5.1.18 Clear protective tape

6.0 PROCEDURE

6.1 Collect required supplies and equipment, including portable radio, for transport into field.

6.2 Arrange access to selected well sites, i.e. escorts, keys

6.3 Arrive on location, layout plastic ground sheet and set up equipment.

6.4 Lower water depth indicator into well, wipe cord with a deionized water saturated towel as it is lowered down the well. Note depth of water as measured from the top of the notched well casing to 0.01 feet. Remove from well. Record measured water depth on Field Collection Report.

6.5 Begin well purge, measure pump rate using 5-gallon container. Calculate the well volume and the volume to evacuate the well 3 to 5 times. Measure temperature pH, specific conductance and % dissolved oxygen, and note in Field Collection Report.

6.6 Purge the well. The purge fluid in the production and waste pit areas will be contained by the FMPC Sewage Treatment personnel and treated and disposed of properly by them. Outside of these areas, the purge water will be pumped onto the ground, away from Paddy's Run.

6.7 If the well is purged dry, the well will be sampled

following recovery. The time required for well recovery will be noted in the Field Collection Report.

6.8 The temperature, pH, specific conductance, % dissolved oxygen will be measured and recorded on Field and Collection Report.

6.9 The volatile organic compound samples will be collected first, followed by acid/base-neutral compounds and pesticide/PCB, dissolved metals, general chemistry, and radionuclide samples. The samples will be bailed with a teflon bailer where possible, and collected via the pump when bailing is not possible. The collection method used will be noted in the Field Collection Report.

6.10 When the submersible pump is removed from the well, care will be taken to prevent the equipment from contacting the ground. The pump and tubing will be laid on clean plastic ground sheeting until decontaminated and stored.

6.11 The samples will be preserved in the field and kept cool ($4^{o}C$) during shipping.

6.12 The samples will be properly labeled and appropriate Chain-of-Custody, Field Collection Report, Sample Collection Log, and Request for Analysis forms will be filled out for each sample.

6.13 During ground water sampling, duplicate samples will be collected every tenth well, and a triplicate every twentieth well for QA/QC purposes. Equipment and trip blanks will also be routinely collected and analyzed. Trip blanks are used to determine if contamination is introduced from the atmosphere or sample containers. Equipment blanks are used to determine if contamination is introduced from the sample collection equipment.

6.14 To provide for an accurate analysis, standard laboratory blanks, duplicates and spiked samples will be submitted for calibration and identification of potential matrix interference. The sampling plan will utilize standard procedures (e.g., QC charts) to monitor and document performance and implement an effective program to resolve testing problems (e.g., instrument maintenance, operator training). Data from QC samples (e.g., blanks, duplicates, spiked samples) will be used as a measure of performance or as an indicator of potential sources of cross-contamination, <u>but will not be used to alter or correct</u> analytical data. These data will be submitted with the ground water

monitoring sample results. Laboratory QA/QC checks and frequencies are described in more detail in Section 11.0 of the QAPP.

6.15 Ground water samples will be identified by the monitoring well number and a sample number as determined by the quality assurance officer. Details of the sample numbering system were provided in the Preface to the Sampling Plan (Vol. I).

6.16 Water quality samples collected from ground water monitoring wells will be shipped off-site to laboratory locations. Proper handling and containerization will be done to make sure sample integrity is maintained throughout the shipping process. Samples will be shipped following the procedures and Chain-of-Custody guidelines described in the QAPP.

A summary of containers and sample preservatives required for samples being analyzed is presented in Table I. Chain-of-Custody documentation will be completed prior to shipping samples.

6.17 It is necessary to analyze all ground water samples for a full suite of radiological parameters and a more focused set of general water quality indicators to achieve the overall study objectives. All ground water samples will be analyzed for a set of radiological parameters that include radionuclides or materials handled at the FMPC. These parameters, which are consistent with those being tested under the ongoing RCRA monitoring program, include:

- Potassium 40
- Total Uranium
- Radium 226
- Radium 228
- Technetium 99
- Thorium 228
- Thorium 230
- Thorium 232
- Cesium 137
- Strontium 90
- Ruthenium 106
- Neptunium 237
- Plutonium 238
- Plutonium 239
- Plutonium 240

All samples will also be analyzed for the following parameters that are being used as indicators of drinking water quality:

- TOC
- Arsenic
- Barium
- Cadmium
- Chromium (Hexavalent,Total)
- Fluoride
- Lead
- Mercury
- Nitrate
- Selenium
- Silver
- pH
- Specific Conductance
- Chloride
- Iron
- Manganese
- Phenols (total)
- Sodium
- Sulfate
- Gross alpha
- Gross beta
- Pesticides/PCB's

TABLE I

GROUND WATER SAMPLE CONTAINERS AND PRESERVATIVES

ANALYSIS	SAMPLE CONTAINER	PRESERVATIVE
HSL Volatile Organics	40 ml Glass w/Teflon-lined Silicon Rubber Septum	Cool, 4°C
HSL Organics (semi-volatiles) HSL Inorganics (metals) Cr^{+6}	4 liter Amber Glass	Cool, 4°C
Phenols/Nitrates	500 ml Amber Glass	pH <2, H_2SO_4, Cool, 4°C
Cyanide	500 ml Plastic	pH >12, NaOH, Cool, 4°C
Radiological	1 gallon Plastic	pH <2, HNO_3
Coliform, total	125 ml Plastic	Cool, 4°C
Mercury, other Metals	1 liter Plastic	pH <2, HNO_3

TITLE: Methodology for Field Meter Calibration for use in RCRA Ground Water Sampling for the RCRA Ground Water Sampling Assessment at the Fernald Feed Materials Production Center (FMPC)

1.0 PURPOSE

This procedure provides calibration instructions for the Orion Research Model 211 pH Meter, Soiltest 438-000 Specific Conductance Meter, and the YSI Dissolved Oxygen Meter.

2.0 SCOPE

This procedure applies to the field use of the Orion Research Model 211 pH Meter, Soiltest 438-000 Specific Conductance Meter, and the YSI Dissolved Oxygen Meter to obtain water quality field measurements.

3.0 RESPONSIBILITY

It is the responsibility of the Team Leader or designee to see that this procedure is followed in the field and that all personnel are experienced with this procedure and the equipment.

4.0 REFERENCES

4.1 Orion Research Model 211 pH Meter Instruction Manual

4.2 Soiltest 438-000 Specific Conductance Meter Instruction Manual

4.3 YSI Dissolved Oxygen Meter Instruction Manual

5.0 REQUIREMENTS

5.1 Equipment and Materials

5.1.1 Orion Research Model 211 pH Meter

5.1.2 Soiltest 438-000 Specific Conductance Meter

5.1.3 YSI Dissolved Oxygen Meter

5.1.4 Celsius Thermometer

6.0 PROCEDURE

6.1 The following will be used for calibration and operation of the field instruments.

METER	PROCEDURE
pH	Set temperature knob to measured water temperature (^{o}C). Place probe into 7.00 and 4.00 buffers and calibrate LED readout to each Solution Value. Rinse probe with DI water and place clean probe into field sample, document reading on the Field Collection Report.
Specific Conductance	Set meter dial to measured water temperature. Submerse probe into 74 S.C. solution and calibrate LED readout to solution value. Rinse probe with DI water and place probe into field sample, take reading and document on the Field Collection Report.
Dissolved Oxygen	Set zero end of dial to zero with zero knob. Set full scale end to high end value with full scale knob. Calibrate water temperature dial using measured water temperature. Set dial to calibrate elevation and O_2. Calibrate elevation on elevation scale with calibration knob. Turn knob to read O_2 and read percent Oxygen. Record value on the Field Collection Report.

Note: All meters are to be calibrated before each use.

pH Certified Buffer Solutions used are:

pH 4.00 $\pm$ 0.01 @ 25°C, Lot #186004, Expires 1988
pH 7.00 $\pm$ 0.01 @ 25°C, Lot #186306-24, Expires 1988
Both Lots manufactured by Fisher Scientific Co.

Dissolved Oxygen Standard consists of a 50% KCl solution in dionized water, contained within the probe.

TITLE: Methodology for Performing the Health and Safety Sample Container Activity Determination for Samples Collected for the RCRA Ground Water Sampling Assessment at the Fernald Feed Materials Production Center (FMPC)

1.0 PURPOSE

This procedure provides instruction for the operation of the Eberline BC-4 Beta Counter.

2.0 SCOPE

This procedure applies to the routine use of the Eberline BC-4 Beta Counter to determine removable beta/gamma contamination by smear survey techniques. Smear surveys are to be conducted on containers used in the Waste Storage Area.

3.0 RESPONSIBILITY

3.1 It is the responsibility of the Project Health and Safety Officer, or his designee, to make sure that this procedure is followed during the field program phase.

3.2 It is the responsibility of the Site Health and Safety Officer, or his designee, to delegate the performance of this procedure to personnel that are experienced with this procedure.

3.3 It is the responsibility of the person performing this procedure to follow it and report abnormal occurrences or results to the Site Health and Safety Officer, or his designee, immediately.

4.0 REFERENCES

4.1 Eberline BC-4 Counter Instruction Manual.

5.0 REQUIREMENTS

5.1 Equipment

5.1.1 Eberline BC-4 Beta Counter

5.2 Material

5.2.1 Beta/gamma calibration source.

6.0 PROCEDURE

6.1 Background determination

6.1.1 Set the count time to 1 minute by placing the Timer switches to 1 and X1 and the Count Mode switch to "Timed".

6.1.2 Verify that the sample holder is empty by pulling the sample holder slide out until it stops. Reinsert the sample holder into the Counter.

6.1.3 Depress the "RESET-START" button to begin the count. The count will automatically stop at the end of 1 minute.

6.1.4 Record the background counts per minute (cpm) from the scaler in the Counter Logbook.

6.2 Efficiency Determination

6.2.1 Verify that the count time is set for 1 minute as described in 6.1.1.

6.2.2 Fully extend the sample holder slide and place the beta/gamma calibration source into the center of the sample holder. Carefully reinsert the sample holder slide into the Counter.

6.2.3 Depress the "RESET-START" button to begin the count. The count will automatically stop at the end of 1 minute.

6.2.4 Record the Source counts per minute (cpm) from the scaler in the Counter Logbook. Remove the Calibration Source.

6.2.5 Determine the Counter Efficiency as described in Appendix 10.1.

6.3 Sample Activity Determination

6.3.1 Verify that the count time is set for 1 minute as described in 6.1.1.

6.3.2 Fully extend the sample holder slide and place the sample (smear) into the center of the sample holder. Carefully reinsert the sample holder slide into the Counter.

6.3.3 Depress the "RESET-START" button to begin the count. The count will automatically stop at the end of 1

minute.

6.3.4 Record the sample counts per minute (cpm) from the scaler in the Counter Logbook. Remove the sample from the Counter.

6.3.5 Determine the Sample Activity as described in Appendix 10.1.

6.3.6 Record the Sample ID Number and Activity on the Sample Log Sheet.

7.0 PRECISION AND ACCURACY

None

8.0 QUALITY ASSURANCE PROVISIONS

8.1 Responsibility for Inspection

8.1.1 The Project Health and Safety Officer and Q.A. Staff shall perform periodic audits to verify that this procedure is being followed.

9.0 CALCULATIONS

9.1 See Appendix 10.1

10.0 APPENDICES

10.1 Eberline BC-4 Beta Counter: Calculation of Counter Efficiency and Sample Activity.

10.2 Sample Log Sheet.

APPENDIX 10.1

EBERLINE BC-4 BETA COUNTER
CALCULATION OF COUNTER EFFICIENCY AND SAMPLE ACTIVITY

CALCULATION OF COUNTER EFFICIENCY

$$\frac{\text{(Calibration Source cpm - Background cpm)}}{\text{Source Activity dpm}} = \text{Counter Efficiency}$$

(disintegrations per minute)

CALCULATION OF SAMPLE ACTIVITY

$$\frac{\text{(Sample cpm - Background cpm)}}{\text{Counter Efficiency}} = \text{Sample Activity (dpm)}$$

1.0 PURPOSE

This procedure provides instructions for the operation of the Eberline SAC-4 Scintillation Alpha Counter.

2.0 SCOPE

This procedure applies to the routine use of the Eberline SAC-4 Scintillation Alpha Counter to determine removable alpha contamination by smear survey techniques. Smear surveys are to be conducted on containers used in the Waste Storage Area.

3.0 RESPONSIBILITY

3.1 It is the responsibility of the Project Health and Safety Officer, or his designee, to make sure that this procedure is followed during the field program phase.

3.2 It is the responsibility of the Site Health and Safety Officer, or his designee, to delegate the performance of this procedure to personnel that are experienced with this procedure.

3.3 It is the responsibility of the person performing this procedure to follow it and report any abnormal occurrences or results to the Site Health and Safety Officer, or his designee, immediately.

4.0 REFERENCES

4.1 Eberline SAC-4 Scintillation Alpha Counter Instruction Manual.

5.0 REQUIREMENTS

5.1 Equipment

5.1.1 Eberline SAC-4 Scintillation Alpha Counter

5.2 Material

5.2.1 Alpha Calibration Source

6.0 PROCEDURE

6.1 Background Determination

6.1.1 Set the count time to 1 minute by placing the Minute switch to 1, the Multiplier switch to X1 and the

Count Mode switch to "Timed".

6.1.2 Verify that the sample holder is empty by pulling the sample holder slide out until it stops. Reinsert the sample holder into the Counter.

6.1.3 Depress the "RESET-START" button to begin the count. The count will automatically stop at the end of 1 minute.

6.1.4 Record the Background counts per minute (cpm) from the scaler in the Counter Logbook.

6.2 Efficiency Determination

6.2.1 Verify that the count time is set for 1 minute as described in 6.1.1.

6.2.2 Fully extend the sample holder slide and place the Alpha calibration source into the center of the sample holder. Carefully reinsert the sample holder slide into the Counter.

6.2.3 Depress the "RESET-START" button to begin the count. The count will automatically stop at the end of 1 minute.

6.2.4 Record the Source counts per minute (cpm) from the scaler in the Counter Logbook. Remove the Calibration Source.

6.2.5 Determine the Counter Efficiency as described in Appendix 10.1.

6.3 Sample Activity Determination

6.3.1 Verify that the count time is set for 1 minute as described in 6.1.1.

6.3.2 Fully extend the sample holder slide and place the sample (smear) into the center of the sample holder. Carefully reinsert the sample holder slide into the Counter.

6.3.3 Depress the "RESET-START" button to begin the count. The count will automatically stop at the end of 1 minute.

6.3.4 Record the Sample counts per minute (cpm) from the scaler in the Counter Logbook. Remove the sample

from the Counter.

6.3.5 Determine the Sample Activity as described in Appendix 10.1.

6.3.6 Record the Sample ID Number and Activity on the Sample Log Sheet.

7.0 PRECISION AND ACCURACY

None

8.0 QUALITY ASSURANCE PROVISIONS

8.1 Responsibility for Inspection

8.1.1 The Project Health and Safety Officer and Q.A. Staff shall perform periodic audits to verify that this procedure is being followed.

9.0 CALCULATIONS

9.1 See Appendix 10.1

10.0 APPENDICES

10.1 Eberline SAC-4 Scintillation Alpha Counter: Calculation of Counter Efficiency and Sample Activity.

10.2 Sample Log Sheet.

APPENDIX 10.1

EBERLINE SAC-4 SCINTILLATION ALPHA COUNTER
CALCULATION OF COUNTER EFFICIENCY AND SAMPLE ACTIVITY

CALCULATION OF COUNTER EFFICIENCY

$$\frac{\text{(Calibration Source cpm - Background cpm)}}{\text{Source Activity dpm}} = \text{Counter Efficiency}$$

CALCULATION OF SAMPLE ACTIVITY

$$\frac{\text{(Sample cpm - Background cpm)}}{\text{Counter Efficiency}} = \text{Sample Activity (dpm)}$$

APPENDIX 10.2

SAMPLE LOG SHEET

Smear & Sample Survey

Smear or Sample #	Location	Date	DPM Alpha	DPM Beta/Gamma

1.0 PURPOSE

This procedure provides instruction for the operation of the Ludlum Model 12 portable survey meter.

2.0 SCOPE

This procedure applies to the Ludlum Model 12 Portable Survey Meter using either, the Model 44-9 Pancake G-M detector or, the Model 43-5 alpha scintillation detector. Since these detectors are operated at different high voltage settings and are calibrated for a specific survey meter, they cannot be interchanged without re-calibration and readjustment of the high voltage settings. The surveys are to be conducted on sample containers prior to shipping.

3.0 RESPONSIBILITY

3.1 It is the responsibility of the Site Health and Safety Officer, or his designee, to make sure that this procedure is followed during the field program phase.

3.2 It is the responsibility of the Site Health and Safety Officer, or his designee, to delegate the performance of this procedure to personnel that are experienced with this procedure and with the Ludlum Model 12 survey meter.

3.3 It is the responsibility of the person performing this procedure to follow it and report any abnormal occurrences or results to the Site Health and Safety Officer, or his designee immediately.

4.0 REFERENCES

4.1 Ludlum Model 12 survey Meter instruction manual.

5.0 REQUIREMENTS

5.1 Equipment

5.1.1 Ludlum Model 12 Portable Survey Meter with Ludlum Model 44-9 Pancake G-M Detector or Model 43-5 alpha scintillation detector

5.2 Materials

5.2.1 Check Source (alpha, beta, gamma)

6.0 PROCEDURE

6.1 Turn Selector switch to "BAT".

6.2 Check needle to make sure it is completely into the "BAT" check scale.

6.3 Turn Selector switch to the "X1" range.

6.4 Turn Audio switch on.

6.5 Put check source next to detector and make sure that the needle moves up and the audio frequency increases.

6.6 Switch Range selector to appropriate Range. Instrument Range selector should be placed on the lowest range setting that will allow the needle to remain on scale. If the needle moves off scale (i.e., full-scale) on the range selected, switch range selector to the next highest range. The actual reading is equal to the scale reading times the Range selector value (e.g., Range selector X10, Meter reading 300 cpm, actual reading is 300 cpm X10 or 3000 cpm).

6.7 Switch "Fast - Slow Switch" to "Fast" for quick meter response when surveying or "Slow" for dampened meter response for accurate background readings.

7.0 PRECISION AND ACCURACY

None

8.0 QUALITY ASSURANCE PROVISIONS

8.1 Responsibility for Inspection

8.1.1 The person performing this procedure shall make sure that all equipment is working properly and all instrument settings are set to the proper position.

8.1.2 Instrument calibration stickers shall be checked by Q.A. Staff periodically to make sure calibration dates have not expired.

8.2 Equipment Monitoring

8.2.1 The user shall check instrument calibration stickers before use to make sure calibration date has not expired and that the proper detector is connected to the instrument.

9.0 CALIBRATIONS

None

10.0 APPENDICES

None

TITLE: Methodology for Sample Packaging and Shipping for use in the RCRA Ground Water Sampling Assessment at the Fernald Feed Materials Production Center (FMPC)

1.0 PURPOSE

This procedure provides the methodology for sample packaging and shipping for the RCRA Ground Water Sampling Assessment at the Fernald Feed Materials Production Center (FMPC)

2.0 SCOPE

This procedure applies to the packaging and shipping of ground water samples collected in the RCRA Ground Water Sampling Assessment.

3.0 RESPONSIBILITY

3.1 It is the responsibility of the Team Leader or designee to make sure that this procedure is followed during the field program.

3.2 It is the responsibility of the Team Leader or designee to make sure that the personnel performing the task are experienced with the procedure and follow it.

4.0 REFERENCES

4.1 FMPC RI/FS QAPP

5.0 REQUIREMENTS

5.1 Equipment and Materials

5.1.1 Sample bottles

5.1.2 Custody seals

5.1.3 Coolers

5.1.4 Blue ice

5.1.5 Chain of custody forms

5.1.6 Request for analysis forms

6.0 PROCEDURE

6.1 Samples must be carefully packaged to avoid breakage or cross-contamination. The following sample packaging procedure will be followed:

6.1.1 Sample container lids are never to be mixed. Sample lids will stay on the original container until time of sampling (only open sample container at the time of sampling). The original sample containers will arrive in the field in packages (e.g., coolers) with custody tape affixed at the appropriate access points. When the sample container packages are received in the field, the chain-of-custody form for shipping the empty containers to the field will be appropriately marked to state if the custody seal was affixed when the package arrived.

6.1.2 After a sample is placed in a plastic/glass container, the sample container will be secured with a custody seal and placed in a plastic bag to minimize the potential for contamination from vermiculite or other packing material. Sample containers may be placed between cardboard inserts and will not need to be placed in plastic bags (e.g., subsurface soil sample jars are placed back in their original shipping container, a cardboard box with cardboard inserts). Upon arrival at the laboratory, the QC Coordinator, or designee, will examine the contents of the shipping container and will document on the chain-of-custody record if any sample containers do not have the custody tape affixed.

6.1.3 Shipping coolers with plastic/glass containers will be filled initially with approximately three (3) inches of vermiculite or suitable substitute (non-combustible, absorbent packing material). Under no circumstances will locally obtained material (sawdust, sand, etc.) be used. Do not use earth or ice as packing materials.

6.1.4 The secured sample containers will be placed in the cooler in such a way so they do not touch one another. Use additional container protection (e.g., new, unused paint cans), if necessary. (Keep cooler closed except when placing sample in cooler).

6.1.5 "Blue ice" or some other artificial icing material will be used. If unavoidable, ice may be used provided that it is placed in a plastic bag. Ice is

not to be used as a substitute for packing material.

6.1.6 Remaining space in the cooler will be filled with inert packing material.

6.1.7 The original chain-of-custody and request-for-analysis records will be placed in a plastic bag and taped to the bottom of the cooler lid. (Chain-of-custody and request-for-analysis procedures are in Section 7.0 of the QAPP).

6.1.8 Shipping containers are to be padlocked or custody-sealed for shipment, as appropriate. The packing custody seal is to consist of filament tape wrapped around the container and a custody seal affixed at appropriate access points. In this way, access to the container can be gained only by cutting the filament tape and breaking the seal.

Shipping cooler containers will be secured by field personnel with a proper custody seal, marked with indelible pen or ink, and addressed to the appropriate laboratory.

Appendix B

Howard Laboratories Inc.

Quality Assurance/Quality Control Program

HOWARD LABORATORIES, INC.
Quality Assurance/Quality Control Program

INTRODUCTION: The Quality Assurance/Quality Control Program (QA/QC) utilized by Howard Laboratories, Inc., is a comprehensive program which utilizes the same concept in each of the different departments within the lab. Each department, however, differs in their QC portion due to the different parameters analyzed in each of the different departments.

Basically, the QA program insures that the chemicals utilized for different standards are consistent and correct within strict limitations. All standards are prepared or purchased such that at least two different sources of standards are utilized to insure the precision of the standard(s) utilized in all analyses. Due to the vast number of parameters which are determined by HLI, not all standards are directly tracable to NBS standards or US EPA standards. All standards which are available from regulatory agencies are utilized within the QA program to insure precision in preparation and control of internally prepared or externally purchased standards. All standards are stored per regulatory recommendations, or where no such recommendations exist, storage has been limited to insure reliability. Further, instruments utilized in the analysis at HLI are calibrated continuously, not just on a day-to-day basis, but throughout the day and throughout the analytical run. These instruments are all state-of-the-art and are automated to reduce human error. Most instruments are controlled by computers. Calibration of these instruments includes the recommendations by the manufacturer and/or regulatory agencies.

The QC program consists of utilizing the standards described above, calibration of instruments on a multi-level calibration curve within a linear range of the instrument [illegible] and comparing this response to previous

For example, the AA Department for metals determines all metals in triplicate. The MS department determines all samples in duplicate and some in quadruplicate, as required by the parameter. Each department has determined the specific acceptance criteria for each parameter. These acceptance criteria have been determined to be those recommended by regulatory agencies where applicable. Where regulatory agencies do not recommend an acceptance criteria, HLI has determined its own acceptance criteria based upon three levels of QC. These include percent recovery of spiked samples, reproducibility of replicate analyses and recovery of known standards. The following are specific QC/QA criteria:

WET CHEMISTRY -

pH	Instrument standardized three to four times daily with commercially purchased buffer standards plus HLI Stds.
Residue	Precision and accuracy data are not applicable to these tests. However, periodic replicates of samples are run for evaluation purposes.
Color	No precision or accuracy data are applicable to this test. Color standards are prepared according to Standard Methods, 15'th edition, method 204.A.
Fecal Coliform	3 dilutions per sample set are employed. Quarterly count comparisons are performed. Records are kept for incubator temperature, pH, autoclave use, and water suitability.
Bromide	One quality control sample per five samples analyzed. Acceptable limits are +/- 10% of true value.
Chloride	One quality control sample per five sam-

	10 - 50	+/- 10
	50 - 125	+/- 5

Cyanides

One quality control sample per five samples analyzed. Acceptable limits:

Conc. Range	% True Value
0.005 - 0.050 mg/L	+/- 20
0.050 - 0.300	+/- 10

Fluorides

One quality control sample per five samples analyzed. Acceptable limits:

Conc. Range	% True Value
0.02 - 0.05 mg/L	+/- 20
0.05 - 2.00	+/- 10

Ammonia

One quality control sample per five samples analyzed. Acceptable limits:

Conc. Range	% True Value
0.050 - 0.250 mg/L	+/- 20
0.250 -25.000	+/- 10

TKN

One quality control sample per five samplea analyzed. Acceptable limits:

Conc. Range	% True Value
0.10 - 0.25 mg/L	+/- 20
0.25 - 25.00	+/- 10

Nitrate/ Nitrite

One quality control sample per five samples analyzed. Acceptable limits:

Conc. Range	% True Value
0.050 - 0.250 mg/L	+/- 20
0.250 -25.000	+/- 10

Phosphorus

One quality control sample per five samples analyzed. Acceptable limits:

Conc. Range	% True Value
0.050 - 0.500 mg/L	+/- 20
0.500 - 2.000	+/- 10

Sulfate

One quality control sample per five sam-

COD	One quality control sample per five samples analyzed. Acceptable limits: Low level +/- 20% High level +/- 10%
BOD	Controls, blanks and standards run with each lot. Acceptable limits: +/- 10% of True Value
PHENOLS	One quality control sample per five samples analyzed. Acceptable limits: Conc. Range % True Value 0.005 - 0.050 mg/L +/- 20% 0.050 - 0.250 +/- 10%

METALS

Three levels of quality control samples are employed over the linear working range of the parameter. One entire series is run with each lot analysis. Acceptable limits:

Furnace range	+/- 20%
Flame range	+/- 10%

One calibration check sample is performed every sixth analysis to verify calibration curve. Acceptable range:

Furnace	+/- 20%
Flame	+/- 10%

Out of limit condition requires re-standardization of instrument.

Exceptions -

Mercury - One quality control check every nine samples. Acceptable limits +/- 20% of true value. Analysis of all samples run in triplicate.

Arsenic & Selenium - Three levels of quality control are run twice per lot analysis. Acceptable results are +/- 20%. All analysis are run with spike. Acceptable limits of recovery +/- 20%

EP Toxicity are run by the method of additions, which entails running each sample at three levels of spike addition. The results of expected versus observed values are calculated in a linear regression analysis, and the slope of the line expressed as a percent. Acceptable limits are between the values of 80 to 120 % for all EP Toxic metals.

ORGANIC ANALYSIS

Standards are maintained in groups for purgibles, acid extractable, base/neutral, and pesticide/PCB's. These groups are subdivided into lower groups to facilitate identification and reduce costs in standard preparation.

The quality control procedures listed in the December 3, 1979 Federal register are utilized to maintain instrument specifications. These procedures utilize deuterated anthracene and purgibles not on the priority pollutant list. In addition Howard Laboratories utilizes the following procedures to further improve upon detection limits and quality control:

1. Each sample is duplicated where required
2. A standard of known value is analyzed at least every ten samples along with a blank
3. In the case of PCB's, quantitation is duplicated on a second column.
4. Acceptable limits of recovery must meet the following:

   a. Recovery of known standards:

      80% at a level 5 times the detection limit
      50% at a level 2 times the detection limit

   b. Recovery of spike values:

      80% at a level 5 times the detection limit
      50% at a level 2 times the detection limit

   NOTE: PCB analysis have more stringent requirements.

a. Recovery of known standards:

1. Aqueous standards -

0.01 - 0.05	+/- 0.005
0.05 - 0.50	+/- 0.01
0.50 - 5.00	+/- 0.05
Above 5.00	+/- 0.50

2. Oil standards -

Below 1.00	as appropriate
1.0 - 10.0	+/- 0.2 to +/- 2.0
10.0 - 50.0	+/- 2.0 to +/- 5.0
50.0 -500.0	+/- 5.0 to +/- 50.0
Above 500.0	as appropriate

b. Recovery of Spike values:

1. Aqueous -

0.01 - 0.05	>50%
0.05 - 0.50	>80%
0.50 - 5.00	>80%
Below 1.0	as appropriate
1.0 - 10.0	20%
10.0 - 50.0	10 to 20%
50.0 -500.0	10%
Above 500.0	10%

Duplication of samples

Duplicate samples must be reproducible at the same dilution by the following factors:

1. Aqueous -

0.01 - 0.05	+/- 0.005 - 0.01
0.05 - 0.50	+/- 0.01 - 0.05
0.50 - 5.00	+/- 0.05 - 0.10
Above 5.00	+/- 0.10

2. Oils -

Below 1.0	as appropriate
1.0 - 10.0	+/- 0.2 to 1.0
10.0 - 50.0	+/- 1.0 to 5.0

GCSCAN ANALYSES:

GCSCAN is a code for multiple analyses utilizing gas chromatography along with a specified methodology. That methodology may be ASTM, EPA, NIOSH, AOAC or other method widely recognized in the analytical field. The specific method is specified with the results when applicable. The same QA/QC is provided as for PCBs and when peaks cannot be identified, QC/MS is utilized. Quantitation is by GC using multiple level calibration.

GCMS ANALYSES:

GCMS is a code for multiple methods of analyses utilizing a gas chromatograph equipped with mass spectrometer detector. This method identifies compounds and quantitates the same with external or internal standards, as appropriate. Specific methods will be specified when such methods are recognized by the scientific community or regulatory agencies. Since not all procedures are specified, the use of GCMS for organic analyses will be performed by an academically trained analyst with experience in the application of GC and ability to interpret data which may not be found on NBS or other recognized spectral libraries. The operation of GCMS will be under the direct supervision of a Ph.D.

PRIORITY POLLUTANT ANALYSES:

Priority pollutants, TTO's or fractions of these compounds will be by the method described in the December 3, 1979 Federal Register. Exact specifications for all parameters will be by protocol. QA includes recovery of spiked samples, reproducibility of the same sample, duplicate standards and at least one other source of comparison standards derived from the US EPA, NBS, or other recognized source.

Base Neutral Fraction: Method 1625 (capillary column

insure proper spectral retrival and maintain quality control on the internal standards themselves. Quantitation will be based upon each individual parameter and not grouped or quantitated based upon area of a known amount of internal standard. The charge/mass ratio of the internal standards is not the same for the internal standards as it is for the compounds in question; therefore internal standards will be utilized to determine recovery while quantitation will be based upon known standards when recoveries have been met satisfactorily.

Acid Fraction: Method 1625 will be utilized and the same information as that utilized for Base Neutrals will be followed.

Volatile Fraction: Method 1624, utilizing cryogenic purge and trap will be utilized for the volatile parameters. The entire system is automated to reduce human error, and each sample group will be spiked to determine recovery and acceptability of the data. We have found that Method 624, which utilizes a packed column will not satisfactorily quantitate the very volatile purgibles, and for that reason, have chosen to use liquid nitrogen trap to collect the sample. This method also allows the detection of more compounds than that listed in the volatile fraction.

Pesticide/PCB Fraction: GC/ECD will be utilized to screen the Pesticide/PCB (PEBTPP) fraction, utilizing US EPA Method 608. This method is more than 10 times as sensitive as the GC/MB method. If compounds are detected, GC/MS analyses are utilized to identify such compounds. Quantitation will be by GC.

Special Parameters: Although the above methods are recognized for all priority pollutant parameters, the detection limits for certain of these parameters is quite high (e.g. 2,3,7,8-Dioxin). The recommended US EPA procedure of utilizing GC for screening of this parameter will be utilized.

SW 846 Manual covers the analyses of hazardous wastes. The methods cited in SW 846 for organic analyses have not been approved by US EPA but are only recommended at this time. This firm has spent many weeks performing such analyses and in determining recoveries of each of the parameters under the 8000 series recommended procedures. We have been unsuccessful in finding 13 of the compounds for standards. All others are available. We have further modified (added to) the methods of analyses in SW 846 to better determine certain parameters. These methods are being prepared to submit to US EPA for their information. Certain methods of preparation have been reversed in addition to normal extraction procedures. For example, base neutral/acid fraction normally requires the base fraction be extracted first, then the acid fraction. In addition to this normal method, we include the acid extraction first followed by base neutral. This allows confirmation of certain organic salts by GCMS which are not normally capable of being analyzed by GC or GC/MS.

SUMMARY:

This firm maintains all of the equipment listed for US EPA methods. This includes GC/MS, GC, HPLC and all of the special detectors required for these analyses. Further, we maintain automatic equipment which operates on a 24 hour basis, 7 days per week. Such automation and continued operation have proven to provide better data (free of human error) and better operation of equipment. We have found that startup and shutdown of equipment promotes poor operation of the equipment and causes greater problems in stability of that equipment.

Organic analyses are conducted by protocol where recommended protocol exists. Otherwise, scientifically recognized procedures are utilized for such analyses. All organic analyses are performed under the direction of a Ph.D., with many years of experience, and well over

is stored on 9 track mag tapes and archived per US EPA requirements.

Specific questions concerning these methods and data should be directed to the Laboratory Director.

Appendix C

Analytical Parameters

ANALYTICAL PARAMETERS

A. For General Water Quality (1)

1. Chloride
2. Iron
3. Manganese
4. Phenols
5. Sodium
6. Sulfate

B. For Indicators of Contamination (Quadruplicate Analysis) (1)

1. pH
2. Specific Conductance
3. Total Organic Carbon (TOC)
4. Total Organ Halogen (TOX)

C. For Drinking Water Suitability (1)

1. Arsenic
2. Barium
3. Cadmium
4. Chromium - Hexavalent
   - Total
5. Fluride
6. Lead
7. Mercury
8. Nitrate
9. Selenium
10. Silver
11. Gross Alpha
12. Gross Beta
13. Radium
14. Endrin
15. Lindane
16. Methoxychlor
17. Toxaphene
18. 2,4-D
19. 2,4,5-TP Silvex
20. Coliform Bacteria

ANALYTICAL PARAMETERS (Cont'd.)

D. Site Specific Parameters

1. Nickel (1)
2. Cyanide (1)
3. Copper (1)
4. Zinc (1)
5. Magnesium (1)
6. Calcium (1)
7. Phosphorus (1)
8. Chlorobenzene (2)
9. Chlorodibromomethane (2)
10. Chloroethane (2)
11. 2-chloroethylvinyl (2)
12. Chloroform (2)
13. Dichlorobromomethane (2)
14. Dichlorodifluoromethane (2)
15. Total Dissolved Solids (TDS)
16. Total Potassium
17. Chemical Oxygen Demand (COD)
18. cis 1,2 Dichloroethene (2)
19. Tributylphosphate (2)
20. Acrolein (2)
21. Acrylonotrille (2)
22. Benzene (2)
23. bis (Chloromethyl) Ether (2)
24. Bromoform (2)
25. Bromodichloromethane (2)
26. Bromoethane (2)
27. Carbon tetrachloride (2)
28. Chloromethane (2)
29. 1,2 Dichlorobenzene (2)
30. 1,3 Dichlorobenzene (2)
31. 1,4 Dichlorobenzene (2)
32. 1,1 Dichloroethane (2)
33. 1,2 Dichloroethane (2)
34. 1,1 Dichloroethylene (2)
35. 1,2 Dichloropropane (2)
36. 1,2 Dichloropropylene (2)
37. Ethylbenzene (2)
38. Methylbromide (2)

ANALYTICAL PARAMETERS (Cont'd.)

39. Methylchloride (2)
40. trans-1,2 Dichloroethylene (2)
41. 1,3 Dichloropropene (2)
42. 1,1,2,2 Tetrachloroethane (2)
43. Tetrachloroethylene (2)
44. Toulene (2)
45. 1,1,1 Trichloroethane (2)
46. 1,1,2 Trichloroethane (2)
47. Trichloroethylene (2)
48. Trichlorofluoromethane (2)
49. Vinyl Chloride (Chloroethene) (2)

E. Radionuclide (1)

1. Potassium 40
2. Total Uranium
3. Radium 226
4. Radium 228
5. Technetium 99
6. Thorium 228
7. Thorium 230
8. Thorium 232
9. Cesium 137
10. Strontium 90
11. Ruthenium 106
12. Neptunium 237
13. Plutonium 238
14. Plutonium 239
15. Plutonium 240

(1) Required for RCRA and analyzed for each sample.

(2) Not required for RCRA, but analyzed for all wells except: MW-1s, MW-3, MW-5, P-1, P-2, P-3, MW-15d, OS-2 and OS-3.

ANALYTICAL METHODS AND DETECTION LIMITS FOR GROUNDWATER SAMPLES WATER QUALITY INDICATORS

PARAMETER	DETECTION LIMIT	ANALYTICAL METHOD**
Chloride	1 ppm	325.3
Iron	50 ppb	236.2
Manganese	20 ppb	243.2
Phenols (total)	5 ppb	420.3
Sodium	50 ppb	273.2
Sulfate	1.0 ppb	375.2
pH	0.1 std./units	150.1
Specific Conductance	1 umho/cm	120.1
Total Organic Carbon (TOC)	1 ppb	415.1
Total Organic Halogen (TOX)	10 ppb	*
Arsenic	5 ppb	206.2
Barium	200 ppb	208.2
Cadmium	2 ppb	213.2
Chromium-Hexavalent	5 ppb	218.4
Chromium-Total	5 ppb	218.2
Fluoride	10 ppb	340.2
Lead	5 ppb	239.2
Mercury	2 ppb	245.2
Nitrate (as N)	20 ppb	352.1
Selenium	2.5 ppb	270.2
Silver	30 ppb	272.2
Gross alpha	15 pCi/l	900.0
Gross beta	5 pCi/l	900.0
Radium	5 pCi/l	900.1
Endrin	0.2 ppb	608
Lindane	0.2 ppb	608
Methoxychlor	0.2 ppb	608
Toxaphene	0.5 ppb	608
2,4-D	0.2 ppb	608
2,4,5-TP Silvex	0.2 ppb	608
Coliform Bacteria	2/100 ml	*
Nickel	5 ppb	249.2
Cyanide	5 ppb	335.3
Cooper	25 ppb	220.2
Zinc	25 ppb	289.2
Magnesium	10 ppb	242.1
Calcium	50 ppb	215.1
Phosphorus	20 ppb	365.4
Total Dissolved Solids (TDS)	10 ppb	*
Total Potassium	50 ppb	258.1

*Approved analytical method not available. Analysis performed according to generally accepted analytical procedures.

**As described in References 1, 2, and 3.

ANALYTICAL METHODS AND DETECTION LIMITS FOR GROUNDWATER SAMPLES
VOLATILES

PARAMETER	DETECTION LIMIT	ANALYTICAL METHOD
Chlorobenzene	2.0 ppb	1624
Chlorodibromomethane	2.0 ppb	1624
Chloroethane	2.0 ppb	1624
2-Chloroethlvinyl Ether	2.0 ppb	1624
Chloroform	2.0 ppb	1624
Dichlorobromoethane	2.0 ppb	1624
Dichlorodifluoromethane	2.0 ppb	1624
Chemical Oxygen Demand (COD)	10 ppb	405.1
cis 1,2 Dichloroethylene	2.0 ppb	1624
Tributylphosphate	2.0 ppb	*
Acrolein	2.0 ppb	*
Acrylonitrille	2.0 ppb	*
Benzene	2.0 ppb	1624
bis (Chloromethyl) Ether	2.0 ppb	*
Bromoform	2.0 ppb	1624
Bromodichloromethane	2.0 ppb	1624
Bromoethane	2.0 ppb	1624
Carbon tetrachloride	2.0 ppb	1624
Chloromethane	2.0 ppb	1624
1,2 Dichlorobenzene	2.0 ppb	1625
1,3 Dichlorobenzene	2.0 ppb	1625
1,4 Dichlorobenzene	2.0 ppb	1625
1,1 Dichloroethane	2.0 ppb	1624
1,2 Dichloroethane	2.0 ppb	1624
1,1 Dichloroethylene	2.0 ppb	1624
1,2 Dichloropropane	2.0 ppb	1625
1,2 Dichloropropylene	2.0 ppb	*
Ethylbenzene	2.0 ppb	1624
Methylbromide	2.0 ppb	1624
Methylchloride	2.0 ppb	1624
Trans 1,2 Dichloroethylene	2.0 ppb	1624
1,3 Dichloropropene	2.0 ppb	*
1,1,2,2 Tetrachloroethane	2.0 ppb	1624
Tetrachloroethylene	2.0 ppb	1624
1,1,1 Trichloroethane	2.0 ppb	1624
1,1,2 Trichloroethane	2.0 ppb	1624
Trichloroethylene	2.0 ppb	1624
Trichlorofluoromethane	2.0 ppb	1624
Vinyl Chloride	2.0 ppb	1624

*Approved analytical method not available. Analysis performed according to generally accepted analytical procedures.

ANALYTICAL METHODS AND DETECTION LIMITS FOR GROUNDWATER SAMPLES RADIONUCLIDES

PARAMETER	DETECTION LIMIT	ANALYTICAL METHOD
Cesium 137	5 pCi/l	901.0
Strontium 90	5 pCi/l	905.0
Ruthenium 106	5 pCi/l	*
Neptunium 237	5 pCi/l	*
Plutonium 239	5 pCi/l	*
Plutonium 240	5 pCi/l	*
Potassium 40	5 pCi/l	*
Radium 226	5 pCi/l	903.1
Radium 228	5 pCi/l	904.0
Technetium 99	5 pCi/l	*
Thorium 228	5 pCi/l	*
Thorium 230	5 pCi/l	*
Thorium 232	5 pCi/l	*
Uranium 233/234	5 pCi/l	*
Uranium 235	5 pCi/l	*
Uranium 238	5 pCi/l	*

*Approved analytical method not available. Analysis performed according to generally accepted analytical procedures.

REFERENCES

1. USEPA, 1983, Methods for Chemical Analysis of Water and Wastes, Publication Number 600/4-79-020.

2. USEPA, 1980, Prescribed Procedures for Measurement of Radioactivity in Drinking Water, Publication Number 600/4-80-032.

3. Howard Laboratories, Inc. 1986, Quality Assurance/ Quality Control Program, Publication Number HLI-QC.EF.

Appendix D

Howard Laboratories Inc.

Laboratory Data Sheets

Round 6

RECEIVED: 11/30/87

HOWARD LABS INC REPORT

01/29/88 16:20:50

LAB # 87-11-C51

CLIENT WEST M O SAMPLES 3
COMPANY Westinghouse Materials Co.
FACILITY

REPORT Westinghouse Materials
TO Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 11/30/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

PREPARED BY HOWARD LABORATORIES, INC.
3601 South Dixie Drive
P.O. Box 369
Dayton, OH 45449
PHONE 513-294-6856

Joskia H. Webster
CERTIFIED BY

CONTACT D HOWARD

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01 #03000 - HKs
01 #03000 - HKs B.#76346
02 #03001 - HKd
02 #03001 - HKd B.#76347
03 #03002 - AW
03 #03002 - AW B.#76348

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus, Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform, Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD.
ZN	Zinc

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HOWARD LABS INC REPORT

LAB # 87-11-C51

Results by Sample

SAMPLE ID #03000 - HKs

SAMPLE # 01 FRACTIONS: A,B,C,D,E,F,G,H

Date & Time Collected 11/30/87 09:47:00 Category

AG	<0.030 mg/L	ALPHA	59 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	104 pCi/L	CA	93.300 mg/L
CD	<0.001 mg/L	CLI	22.0 mg/L	CN	<0.005 mg/L	CODI	20 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.22 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	3.190 mg/L	MG	21.700 mg/L
MN	<0.015 mg/L	NA	14.300 mg/L	NI	<0.005 mg/L	NO3I	2.04 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	60.0 mg/L	TDSI	444 mg/L
ZN	0.359 mg/L										

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HOWARD LABS INC REPORT

Results by Sample

LAB # 87-11-C51

SAMPLE ID #03000 - HKs

FRACTION 01A TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 11/30/87 09:47:00 Category

DATE EXTRACTED 12/01/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/08/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	92.0	% Recovery
Endrin	82.0	% Recovery
Methoxychlor	91.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 11/30/87

HOWARD LABS INC REPORT LAB # 87-11-C51

Results by Sample

SAMPLE ID #03000 - HKs

FRACTION 01A TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 11/30/87 09:47:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
Total Organic Halogen reported in ug/L
S. D. = Standard Deviation

RECEIVED: 11/30/87

HOWARD LABS INC REPORT

LAB # 87-11-C51

Results by Sample

SAMPLE ID #03000 - HKs

FRACTION 01H TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 11/30/87 09:47:00 Category

VERIFIED BY CMH

DATA FILE B1262

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
This test includes the HSL volatile compounds, the NPDES volatiles, the regulated and non-regulated VOC's for drinking water plus mixed aromatics, aliphatics, ketones, etc., for a total of over 250 volatiles. A typical detection limit is that specified by our CLP program, which includes trichloroethene benzene, toluene, chloroform, vinyl chloride and others at <0.50 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	92.6 %	S1V
toluene-d6	101.0 %	S2V
bromofluorobenzene	93.8 %	S3V

CODE SV - Surrogate compound for QC check.

HOWARD LABS INC REPORT LAB # 87-11-C51

RECEIVED: 11/30/87

Results by Sample

SAMPLE ID #03000 - HKs FRACTION 01C TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 11/30/87 09:47:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.48	7.48	7.49	7.49	7.49	0.006
CONDUCTIVITY	570	580	580	580	580	5.000
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 11/30/87

HOWARD LABS INC REPORT LAB # 87-11-C51

Results by Sample

SAMPLE ID #03000 - HKs B.#76346 SAMPLE # 01 FRACTIONS: I

Date & Time Collected 11/30/87 09:47:00 Category

TOCOL 1 /100ml

SAMPLE ID #03001 - HKd SAMPLE # 02 FRACTIONS: A,B,C,D,E,F,G,H

Date & Time Collected 11/30/87 10:45:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	0.003 mg/L	BA	<0.200 mg/L	BETA	4 pCi/L	CA	113.000 mg/L
CD	<0.001 mg/L	CLI	27.0 mg/L	CN	0.006 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.18 mg/L	FE	2.730 mg/L	HG	<0.0003 mg/L	K	1.640 mg/L	MG	25.100 mg/L
MN	0.343 mg/L	NA	7.190 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	88.0 mg/L	TDSI	490 mg/L
ZN	0.092 mg/L										

RECEIVED: 11/30/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-11-C51

SAMPLE ID #03001 - HKd

FRACTION 02A TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 11/30/87 10:45:00 Category

DATE EXTRACTED 12/01/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/08/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	92.0	% Recovery
Endrin	86.0	% Recovery
Methoxychlor	91.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 11/30/87

HOWARD LABS INC REPORT

LAB # 87-11-C51

Results by Sample

SAMPLE ID #03001 - HKd

FRACTION 02A TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 11/30/87 10:45:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S.D. = Standard Deviation

RECEIVED: 11/30/87

HOWARD LABS INC REPORT

LAB # 87-11-C51

Results by Sample

SAMPLE ID #03001 - HKd

FRACTION 02C TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 11/30/87 10:45:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.44	7.44	7.44	7.45	7.44	0.005
CONDUCTIVITY	620	620	620	620	620	0.000
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 11/30/87

HOWARD LABS INC REPORT LAB # 87-11-C51

Results by Sample

SAMPLE ID #03001 - HKd B.#76347 SAMPLE # 02 FRACTIONS: I

Date & Time Collected 11/30/87 10:45:00 Category

TOCOL <1 /100ml

SAMPLE ID #03002 - AW SAMPLE # 03 FRACTIONS: A,B,C,D,E,F,G,H

Date & Time Collected 11/30/87 11:13:00 Category

AG	<0.030 mg/L	ALPHA	10 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	23 pCi/L	CA	109.000 mg/L
CD	<0.001 mg/L	CLI	24.0 mg/L	CN	<0.005 mg/L	CODI	15 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.16 mg/L	FE	1.540 mg/L	HG	<0.0002 mg/L	K	2.810 mg/L	MG	23.100 mg/L
MN	0.389 mg/L	NA	10.600 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	68.0 mg/L	TDSI	444 mg/L
ZN	0.022 mg/L										

RECEIVED: 11/30/87

HOWARD LABS INC REPORT LAB # 87-11-C51

Results by Sample

SAMPLE ID #03002 - AW

FRACTION 03A TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 11/30/87 11:13:00 Category

DATE EXTRACTED 12/01/87
CONCENTRATION FACTOR 92

DATE INJECTED 12/08/87
ANALYST KH

VERIFIED BY WMG

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	92.0	% Recovery
Endrin	86.0	% Recovery
Methoxychlor	91.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.
N/A = Not Analyzed
<=Less Than
* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 11/30/87

HOWARD LABS INC REPORT LAB # 87-11-C51

Results by Sample

SAMPLE ID #03002 - AW

FRACTION 03A TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 11/30/87 11:13:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S.D.
TOX	36	41	40	40	39	1.92

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S.D. = Standard Deviation

RECEIVED: 11/30/87

HOWARD LABS INC REPORT LAB # 87-11-C51

Results by Sample

SAMPLE ID #03002 - AW

FRACTION 03C TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 11/30/87 11:13:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.44	7.73	7.44	7.44	7.44	0.005
CONDUCTIVITY	600	600	600	600	600	0.000
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 11/30/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-11-C51

SAMPLE ID #03002 - AW B.#76348

SAMPLE # 03 FRACTIONS: I

Date & Time Collected 11/30/87 11:13:00 Category

TOCOL <1 /100ml

HOWARD LABS INC. REPORT

LAB # 87-11-C51

RECEIVED: 11/30/87

01/29/88 16:20:50

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02	FRACTION 03
POTASSIUM 40	<1.0	<1.0	<1.0
TOTAL URANIUM	396	<1.0	204
RADIUM 226	<1.0	<1.0	<1.0
RADIUM 228	<1.0	<1.0	<1.0
TECHNETIUM 99	<1.0	<1.0	<1.0
THORIUM 228	<1.0	<1.0	<1.0
THORIUM 230	<1.0	<1.0	<1.0
THORIUM 232	<1.0	<1.0	<1.0
CESIUM 137	<1.0	<1.0	<1.0
STRONTIUM 90	<1.0	<1.0	<1.0
RUTHENIUM 106	<1.0	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0	<1.0

RFCEIVED: 11/30/87

HOWARD LABS INC REPORT

01/29/88 15:30:45

LAB # 87-11-C52

CLIENT WEST M O SAMPLES 2
COMPANY Westinghouse Materials Co.
FACILITY

PREPARED BY HOWARD LABORATORIES, INC.
3601 South Dixie Drive
P.O. Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie S. McCutcheon
CERTIFIED BY

CONTACT D HOWARD

REPORT TO Westinghouse Materials
Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 11/30/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01 #03003 - DS
01 #03003 - DS B.#76349
02 #03004 - SW-2
02 #03004 - SW-2 B.#76350

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus, Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform, Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD.
ZN	Zinc

RECEIVED: 11/30/87

HOWARD LABS INC REPORT

LAB # 87-11-C52

Results by Sample

SAMPLE ID #03003 - DS

SAMPLE # 01 FRACTIONS: A,B,C,D,E,F,G,H

Date & Time Collected 11/30/87 11:40:00 Category

AG	<0.030 mg/L	ALPHA	59 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	99 pCi/L	CA	89.200 mg/L
CD	<0.001 mg/L	CLI	19.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.17 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	3.160 mg/L	MG	20.900 mg/L
MN	<0.015 mg/L	NA	10.100 mg/L	NI	0.006 mg/L	NO3I	2.21 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	52.0 mg/L	TDSI	384 mg/L
ZN	0.095 mg/L										

RECEIVED: 11/30/87

HOWARD LABS INC REPORT LAB # 87-11-C52

Results by Sample

SAMPLE ID #03003 - DS

FRACTION 01A TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 11/30/87 11:40:00 Category

DATE EXTRACTED 12/01/87
CONCENTRATION FACTOR 100

DATE INJECTED 12/08/87
ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	103.0	% Recovery
Endrin	102.0	% Recovery
Methoxychlor	102.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.
N/A = Not Analyzed
<=Less Than
* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 11/30/87

HOWARD LABS INC REPORT LAB # 87-11-C52

Results by Sample

SAMPLE ID #03003 - DS

FRACTION 01A TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 11/30/87 11:40:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
Total Organic Halogen reported in ug/L
S. D. = Standard Deviation

RECEIVED: 11/30/87

HOWARD LABS INC REPORT LAB # 87-11-C52

Results by Sample

SAMPLE ID #03003 - DS

FRACTION 01C TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 11/30/87 11:40:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.55	7.55	7.56	7.56	7.56	0.006
CONDUCTIVITY	530	530	530	540	530	5.000
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 11/30/87

HOWARD LABS INC REPORT LAB # 87-11-C52

Results by Sample

SAMPLE ID #03003 - DS B.#76349 SAMPLE # 01 FRACTIONS: I

Date & Time Collected 11/30/87 11:40:00 Category

TOCOL 29 /100ml

SAMPLE ID #03004 - SW-2 SAMPLE # 02 FRACTIONS: A,B,C,D,E,F,G,H

Date & Time Collected 11/30/87 14:24:00 Category

AG	<0.030 mg/L	ALPHA	1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	17 pCi/L	CA	109.000 mg/L
CD	<0.001 mg/L	CLI	44.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.17 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	3.100 mg/L	MG	28.500 mg/L
MN	0.151 mg/L	NA	19.200 mg/L	NI	<0.005 mg/L	NO3I	1.93 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	76.0 mg/L	TDSI	531 mg/L
ZN	0.066 mg/L										

RECEIVED: 11/30/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-11-C52

SAMPLE ID #03004 - SW-2

FRACTION 02A TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 11/30/87 14:24:00 Category

DATE EXTRACTED 12/01/87

CONCENTRATION FACTOR 100

DATE INJECTED 12/08/87

ANALYST KH

VERIFIED BY WMG

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	103.0	% Recovery
Endrin	102.0	% Recovery
Methoxychlor	102.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 11/30/87

HOWARD LABS INC REPORT LAB # 87-11-C52

Results by Sample

SAMPLE ID #03004 - SW-2

FRACTION 02A TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 11/30/87 14:24:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 11/30/87

HOWARD LABS INC REPORT

LAB # 87-11-C52

Results by Sample

SAMPLE ID #03004 - SW-2

FRACTION 02H TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 11/30/87 14:24:00 Category

VERIFIED BY GMH

DATA FILE B1263

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatiles detected with a detection limit of <0.50 ug/L for the stable HSL, NPDES and other volatiles. Test covers in excess of 250 volatile organics.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	103.0 %	S1V
toluene-d6	101.0 %	S2V
bromofluorobenzene	100.0 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 11/30/87

HOWARD LABS INC REPORT LAB # 87-11-C52

Results by Sample

SAMPLE ID #03004 - SW-2

FRACTION 02C TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 11/30/87 14:24:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.38	7.38	7.38	7.38	7.38	0.000
CONDUCTIVITY	680	690	690	690	690	5.000
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 11/30/87

HOWARD LABS INC REPORT

LAB # 87-11-C52

Results by Sample

SAMPLE ID #03004 - SW-2 B.#76350

SAMPLE # 02 FRACTIONS: I

Date & Time Collected 11/30/87 14:24:00 Category

TOCOL <1 /100ml

RECEIVED: 11/30/87

HOWARD LABS INC REPORT
01/29/88 15:30:45

LAB # 87-11-C52

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02
POTASSIUM 40	<1.0	<1.0
TOTAL URANIUM	319	<1.0
RADIUM 226	<1.0	<1.0
RADIUM 228	<1.0	<1.0
TECHNETIUM 99	<1.0	<1.0
THORIUM 228	<1.0	<1.0
THORIUM 230	<1.0	<1.0
THORIUM 232	<1.0	<1.0
CESIUM 137	<1.0	<1.0
STRONTIUM 90	<1.0	<1.0
RUTHENIUM 106	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0

RECEIVED: 12/01/87

HOWARD LABS INC REPORT

01/29/88 17:42:20

LAB # 87-12-079

CLIENT WEST M O SAMPLES 3
COMPANY Westinghouse Materials Co.
FACILITY

REPORT Westinghouse Materials
TO Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 12/01/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

PREPARED HOWARD LABORATORIES, INC.
BY 3601 South Dixie Drive
P.O. Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie G. Webster
CERTIFIED BY

CONTACT D HOWARD

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01 #03005 - 16s
01 #03005 - 16s B.#76356
01 #03005 - 16s - DISSOLVED
02 #03006 - 16d
02 #03006 - 16d B.#76357
02 #03006 - 16d - DISSOLVED
03 #03008 - 14d
03 #03008 - 14d B.#76358
03 #03008 - 14d - DISSOLVED

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus, Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform, Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD.
ZN	Zinc

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-079

Results by Sample

SAMPLE ID #03005 - 16s SAMPLE # 01 FRACTIONS: A,B,C,G,H

Date & Time Collected 12/01/87 08:40:00 Category

ALPHA	5 pCi/L	BETA	12 pCi/L	CLI	24.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR6	<0.005 mg/L
F	0.16 mg/L	NO3I	0.98 mg/L	PHNLI	<0.005 mg/L	PTI	0.39 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L
SO4I	64.0 mg/L	TDSI	336 mg/L								

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-079

Results by Sample

SAMPLE ID #03005 - 16s

FRACTION 01A TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/01/87 08:40:00 Category

DATE EXTRACTED 12/02/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/08/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	103.0	% Recovery
Endrin	102.0	% Recovery
Methoxychlor	102.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-079

Results by Sample

SAMPLE ID #03005 - 16s

FRACTION 01A TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/01/87 08:40:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-079

Results by Sample

SAMPLE ID #03005 - 16s

FRACTION 01H TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/01/87 08:40:00 Category

VERIFIED BY CMH

DATA FILE B1265

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile organic compounds detected with a detection limit of <0.50 ug/L for the stable HSL compounds and other volatile organics to include ketones, aromatics, aliphatics and the halogens.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	100.0 %	S1V
toluene-d6	101.0 %	S2V
bromofluorobenzene	100.0 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/01/87

HOWARD LABS INC REPORT

LAB # 87-12-079

Results by Sample

SAMPLE ID #03005 - 16s

FRACTION 01C TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/01/87 08:40:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.48	7.48	7.49	7.49	7.49	0.006
CONDUCTIVITY	560	560	560	570	560	5.000
TOTAL ORGANIC CARBON	1	1	1	1	1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-079

Results by Sample

SAMPLE ID #03005 - 16s B.#76356 SAMPLE # 01 FRACTIONS: I

Date & Time Collected 12/01/87 08:40:00 Category

TOCOL <1 /100ml

SAMPLE ID #03005 - 16s - DISSOLVED SAMPLE # 01 FRACTIONS: D,E,F

Date & Time Collected 12/01/87 08:40:00 Category

AG	<0.030 mg/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	CA	89.900 mg/L	CD	<0.001 mg/L	CR	<0.005 mg/L
CU	0.026 mg/L	FE	0.200 mg/L	HG	<0.0003 mg/L	K	2.750 mg/L	MG	23.700 mg/L	MN	0.025 mg/L
NA	15.000 mg/L	NI	<0.005 mg/L	PB	<0.005 mg/L	SE	<0.0025 mg/L	ZN	<0.020 mg/L		

SAMPLE ID #03006 - 16d SAMPLE # 02 FRACTIONS: A,B,C,G,H

Date & Time Collected 12/01/87 09:37:00 Category

ALPHA	3 pCi/L	BETA	17 pCi/L	CLI	23.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR6	<0.005 mg/L
F	0.18 mg/L	NO3I	1.30 mg/L	PHNLI	0.008 mg/L	PTI	0.04 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L
SO4I	68.0 mg/L	TDSI	332 mg/L								

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-079

Results by Sample

SAMPLE ID #03006 - 16d

FRACTION 02A TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/01/87 09:37:00 Category

DATE EXTRACTED 12/02/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/08/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	103.0	% Recovery
Endrin	102.0	% Recovery
Methoxychlor	102.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

HOWARD LABS INC REPORT LAB # 87-12-079

RECEIVED: 12/01/87

Results by Sample

SAMPLE ID #03006 - 16d FRACTION 02A TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/01/87 09:37:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-079

Results by Sample

SAMPLE ID #03006 - 16d

FRACTION 02H TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/01/87 09:37:00 Category

VERIFIED BY CMH

DATA FILE B1266

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected to include all stable HSL volatiles, NPDES, drinking water standards and other compounds such as ketones, aromatics and aliphatics. A detection limit for the drinking water standards is <0.50 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	94.3 %	S1V
toluene-d6	101.0 %	S2V
bromofluorobenzene	103.0 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-079

Results by Sample

SAMPLE ID #03006 - 16d

FRACTION 02C TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/01/87 09:37:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.52	7.53	7.53	7.53	7.53	0.005
CONDUCTIVITY	540	540	540	540	540	0.000
TOTAL ORGANIC CARBON	1	1	1	1	1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-079

Results by Sample

SAMPLE ID #03006 - 16d B.#76357 SAMPLE # 02 FRACTIONS: I
Date & Time Collected 12/01/87 Category

TOCOL 4 /100ml

SAMPLE ID #03006 - 16d - DISSOLVED SAMPLE # 02 FRACTIONS: D,E,F
Date & Time Collected 12/01/87 09:37:00 Category

AG	<0.030 mg/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	CA	79.400 mg/L	CD	<0.001 mg/L	CR	<0.005 mg/L
CU	<0.025 mg/L	FE	<0.050 mg/L	HG	<0.0003 mg/L	K	1.990 mg/L	MG	22.500 mg/L	MN	<0.015 mg/L
NA	12.900 mg/L	NI	<0.005 mg/L	PB	<0.005 mg/L	SE	<0.0025 mg/L	ZN	<0.020 mg/L		

SAMPLE ID #03008 - 14d SAMPLE # 03 FRACTIONS: A,B,C,G,H
Date & Time Collected 12/01/87 10:35:00 Category

ALPHA	7 pCi/L	BETA	17 pCi/L	CLI	21.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR6	<0.010 mg/L
F	0.13 mg/L	NO3I	1.46 mg/L	PHNLI	<0.005 mg/L	PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L
SO4I	60.0 mg/L	TDSI	346 mg/L								

139

213

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-079

Results by Sample

SAMPLE ID #03008 - 14d

FRACTION 03A TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/01/87 10:35:00 Category

DATE EXTRACTED 12/02/87
CONCENTRATION FACTOR 92

DATE INJECTED 12/08/87
ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	103.0	% Recovery
Endrin	102.0	% Recovery
Methoxychlor	102.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.
N/A = Not Analyzed
<=Less Than
* All results reported in micrograms/liter unless otherwise specified.

ECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-079

Results by Sample

AMPLE ID #03008 - 14d

FRACTION 03A TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/01/87 10:35:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	98	101	94	99	98	2.55

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
Total Organic Halogen reported in ug/L
S.D. = Standard Deviation

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-079

Results by Sample

SAMPLE ID #03008 - 14d

FRACTION 03H TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/01/87 10:35:00 Category

VERIFIED BY CMH

DATA FILE B1264

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	100.0 %	S1V
toluene-d6	90.8 %	S2V
bromofluorobenzene	103.0 %	S3V

CODE SV - Surrogate compound for QC check.

HOWARD LABS INC REPORT LAB # 87-12-079

RECEIVED: 12/01/87

Results by Sample

SAMPLE ID #03008 - 14d FRACTION 03C TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/01/87 10:35:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.67	7.67	7.67	7.67	7.67	0.000
CONDUCTIVITY	520	530	530	530	530	5.000
TOTAL ORGANIC CARBON	1	2	2	2	1.75	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/01/87

HOWARD LABS INC REPORT

LAB # 87-12-079

Results by Sample

SAMPLE ID #03008 - 14d B.#76358 SAMPLE # 03 FRACTIONS: I

Date & Time Collected 12/01/87 10:35:00 Category

TOCOL 9,900 /100ml

SAMPLE ID #03008 - 14d - DISSOLVED SAMPLE # 03 FRACTIONS: D,E,F

Date & Time Collected 12/01/87 10:35:00 Category

AG	<0.030 mg/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	CA	105.000 mg/L	CD	<0.001 mg/L	CR	0.018 mg/L
CU	0.025 mg/L	FE	0.907 mg/L	HG	<0.0002 mg/L	K	2.220 mg/L	MG	29.500 mg/L	MN	0.093 mg/L
NA	13.000 mg/L	NI	<0.005 mg/L	PB	0.006 mg/L	SE	<0.0025 mg/L	ZN	<0.020 mg/L		

RECEIVED: 12/01/87 01/29/88 17:42:20

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02	FRACTION 03
POTASSIUM 40	<1.0	<1.0	<1.0
TOTAL URANIUM	<1.0	<1.0	13
RADIUM 226	<1.0	<1.0	<1.0
RADIUM 228	<1.0	<1.0	<1.0
TECHNETIUM 99	<1.0	<1.0	<1.0
THORIUM 228	<1.0	<1.0	<1.0
THORIUM 230	<1.0	<1.0	<1.0
THORIUM 232	<1.0	<1.0	<1.0
CESIUM 137	<1.0	<1.0	<1.0
STRONTIUM 90	<1.0	<1.0	<1.0
RUTHENIUM 106	<1.0	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0	<1.0

HOWARD LABS INC REPORT LAB # 87-12-080

ECEIVED: 12/01/87 01/29/88 15:00:30

CLIENT WEST M O SAMPLES 6
COMPANY Westinghouse Materials Co.
ACILITY

REPORT Westinghouse Materials
TO Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 12/01/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

PREPARED HOWARD LABORATORIES, INC.
BY 3601 South Dixie Drive
P.O. Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie D. Webster
CERTIFIED BY

CONTACT D HOWARD

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

1	#03009 - 18d
1	#03009 - 18d B.#76359
2	#03010 - 18s
2	#03010 - 18s B.#76360
3	#03011 - 18d
3	#03011 - 18d B.#76361
4	#03012 - Well 9
4	#03012 - Well 9 B.#76362
5	#03013-Cl.Blank - #871113S
6	#03013-Op.Blank - #871113S

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus,Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform,Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD.
ZN	Zinc

ECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-080

Results by Sample

SAMPLE ID #03009 - 18d

SAMPLE # 01 FRACTIONS: A,B,C,D,E,F,G,H
Date & Time Collected 12/01/87 11:35:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	12 pCi/L	CA	83.500 mg/L		
CD	<0.001 mg/L	CLI	12.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L		
CU	<0.025 mg/L	F	0.21 mg/L	FE	0.799 mg/L	HG	<0.0002 mg/L	K	0.632 mg/L	MG	32.000 mg/L		
MN	0.056 mg/L	NA	7.100 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	0.007 mg/L	PHNLI	0.015 mg/L		
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	68.0 mg/L	TDSI	368 mg/L		
ZN	<0.020 mg/L												

RECEIVED: 12/01/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-080

SAMPLE ID #03009 - 18d

FRACTION 01A TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/01/87 11:35:00 Category

DATE EXTRACTED 12/02/87

CONCENTRATION FACTOR 100

DATE INJECTED 12/08/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	103.0	% Recovery
Endrin	102.0	% Recovery
Methoxychlor	102.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-080

Results by Sample

SAMPLE ID #03009 - 18d

FRACTION 01A TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/01/87 11:35:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	18	19	20	15	18	1.87

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-080

Results by Sample

SAMPLE ID #03009 - 18d

FRACTION 01H TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/01/87 11:35:00 Category

VERIFIED BY CMH

DATA FILE B1267

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L for the stable HSL, NPDES and other volatile organics.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	90.4 %	S1V
toluene-d6	96.6 %	S2V
bromofluorobenzene	107.0 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/01/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-080

SAMPLE ID #03009 - 18d

FRACTION 01C TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/01/87 11:35:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.35	7.35	7.36	7.36	7.36	0.006
CONDUCTIVITY	570	570	570	570	570	0.000
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/01/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-080

SAMPLE ID #03009 - 18d B.#76359

SAMPLE # 01 FRACTIONS: I

Date & Time Collected 12/01/87 11:35:00 Category

TOCOL 26 /100ml

SAMPLE ID #03010 - 18s

SAMPLE # 02 FRACTIONS: A,B,C,D,E,F,G,H

Date & Time Collected 12/01/87 11:35:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	7 pCi/L	CA	105.000 mg/L		
CD	<0.001 mg/L	CLI	8.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L		
CU	<0.025 mg/L	F	0.21 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	1.430 mg/L	MG	25.700 mg/L		
MN	<0.015 mg/L	NA	5.500 mg/L	NI	<0.005 mg/L	NO3I	1.24 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L		
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	44.0 mg/L	TDSI	383 mg/L		
ZN	<0.020 mg/L												

RECEIVED: 12/01/87

HOWARD LABS INC REPORT

LAB # 87-12-080

Results by Sample

SAMPLE ID #03010 - 18s

FRACTION 02A TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/01/87 11:35:00 Category

DATE EXTRACTED 12/03/87

CONCENTRATION FACTOR 100

DATE INJECTED 12/09/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	103.0	% Recovery
Endrin	102.0	% Recovery
Methoxychlor	102.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-080

Results by Sample

SAMPLE ID #03010 - 18s

FRACTION 02A TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/01/87 11:35:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	28	25	22	21	24	2.74

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-080

Results by Sample

SAMPLE ID #03010 - 18s

FRACTION 02H TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/01/87 11:35:00 Category

VERIFIED BY CMH

DATA FILE B1268

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L for the same volatiles described in fraction 01H.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	98.4 %	S1V
toluene-d6	101.0 %	S2V
bromofluorobenzene	95.6 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-080

Results by Sample

SAMPLE ID #03010 - 18s

FRACTION 02C TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/01/87 11:35:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.37	7.37	7.37	7.38	7.37	0.005
CONDUCTIVITY	560	560	560	560	560	0.000
TOTAL ORGANIC CARBON	2	2	2	2	2	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-080

Results by Sample

SAMPLE ID #03010 - 18s B.#76360 SAMPLE # 02 FRACTIONS: I

Date & Time Collected 12/01/87 11:35:00 Category

TOCOL <2 /100ml

SAMPLE ID #03011 - 18d SAMPLE # 03 FRACTIONS: A,B,C,D,E,F,G,H

Date & Time Collected 12/01/87 11:35:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	14 pCi/L	CA	90.000 mg/L
CD	<0.001 mg/L	CLI	12.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.23 mg/L	FE	0.187 mg/L	HG	0.0002 mg/L	K	0.711 mg/L	MG	32.900 mg/L
MN	0.030 mg/L	NA	6.600 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	0.019 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	64.0 mg/L	TDSI	408 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/01/87

HOWARD LABS INC REPORT

LAB # 87-12-080

Results by Sample

SAMPLE ID #03011 - 18d

FRACTION 03A TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/01/87 11:35:00 Category

DATE EXTRACTED 12/03/87

CONCENTRATION FACTOR 100

DATE INJECTED 12/09/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	103.0	% Recovery
Endrin	102.0	% Recovery
Methoxychlor	102.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-080

Results by Sample

SAMPLE ID #03011 - 18d

FRACTION 03A TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/01/87 11:35:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	26	26	23	23	25	1.50

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-080

Results by Sample

SAMPLE ID #03011 - 18d

FRACTION 03H TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/01/87 11:35:00 Category

VERIFIED BY CMH

DATA FILE B1269

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	97.7 %	S1V
toluene-d6	89.0 %	S2V
bromofluorobenzene	88.1 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-080

Results by Sample

SAMPLE ID #03011 - 18d

FRACTION 03C TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/01/87 11:35:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.35	7.36	7.36	7.36	7.36	0.005
CONDUCTIVITY	590	590	590	590	590	0.000
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

HOWARD LABS INC REPORT LAB # 87-12-080

RECEIVED: 12/01/87

Results by Sample

SAMPLE ID #03011 - 18d B.#76361 SAMPLE # 03 FRACTIONS: I

Date & Time Collected 12/01/87 11:35:00 Category

TOCOL 14 /100ml

SAMPLE ID #03012 - Well 9 SAMPLE # 04 FRACTIONS: A,B,C,D,E,F,G,H

Date & Time Collected 12/01/87 14:54:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	18 pCi/L	CA	84.700 mg/L
CD	<0.001 mg/L	CLI	23.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	0.050 mg/L	F	0.20 mg/L	FE	0.142 mg/L	HG	<0.0002 mg/L	K	2.060 mg/L	MG	24.100 mg/L
MN	0.067 mg/L	NA	12.700 mg/L	NI	<0.005 mg/L	NO3I	1.54 mg/L	PB	<0.005 mg/L	PHNLI	0.006 mg/L
PTI	0.08 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	64.0 mg/L	TDSI	364 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-080

Results by Sample

SAMPLE ID #03012 - Well 9

FRACTION 04A TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/01/87 14:54:00 Category

DATE EXTRACTED 12/03/87
CONCENTRATION FACTOR 100

DATE INJECTED 12/09/87
ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	103.0	% Recovery
Endrin	102.0	% Recovery
Methoxychlor	102.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.
N/A = Not Analyzed
<=Less Than
* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-080

Results by Sample

SAMPLE ID #03012 - Well 9

FRACTION 04A TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/01/87 14:54:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	13	16	15	19	16	2.17

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/01/87

HOWARD LABS INC REPORT

LAB # 87-12-080

Results by Sample

SAMPLE ID #03012 - Well 9

FRACTION 04H TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/01/87 14:54:00 Category

VERIFIED BY CMH

DATA FILE B1271

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	88.8 %	S1V
toluene-d6	96.4 %	S2V
bromofluorobenzene	93.1 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/01/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-080

SAMPLE ID #03012 - Well 9

FRACTION 04C TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/01/87 14:54:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.57	7.57	7.57	7.57	7.57	0.000
CONDUCTIVITY	540	540	540	540	540	0.000
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/01/87

HOWARD LABS INC REPORT LAB # 87-12-080

Results by Sample

SAMPLE ID #03012 - Well 9 B.#76362 SAMPLE # 04 FRACTIONS: I

Date & Time Collected 12/01/87 14:54:00 Category

TOCOL 31 /100ml

RECEIVED: 12/01/87

HOWARD LABS INC REPORT

LAB # 87-12-080

Results by Sample

SAMPLE ID #03013-Cl.Blank - #871113S FRACTION 05A TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected not specified Category

VERIFIED BY JSH

DATA FILE B1308

DATE INJECTED 12/08/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	98.4 %	S1V
toluene-d6	98.1 %	S2V
bromofluorobenzene	102.0 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/01/87

HOWARD LABS INC REPORT

LAB # 87-12-080

Results by Sample

SAMPLE ID #03013-Op.Blank - #871113S FRACTION 06A TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected not specified Category

VERIFIED BY JSH

DATA FILE B1307

DATE INJECTED 12/08/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	99.0 %	S1V
toluene-d6	103.0 %	S2V
bromofluorobenzene	99.4 %	S3V

CODE SV - Surrogate compound for QC check.

HOWARD LABS INC REPORT

LAB # 87-12-080

RECEIVED: 12/01/87

01/29/88 15:00:30

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02	FRACTION 03	FRACTION 04
POTASSIUM 40	<1.0	<1.0	<1.0	<1.0
TOTAL URANIUM	<1.0	<1.0	<1.0	<1.0
RADIUM 226	<1.0	<1.0	<1.0	<1.0
RADIUM 228	<1.0	<1.0	<1.0	<1.0
TECHNETIUM 99	<1.0	<1.0	<1.0	<1.0
THORIUM 228	<1.0	<1.0	<1.0	<1.0
THORIUM 230	<1.0	<1.0	<1.0	<1.0
THORIUM 232	<1.0	<1.0	<1.0	<1.0
CESIUM 137	<1.0	<1.0	<1.0	<1.0
STRONTIUM 90	<1.0	<1.0	<1.0	<1.0
RUTHENIUM 106	<1.0	<1.0	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0	<1.0	<1.0

HOWARD LABS INC REPORT LAB # 87-12-135

ECEIVED: 12/02/87

01/29/88 15:14:28

CLIENT WEST M O SAMPLES 11
COMPANY Westinghouse Materials Co.
ACILITY

PREPARED BY HOWARD LABORATORIES, INC.
3601 South Dixie Drive
P.O. Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie G. Webster
CERTIFIED BY

CONTACT D HOWARD

REPORT TO Westinghouse Materials Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 12/02/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01 #03014 - 8s
01 #03014 - 8s B.#76364
01 #03014 - 8s - DISSOLVED
02 #03015 - 8d
02 #03015 - 8d B.#76365
03 #03016 - 1s
03 #03016 - 1s B.#76366
04 #03021-Cl.Blank - #8711135
05 #03019 - QC-1
06 #03019 - QC-2
07 #03019 - QC-3
08 #03019 - QC-4
09 #03019 - QC-5
10 #03019 - QC-6
11 #03019 - QC-7

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
GCSCAN	GC Scan
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus,Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOC	Total Organic Carbon
TOCOL	Total Coliform,Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD.
ZN	Zinc

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-135

Results by Sample

SAMPLE ID #03014 - 8s

SAMPLE # 01 FRACTIONS: A, B, C, D, H, I

Date & Time Collected 12/02/87 09:30:00 Category

ALPHA	<1 pCi/L	BETA	16 pCi/L	CLI	18.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR6	<0.005 mg/L
F	0.16 mg/L	NO3I	<0.02 mg/L	PHNLI	<0.005 mg/L	PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L
SO4I	44.0 mg/L	TDSI	292 mg/L								

ECEIVED: 12/02/87

HOWARD LABS INC REPORT LAB # 87-12-135

Results by Sample

SAMPLE ID #03014 - 8s

FRACTION 01B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/02/87 09:30:00 Category

DATE EXTRACTED 12/03/87
CONCENTRATION FACTOR 92

DATE INJECTED 12/09/87
ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

GC/QA STANDARD RECOVERY DATA:

Lindane	111.0	% Recovery
Endrin	107.0	% Recovery
Methoxychlor	103.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.
N/A = Not Analyzed
<=Less Than
* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/02/87

HOWARD LABS INC REPORT LAB # 87-12-135

Results by Sample

SAMPLE ID #03014 - 8s FRACTION 01B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/02/87 09:30:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-135

Results by Sample

SAMPLE ID #03014 - 8s

FRACTION 01I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/02/87 09:30:00 Category

VERIFIED BY GMH

DATA FILE B1274

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L for the stable HSL, NPDES and other volatiles amenable to purge/trap analyses.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	94.9 %	S1V
toluene-d6	88.1 %	S2V
bromofluorobenzene	98.5 %	S3V

CODE SV - Surrogate compound for QC check.

ECEIVED: 12/02/87

HOWARD LABS INC REPORT LAB # 87-12-135

Results by Sample

AMPLE ID #03014 - 8s

FRACTION 01D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/02/87 09:30:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.45	7.45	7.46	7.46	7.46	0.006
CONDUCTIVITY	429	439	439	439	437	5.00
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/02/87

HOWARD LABS INC REPORT LAB # 87-12-135

Results by Sample

SAMPLE ID #03014 - 8s B.#76364 SAMPLE # 01 FRACTIONS: J
Date & Time Collected 12/02/87 09:30:00 Category

TOCOL <2 /100ml

SAMPLE ID #03014 - 8s - DISSOLVED SAMPLE # 01 FRACTIONS: E,F,G
Date & Time Collected 12/02/87 09:30:00 Category

AG	<0.030 mg/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	CA	50.000 mg/L	CD	<0.001 mg/L	CR	<0.005 mg/L
CU	<0.025 mg/L	FE	6.110 mg/L	HG	<0.0002 mg/L	K	2.760 mg/L	MG	24.800 mg/L	MN	0.438 mg/L
NA	11.700 mg/L	NI	<0.005 mg/L	PB	<0.005 mg/L	SE	<0.0025 mg/L	ZN	<0.020 mg/L		

SAMPLE ID #03015 - 8d SAMPLE # 02 FRACTIONS: A,B,C,D,E,F,G,H,I
Date & Time Collected 12/02/87 10:10:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	0.003 mg/L	BA	<0.200 mg/L	BETA	7 pCi/L	CA	78.000 mg/L
CD	<0.001 mg/L	CLI	12.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.16 mg/L	FE	2.540 mg/L	HG	<0.0002 mg/L	K	1.220 mg/L	MG	21.900 mg/L

177

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HOWARD LABS INC REPORT
Results by Sample

LAB # 87-12-135
Continued From Above

MN	0.387 mg/L	NA	13.300 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	0.07 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	9.0 mg/L	TDSI	344 mg/L
ZN	0.226 mg/L										

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-135

SAMPLE ID #03015 - 8d

FRACTION 02B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/02/87 10:10:00 Category

DATE EXTRACTED 12/04/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/09/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.2	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	111.0	% Recovery
Endrin	107.0	% Recoveey
Methoxychlor	103.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-135

Results by Sample

SAMPLE ID #03015 - 8d

FRACTION 02B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/02/87 10:10:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
Total Organic Halogen reported in ug/L
S. D. = Standard Deviation

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-135

Results by Sample

SAMPLE ID #03015 - 8d

FRACTION 02I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/02/87 10:10:00 Category

VERIFIED BY CMH

DATA FILE B1275

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	93.3 %	S1V
toluene-d6	94.7 %	S2V
bromofluorobenzene	97.3 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-135

Results by Sample

SAMPLE ID #03015 - 8d

FRACTION 02D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/02/87 10:10:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.44	7.45	7.45	7.45	7.45	0.005
CONDUCTIVITY	520	531	531	531	528	5.50
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-135

SAMPLE ID #03015 - 8d B.#76365

SAMPLE # 02 FRACTIONS: J

Date & Time Collected 12/02/87 10:10:00 Category

TOCOL <2 /100ml

SAMPLE ID #03016 - 1s

SAMPLE # 03 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/02/87 10:35:00 Category

AG	<0.030 mg/L	ALPHA	4 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	15 pCi/L	CA	95.500 mg/L
CD	<0.001 mg/L	CLI	18.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.11 mg/L	FE	2.010 mg/L	HG	<0.0002 mg/L	K	2.040 mg/L	MG	26.600 mg/L
MN	0.596 mg/L	NA	12.200 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	68.0 mg/L	TDSI	416 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-135

Results by Sample

SAMPLE ID #03016 - 1s

FRACTION 03B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/02/87 10:35:00 Category

DATE EXTRACTED 12/04/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/09/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	111.0	% Recovery
Endrin	107.0	% Recovery
Methoxychlor	103.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-135

Results by Sample

SAMPLE ID #03016 - 1s

FRACTION 03B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/02/87 10:35:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	43	43	34	37	39	3.90

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
Total Organic Halogen reported in ug/L
S. D. = Standard Deviation

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-135

Results by Sample

SAMPLE ID #03016 - 1s

FRACTION 03D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/02/87 10:35:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.42	7.42	7.43	7.43	7.43	0.006
CONDUCTIVITY	622	633	633	633	630	5.50
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-135

SAMPLE ID #03016 - 1s B.#76366

SAMPLE # 03 FRACTIONS: J

Date & Time Collected 12/02/87 10:35:00 Category

TOCOL <2 /100ml

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-135

Results by Sample

SAMPLE ID #03021-C1. Blank - #871113S FRACTION 04A TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected not specified Category

VERIFIED BY GMH

DATA FILE B1272

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected wtih a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	90.9 %	S1V
toluene-d6	97.8 %	S2V
bromofluorobenzene	96.6 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-135

SAMPLE ID #03019 - QC-1 SAMPLE # 05 FRACTIONS: A
Date & Time Collected not specified Category

CODI 14 mg/L TOC 6 mg/L

SAMPLE ID #03019 - QC-2 SAMPLE # 06 FRACTIONS: A
Date & Time Collected not specified Category

CODI 224 mg/L TOC 101 mg/L

SAMPLE ID #03019 - QC-3 SAMPLE # 07 FRACTIONS: A
Date & Time Collected not specified Category

AS 0.094 mg/L CD 0.022 mg/L CR 0.106 mg/L CU 0.105 mg/L FE 0.092 mg/L HG 0.0057 mg/L

MN 0.113 mg/L NI 0.103 mg/L PB 0.100 mg/L SE 0.025 mg/L ZN 0.092 mg/L

SAMPLE ID #03019 - QC-4 SAMPLE # 08 FRACTIONS: A
Date & Time Collected not specified Category

AG 0.009 mg/L

186

212

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-135

Results by Sample

SAMPLE ID #03019 - QC-5

FRACTION 09A TEST CODE GCSCAN NAME GC Scan

Date & Time Collected not specified Category

VERIFIED BY DLH

ANALYST WMC

DATE EXTRACTED 12/22/87

DATE INJECTED 12/23/87

COMPOUND	RESULT	UNITS
m-Dichlorobenzene	88.9	ug/L
p-Dichlorobenzene	88.8	ug/L
o-Dichlorobenzene	88.6	ug/L
hexachlorobutadiene	8.8	ug/L
2-Chloronaphthalene	85.8	ug/L

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-135

Results by Sample

SAMPLE ID #03019 - QC-6

FRACTION 10A TEST CODE GCSCAN NAME GC Scan

Date & Time Collected not specified Category

VERIFIED BY DLH

ANALYST WMC

DATE EXTRACTED 12/22/87

DATE INJECTED 12/23/87

COMPOUND	RESULT	UNITS
m-Dichlorobenzene	99.2	ug/L
p-Dichlorobenzene	99.4	ug/L
o-Dichlorobenzene	99.0	ug/L
1,2,4-Trichlorobenzene	95.3	ug/L

RECEIVED: 12/02/87

HOWARD LABS INC REPORT LAB # 87-12-135

Results by Sample

SAMPLE ID #03019 - QC-7

FRACTION 11A TEST CODE GCSCAN NAME GC Scan

Date & Time Collected not specified Category

VERIFIED BY DLH

ANALYST WMC

DATE EXTRACTED 12/22/87

DATE INJECTED 12/23/87

COMPOUND	RESULT	UNITS
Hexachloroethane	10.4	ug/L
Hexachlorobutadiene	10.2	ug/L
2-Chloronaphthalene	101.0	ug/L
Hexachlorobenzene	10.2	ug/L

RECEIVED: 12/02/87 01/29/88 15:14:28

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02	FRACTION 03
POTASSIUM 40	<1.0	<1.0	<1.0
TOTAL URANIUM	<1.0	<1.0	<1.0
RADIUM 226	<1.0	<1.0	<1.0
RADIUM 228	<1.0	<1.0	<1.0
TECHNETIUM 99	<1.0	<1.0	<1.0
THORIUM 228	<1.0	<1.0	<1.0
THORIUM 230	<1.0	<1.0	<1.0
THORIUM 232	<1.0	<1.0	<1.0
CESIUM 137	<1.0	<1.0	<1.0
STRONTIUM 90	<1.0	<1.0	<1.0
RUTHENIUM 106	<1.0	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0	<1.0

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

01/29/88 17:50:08

LAB # 87-12-136

CLIENT WEST M O SAMPLES 3
COMPANY Westinghouse Materials Co.
FACILITY

PREPARED BY HOWARD LABORATORIES, INC.
3601 South Dixie Drive
P.O.Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie G. Webster
CERTIFIED BY

CONTACT D HOWARD

REPORT TO Westinghouse Materials
Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 12/02/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 897

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01 #03017 - 1d
01 #03017 - 1d B.#76367
02 #03018 - 10
02 #03018 - 10 B.#76368
03 #03020 - 5
03 #03020 - 5 B.#76369

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus,Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform,Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD.
ZN	Zinc

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-136

Results by Sample

SAMPLE ID #03017 - 1d

SAMPLE # 01 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/02/87 10:50:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	<3 pCi/L	CA	82.200 mg/L
CD	<0.001 mg/L	CLI	20.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.11 mg/L	FE	4.790 mg/L	HG	<0.0002 mg/L	K	0.888 mg/L	MG	23.500 mg/L
MN	0.361 mg/L	NA	15.300 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	0.08 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	13.0 mg/L	TDSI	352 mg/L
ZN	0.402 mg/L										

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-136

SAMPLE ID #03017 - 1d

FRACTION 01B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/02/87 10:50:00 Category

DATE EXTRACTED 12/04/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/09/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	109.0	% Recovery
Endrin	119.0	% Recovery
Methoxychlor	103.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-136

SAMPLE ID #03017 - 1d

FRACTION 01B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/02/87 10:50:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-136

Results by Sample

SAMPLE ID #03017 - 1d

FRACTION 01I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/02/87 10:50:00 Category

VERIFIED BY GMH

DATA FILE B1276

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L for the stable HSL, NPDES and other volatiles amenable to purge/trap analyses.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	89.3 %	S1V
toluene-d6	94.6 %	S2V
bromofluorobenzene	98.6 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-136

SAMPLE ID #03017 - 1d

FRACTION 01D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/02/87 10:50:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.39	7.38	7.39	7.39	7.39	0.005
CONDUCTIVITY	582	592	592	592	590	5.00
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-136

Results by Sample

SAMPLE ID #03017 - 1d B.#76367

SAMPLE # 01 FRACTIONS: J

Date & Time Collected 12/02/87 10:50:00 Category

TOCOL <2 /100ml

SAMPLE ID #03018 - 10

SAMPLE # 02 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/02/87 11:50:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	62 pCi/L	CA	359.000 mg/L
CD	<0.001 mg/L	CLI	85.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.10 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	14.300 mg/L	MG	58.400 mg/L
MN	4.620 mg/L	NA	132.000 mg/L	NI	0.009 mg/L	NO3I	71.00 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	780.0 mg/L	TDSI	2,000 mg/L
ZN	<0.020 mg/L										

HOWARD LABS INC REPORT LAB # 87-12-136

RECEIVED: 12/02/87

Results by Sample

SAMPLE ID #03018 - 10

FRACTION 02B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/02/87 11:50:00 Category

DATE EXTRACTED 12/04/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/09/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	109.0	% Recovery
Endrin	119.0	% Recovery
Methoxychlor	103.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

HOWARD LABS INC REPORT LAB # 87-12-136

RECEIVED: 12/02/87

Results by Sample

SAMPLE ID #03018 - 10 FRACTION 02B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/02/87 11:50:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-136

Results by Sample

SAMPLE ID #03018 - 10

FRACTION 02I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/02/87 11:50:00 Category

VERIFIED BY CMH

DATA FILE B1277

DATE INJECTED 12/05/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	91.5 %	S1V
toluene-d6	94.0 %	S2V
bromofluorobenzene	92.5 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/02/87

HOWARD LABS INC REPORT LAB # 87-12-136

Results by Sample

SAMPLE ID #03018 - 10

FRACTION 02D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/02/87 11:50:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	6.85	6.86	6.86	6.86	6.86	0.005
CONDUCTIVITY	2,350	2,350	2,350	2,350	2,350	0.000
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-136

SAMPLE ID #03018 - 10 B.#76368

SAMPLE # 02 FRACTIONS: J

Date & Time Collected 12/02/87 11:50:00 Category

TOCOL <2 /100ml

SAMPLE ID #03020 - 5

SAMPLE # 03 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/02/87 13:40:00 Category

AG	<0.030 mg/L	ALPHA	2 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	9 pCi/L	CA	94.900 mg/L
CD	<0.001 mg/L	CLI	18.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.09 mg/L	FE	2.060 mg/L	HG	<0.0002 mg/L	K	2.080 mg/L	MG	26.400 mg/L
MN	0.502 mg/L	NA	9.000 mg/L	NI	<0.005 mg/L	NO3I	0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	72.0 mg/L	TDSI	464 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-136

SAMPLE ID #03020 - 5

FRACTION 03B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/02/87 13:40:00 Category

DATE EXTRACTED 12/04/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/09/87

ANALYST KH

VERIFIED BY WMG

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	109.0	% Recovery
Endrin	119.0	% Recovery
Methoxychlor	103.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-136

Results by Sample

SAMPLE ID #03020 - 5

FRACTION 03B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/02/87 13:40:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	31	27	26	30	29	2.06

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

HOWARD LABS INC REPORT LAB # 87-12-136

RECEIVED: 12/02/87

Results by Sample

SAMPLE ID #03020 - 5 FRACTION 03D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/02/87 13:40:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.30	7.30	7.30	7.30	7.30	0.000
CONDUCTIVITY	633	633	633	633	633	0.000
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/02/87

HOWARD LABS INC REPORT

LAB # 87-12-136

Results by Sample

SAMPLE ID #03020 - 5 B.#76369

SAMPLE # 03 FRACTIONS: J

Date & Time Collected 12/02/87 13:40:00 Category

TOCOL <2 /100ml

HOWARD LABS INC REPORT

LAB # 87-12-136

RECEIVED: 12/02/87

01/29/88 17:50:08

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02	FRACTION 03
POTASSIUM 40	<1.0	<1.0	<1.0
TOTAL URANIUM	<1.0	<1.0	<1.0
RADIUM 226	<1.0	<1.0	<1.0
RADIUM 228	<1.0	<1.0	<1.0
TECHNETIUM 99	<1.0	<1.0	<1.0
THORIUM 228	<1.0	<1.0	<1.0
THORIUM 230	<1.0	<1.0	<1.0
THORIUM 232	<1.0	<1.0	<1.0
CESIUM 137	<1.0	<1.0	<1.0
STRONTIUM 90	<1.0	<1.0	<1.0
RUTHENIUM 106	<1.0	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0	<1.0

HOWARD LABS INC REPORT LAB # 87-12-233

RECEIVED: 12/03/87

01/29/88 16:28:05

CLIENT WEST M O SAMPLES 4
COMPANY Westinghouse Materials Co.
FACILITY

REPORT TO Westinghouse Materials
Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 12/03/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

PREPARED BY HOWARD LABORATORIES, INC.
3601 South Dixie Drive
P.O. Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie G. Webster
CERTIFIED BY

CONTACT D HOWARD

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01 #03023 - 4
01 #03023 - 4 B.#76373
02 #03024 - 4
02 #03024 - 4 B.#76374
03 #03025 - 3
03 #03025 - 3 B.#76375
04 #03026 - 19s
04 #03026 - 19s B.#76376

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus, Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform, Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD
ZN	Zinc

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-233

SAMPLE ID #03023 - 4

SAMPLE # 01 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/03/87 09:25:00 Category

AG	<0.030 mg/L	ALPHA	2 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	17 pCi/L	CA	81.600 mg/L
CD	<0.001 mg/L	CLI	25.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.39 mg/L	FE	0.183 mg/L	HG	<0.0002 mg/L	K	2.810 mg/L	MG	21.000 mg/L
MN	<0.015 mg/L	NA	14.000 mg/L	NI	<0.005 mg/L	NO3I	0.63 mg/L	PB	<0.005 mg/L	PHNLI	0.006 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	44.0 mg/L	TDSI	380 mg/L
ZN	<0.020 mg/L										

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RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-233

SAMPLE ID #03023 - 4

FRACTION 01B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/03/87 09:25:00 Category

DATE EXTRACTED 12/04/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/08/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	99.0	% Recovery
Endrin	101.0	% Recovery
Methoxychlor	103.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-233

SAMPLE ID #03023 - 4

FRACTION 01B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/03/87 09:25:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	57	55	55	50	54	2.99

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

PAGE 5
RECEIVED: 12/03/87

HOWARD LABS INC REPORT

LAB # 87-12-233

Results by Sample

SAMPLE ID #03023 - 4

FRACTION 01I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES
Date & Time Collected 12/03/87 09:25:00 Category

VERIFIED BY JSH

DATA FILE B1326
DATE INJECTED 12/09/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with tests specific for the HSL, NPDES, Drinking Water standards and over 200 other volatiles including the alkyl benzenes and aliphatics.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	90.5 %	S1V
toluene-d6	99.9 %	S2V
bromofluorobenzene	105.0 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-233

SAMPLE ID #03023 - 4

FRACTION 01D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/03/87 09:25:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.39	7.39	7.39	7.39	7.39	0.000
CONDUCTIVITY	550	560	560	560	558	5.00
TOTAL ORGANIC CARBON	1	1	1	1	1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-233

SAMPLE ID #03023 - 4 B.#76373

SAMPLE # 01 FRACTIONS: J

Date & Time Collected 12/03/87 09:25:00 Category

TOCOL 9 /100ml

SAMPLE ID #03024 - 4

SAMPLE # 02 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/03/87 09:25:00 Category

AG	<0.030 mg/L	ALPHA	3 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	19 pCi/L	CA	83.000 mg/L
CD	<0.001 mg/L	CLI	24.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.32 mg/L	FE	0.179 mg/L	HG	<0.0002 mg/L	K	2.830 mg/L	MG	21.200 mg/L
MN	<0.015 mg/L	NA	14.400 mg/L	NI	<0.005 mg/L	NO3I	0.63 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	52.0 mg/L	TDSI	336 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-233

SAMPLE ID #03024 - 4

FRACTION 02B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/03/87 09:25:00 Category

DATE EXTRACTED 12/04/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/08/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	99.0	% Recovery
Endrin	101.0	% Recovery
Methoxychlor	103.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-233

SAMPLE ID #03024 - 4

FRACTION 02B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/03/87 09:25:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

LAB # 87-12-233

Results by Sample

SAMPLE ID #03024 - 4

FRACTION 02I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/03/87 09:25:00 Category

VERIFIED BY CMH

DATA FILE B1327

DATE INJECTED 12/09/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with detection limits of <0.50 ug/L for the stable HSL and other volatile compounds.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	102.0 %	S1V
toluene-d6	96.8 %	S2V
bromofluorobenzene	100.0 %	S3V

CODE SV - Surrogate compound for QC check.

HOWARD LABS INC REPORT LAB # 87-12-233

RECEIVED: 12/03/87

Results by Sample

SAMPLE ID #03024 - 4 FRACTION 02D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/03/87 09:25:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.37	7.37	7.38	7.38	7.38	0.006
CONDUCTIVITY	550	560	560	560	558	5.00
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-233

SAMPLE ID #03024 - 4 B.#76374

SAMPLE # 02 FRACTIONS: J

Date & Time Collected 12/03/87 09:25:00 Category

TOCOL 23 /100ml

SAMPLE ID #03025 - 3

SAMPLE # 03 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/03/87 10:17:00 Category

AG	<0.030 mg/L	ALPHA	2,980 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	14,100 pCi/L	CA	84.100 mg/L
CD	<0.001 mg/L	CLI	21.0 mg/L	CN	<0.005 mg/L	CODI	17 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	1.64 mg/L	FE	0.952 mg/L	HG	<0.0002 mg/L	K	2.700 mg/L	MG	23.400 mg/L
MN	0.385 mg/L	NA	12.400 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	SEE TEXT pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	92.0 mg/L	TDSI	404 mg/L
ZN	<0.020 mg/L										

212

222

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-233

SAMPLE ID #03025 - 3

FRACTION 03B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/03/87 10:17:00 Category

DATE EXTRACTED 12/04/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/08/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 2.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 2.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/03/87

HOWARD LABS INC REPORT LAB # 87-12-233

Results by Sample

SAMPLE ID #03025 - 3

FRACTION 03B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/03/87 10:17:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	50	54	48	51	51	2.16

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/03/87

HOWARD LABS INC REPORT LAB # 87-12-233

Results by Sample

SAMPLE ID #03025 - 3

FRACTION 03D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/03/87 10:17:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.35	7.35	7.36	7.36	7.36	0.006
CONDUCTIVITY	560	580	580	580	575	10.00
TOTAL ORGANIC CARBON	1	1	1	1	1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-233

SAMPLE ID #03025 - 3 B.#76375

SAMPLE # 03 FRACTIONS: J

Date & Time Collected 12/03/87 10:17:00 Category

TOCOL 180 /100ml

SAMPLE ID #03026 - 19s

SAMPLE # 04 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/03/87 10:59:00 Category

AG	<0.030 mg/L	ALPHA	9 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	1,290 pCi/L	CA	131.000 mg/L
CD	<0.001 mg/L	CLI	46.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.17 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	3.420 mg/L	MG	30.500 mg/L
MN	<0.015 mg/L	NA	26.600 mg/L	NI	<0.005 mg/L	NO3I	34.20 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	92.0 mg/L	TDSI	712 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/03/87

HOWARD LABS INC REPORT LAB # 87-12-233

Results by Sample

SAMPLE ID #03026 - 19s

FRACTION 04B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/03/87 10:59:00 Category

DATE EXTRACTED 12/04/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/08/87

ANALYST KH

VERIFIED BY WMG

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	99.0	% Recovery
Endrin	101.0	% Recovery
Methoxychlor	103.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/03/87

HOWARD LABS INC REPORT LAB # 87-12-233

Results by Sample

SAMPLE ID #03026 - 19s

FRACTION 04B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/03/87 10:59:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	142	141	147	141	143	2.49

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
Total Organic Halogen reported in ug/L
S. D. = Standard Deviation

RECEIVED: 12/03/87

HOWARD LABS INC REPORT LAB # 87-12-233

Results by Sample

SAMPLE ID #03026 - 19s

FRACTION 04I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/03/87 10:59:00 Category

VERIFIED BY GMH

DATA FILE B1328

DATE INJECTED 12/09/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	97.8 %	S1V
toluene-d6	99.6 %	S2V
bromofluorobenzene	92.8 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/03/87

HOWARD LABS INC REPORT LAB # 87-12-233

Results by Sample

SAMPLE ID #03026 - 19s

FRACTION 04D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/03/87 10:59:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.32	7.32	7.32	7.33	7.32	0.005
CONDUCTIVITY	960	960	960	960	960	0.000
TOTAL ORGANIC CARBON	1	1	1	1	1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-233

SAMPLE ID #03026 - 19s B.#76376

SAMPLE # 04 FRACTIONS: J

Date & Time Collected 12/03/87 10:59:00 Category

TOCOL <2 /100ml

RECEIVED: 12/03/87

HOWARD LABS INC REPORT
01/29/88 16:28:05

LAB # 87-12-233

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02	FRACTION 03	FRACTION 04
POTASSIUM 40	<1.0	<1.0	<1.0	<1.0
TOTAL URANIUM	<1.0	<1.0	11,700	7
RADIUM 226	<1.0	<1.0	16	<1.0
RADIUM 228	<1.0	<1.0	294	<1.0
TECHNETIUM 99	<1.0	<1.0	<1.0	<1.0
THORIUM 228	<1.0	<1.0	<1.0	<1.0
THORIUM 230	<1.0	<1.0	<1.0	<1.0
THORIUM 232	<1.0	<1.0	<1.0	<1.0
CESIUM 137	<1.0	<1.0	<1.0	<1.0
STRONTIUM 90	<1.0	<1.0	<1.0	<1.0
RUTHENIUM 106	<1.0	<1.0	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0	<1.0	<1.0

RECEIVED: 12/03/87

HOWARD LABS INC REPORT
01/29/88 16:11:34

LAB # 87-12-234

CLIENT WEST M O SAMPLES 5
COMPANY Westinghouse Materials Co.
FACILITY

REPORT Westinghouse Materials
TO Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 12/03/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

PREPARED BY HOWARD LABORATORIES, INC.
3601 South Dixie Drive
P.O. Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie G. Webster
CERTIFIED BY

CONTACT D HOWARD

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01 #03027 - 19d
01 #03027 - 19d B.#76377
02 #03028 - 21s
02 #03028 - 21s B.#76378
03 #03029 - 22s
03 #03029 - 22s B.#76379
04 #03030-Cl.Blank - #871113S
05 #03030-Op.Blank - #871113S

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus,Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform,Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD.
ZN	Zinc

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-234

SAMPLE ID #03027 - 19d

SAMPLE # 01 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/03/87 11:25:00 Category

AG	<0.030 mg/L	ALPHA	2 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	12 pCi/L	CA	201.000 mg/L
CD	<0.001 mg/L	CLI	52.0 mg/L	CN	0.006 mg/L	CODI	<10 mg/L	CR	0.007 mg/L	CR6	<0.007 mg/L
CU	<0.025 mg/L	F	0.16 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	6.160 mg/L	MG	25.100 mg/L
MN	2.370 mg/L	NA	45.100 mg/L	NI	0.008 mg/L	NO3I	0.13 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	400.0 mg/L	TDSI	908 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-234

SAMPLE ID #03027 - 19d

FRACTION 01B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/03/87 11:25:00 Category

DATE EXTRACTED 12/07/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/10/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	<2.0	
58-89-9	Lindane	<0.2	
72-20-8	Endrin	<0.2	
72-43-5	Methoxychlor	<0.2	
8001-35-2	Toxaphene	<0.5	
94-75-7	2,4-D	<1.0	
93-72-1	2,4,5-TP Silvex	<0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	<1.0	
51218-45-2	Metolachlor	<1.0	
21725-46-2	Cyanazine	<1.0	
21087-64-9	Metribuzin	<1.0	
330-55-2	Linuron	<1.0	
1563-66-2	Carbofuran	<1.0	
944-22-9	Fonofos	<1.0	
122-34-9	Simizine	<1.0	
13071-79-9	Terbufos	<1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	102.0	% Recovery
Endrin	99.0	% Recovery
Methoxychlor	102.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-234

SAMPLE ID #03027 - 19d

FRACTION 01B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/03/87 11:25:00 Category

VERIFIED BY KM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

LAB # 87-12-234

Results by Sample

SAMPLE ID #03027 - 19d

FRACTION 01I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/03/87 11:25:00 Category

VERIFIED BY CMH

DATA FILE B1329

DATE INJECTED 12/09/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L for all of the HSL, NPDES and drinking water volatiles which are stable.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	90.0 %	S1V
toluene-d6	106.0 %	S2V
bromofluorobenzene	94.1 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

LAB # 87-12-234

Results by Sample

SAMPLE ID #03027 - 19d

FRACTION 01D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/03/87 11:25:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	6.97	6.98	6.98	6.98	6.98	0.005
CONDUCTIVITY	1,180	1,180	1,180	1,180	1,180	0.000
TOTAL ORGANIC CARBON	1	1	1	1	1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

HOWARD LABS INC REPORT

LAB # 87-12-234

RECEIVED: 12/03/87

Results by Sample

SAMPLE ID #03027 - 19d B.#76377

SAMPLE # 01 FRACTIONS: J

Date & Time Collected 12/03/87 11:25:00 Category

TOCOL <2 /100ml

SAMPLE ID #03028 - 21s

SAMPLE # 02 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/03/87 13:30:00 Category

AG	<0.030 mg/L	ALPHA	31 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	2,770 pCi/L	CA	167.000 mg/L
CD	<0.001 mg/L	CLI	43.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.16 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	7.280 mg/L	MG	28.400 mg/L
MN	<0.015 mg/L	NA	57.600 mg/L	NI	<0.005 mg/L	NO3I	76.70 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	SEE TEXT pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	88.0 mg/L	TDSI	988 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

LAB # 87-12-234

Results by Sample

SAMPLE ID #0302B - 21s

FRACTION 02B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/03/87 13:30:00 Category

DATE EXTRACTED 12/06/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/08/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	102.0	% Recovery
Endrin	99.0	% Recovery
Methoxychlor	102.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

HOWARD LABS INC REPORT LAB # 87-12-234

RECEIVED: 12/03/87

Results by Sample

SAMPLE ID #03028 - 21s

FRACTION 02B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/03/87 13:30:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

LAB # 87-12-234

Results by Sample

SAMPLE ID #03028 - 21s

FRACTION 02I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/03/87 13:30:00 Category

VERIFIED BY GMH

DATA FILE B1330

DATE INJECTED 12/09/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	88.2 %	S1V
toluene-d6	94.2 %	S2V
bromofluorobenzene	88.8 %	S3V

CODE SV - Surrogate compound for QC check.

HOWARD LABS INC REPORT LAB # 87-12-234

RECEIVED: 12/03/87

Results by Sample

SAMPLE ID #03028 - 21s FRACTION 02D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/03/87 13:30:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.25	7.26	7.26	7.26	7.26	0.005
CONDUCTIVITY	1,260	1,280	1,280	1,280	1,280	10.00
TOTAL ORGANIC CARBON	1	1	1	1	1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-234

SAMPLE ID #03028 - 21s B.#76378 SAMPLE # 02 FRACTIONS: J

Date & Time Collected 12/03/87 13:30:00 Category

TOCOL <2 /100ml

SAMPLE ID #03029 - 22s SAMPLE # 03 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/03/87 14:05:00 Category

AG	<0.030 mg/L	ALPHA	3 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	1,220 pCi/L	CA	144.000 mg/L		
CD	<0.001 mg/L	CLI	89.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L		
CU	<0.025 mg/L	F	0.46 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	4.840 mg/L	MG	46.800 mg/L		
MN	<0.015 mg/L	NA	32.200 mg/L	NI	<0.005 mg/L	NO3I	52.00 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L		
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	108.0 mg/L	TDSI	864 mg/L		
ZN	0.028 mg/L												

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-234

SAMPLE ID #03029 - 22s

FRACTION 03B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/03/87 14:05:00 Category

DATE EXTRACTED 12/07/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/16/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	102.0	% Recovery
Endrin	99.0	% Recovery
Methoxychlor	102.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-234

SAMPLE ID #03029 - 22s

FRACTION 03B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/03/87 14:05:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	97	82	91	83	88	6.14

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

LAB # 87-12-234

Results by Sample

SAMPLE ID #03029 - 22s

FRACTION 03I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/03/87 14:05:00 Category

VERIFIED BY CMH

DATA FILE B1331

DATE INJECTED 12/09/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detecded with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	85.8 %	S1V
toluene-d6	90.2 %	S2V
bromofluorobenzene	91.8 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/03/87

HOWARD LABS INC REPORT LAB # 87-12-234

Results by Sample

SAMPLE ID #03029 - 22s

FRACTION 03D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/03/87 14:05:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.27	7.27	7.27	7.27	7.27	0.000
CONDUCTIVITY	1,200	1,220	1,220	1,220	1,220	10.00
TOTAL ORGANIC CARBON	1	1	1	1	1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-234

SAMPLE ID #03029 - 22s B.#76379

SAMPLE # 03 FRACTIONS: J

Date & Time Collected 12/03/87 14:05:00 Category

TOCOL <2 /100ml

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

LAB # 87-12-234

Results by Sample

SAMPLE ID #03030-Cl.Blank - #871113S FRACTION 04A TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected not specified Category

VERIFIED BY GMH

DATA FILE B1333

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	84.6 %	S1V
toluene-d6	105.0 %	S2V
bromofluorobenzene	95.7 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/03/87

HOWARD LABS INC REPORT

LAB # 87-12-234

Results by Sample

SAMPLE ID #03030-Op.Blank - #871113S FRACTION 05A TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected not specified Category

VERIFIED BY CMH

DATA FILE B1332

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	87.0 %	S1V
toluene-d6	97.1 %	S2V
bromofluorobenzene	87.9 %	S3V

CODE SV - Surrogate compound for QC check.

HOWARD LABS INC REPORT LAB # 87-12-234

RECEIVED: 12/03/87 01/29/88 16:11:34

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02	FRACTION 03
POTASSIUM 40	<1.0	<1.0	<1.0
TOTAL URANIUM	<1.0	9	<1.0
RADIUM 226	<1.0	<1.0	<1.0
RADIUM 228	<1.0	12	<1.0
TECHNETIUM 99	<1.0	<1.0	<1.0
THORIUM 228	<1.0	<1.0	<1.0
THORIUM 230	<1.0	<1.0	<1.0
THORIUM 232	<1.0	<1.0	<1.0
CESIUM 137	<1.0	<1.0	<1.0
STRONTIUM 90	<1.0	22	<1.0
RUTHENIUM 106	<1.0	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0	<1.0

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

01/29/88 18:05:48

LAB # 87-12-278

CLIENT WEST M O SAMPLES 4
COMPANY Westinghouse Materials Co.
FACILITY

PREPARED BY HOWARD LABORATORIES, INC.
3601 South Dixie Drive
P.O. Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie D. Walters
CERTIFIED BY

CONTACT D HOWARD

REPORT TO Westinghouse Materials
Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 12/04/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01	#03031 - P-1	
01	#03031 - P-1	B.#76380
02	#03032 - P-2	
02	#03032 - P-2	B.#76381
03	#03033 - 13s	
03	#03033 - 13s	B.#76382
04	#03034 - 13s	
04	#03034 - 13s	B.#76383

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus, Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform, Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD
ZN	Zinc

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-278

SAMPLE ID #03031 - P-1

SAMPLE # 01 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/04/87 08:33:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	6 pCi/L	CA	126.000 mg/L
CD	<0.001 mg/L	CLI	40.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.15 mg/L	FE	5.700 mg/L	HG	<0.0002 mg/L	K	4.690 mg/L	MG	34.900 mg/L
MN	0.423 mg/L	NA	37.200 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	0.12 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	140.0 mg/L	TDSI	604 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-278

SAMPLE ID #03031 - P-1

FRACTION 01B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/04/87 08:33:00 Category

DATE EXTRACTED 12/08/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/10/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

GC/QA STANDARD RECOVERY DATA:

Lindane	117.0	% Recovery
Endrin	109.0	% Recovery
Methoxychlor	118.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

HOWARD LABS INC REPORT LAB # 87-12-278

RECEIVED: 12/04/87

Results by Sample

SAMPLE ID #03031 - P-1 FRACTION 01B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/04/87 08:33:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	17	16	12	18	16	2.28

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-278

Results by Sample

SAMPLE ID #03031 - P-1

FRACTION 01D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/04/87 08:33:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.26	7.26	7.26	7.26	7.26	0.000
CONDUCTIVITY	1,020	1,020	1,020	1,020	1,020	0.00
TOTAL ORGANIC CARBON	1	1	1	1	1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-278

SAMPLE ID #03031 - P-1 B.#76380 SAMPLE # 01 FRACTIONS: J

Date & Time Collected 12/04/87 08:33:00 Category

TOCOL <2 /100ml

SAMPLE ID #03032 - P-2 SAMPLE # 02 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/04/87 09:15:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	4 pCi/L	CA	103.000 mg/L
CD	<0.001 mg/L	CLI	32.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.12 mg/L	FE	3.600 mg/L	HG	<0.0002 mg/L	K	1.800 mg/L	MG	29.300 mg/L
MN	0.400 mg/L	NA	20.000 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	0.11 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	36.0 mg/L	TDSI	436 mg/L
ZN	<0.020 mg/L										

HOWARD LABS INC REPORT LAB # 87-12-278

RECEIVED: 12/04/87

Results by Sample

SAMPLE ID #03032 - P-2

FRACTION 02B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/04/87 09:15:00 Category

DATE EXTRACTED 12/07/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/10/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	117.0	% Recovery
Endrin	109.0	% Recovery
Methoxychlor	118.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-278

Results by Sample

SAMPLE ID #03032 - P-2

FRACTION 02B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/04/87 09:15:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	17	21	23	16	19	2.86

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

LAB # 87-12-278

Results by Sample

SAMPLE ID #03032 - P-2

FRACTION 02D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/04/87 09:15:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.37	7.37	7.38	7.37	7.37	0.005
CONDUCTIVITY	765	776	776	776	773	5.50
TOTAL ORGANIC CARBON	1	1	1	1	1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-278

SAMPLE ID #03032 - P-2 B.#76381

SAMPLE # 02 FRACTIONS: J

Date & Time Collected 12/04/87 09:15:00 Category

TOCOL <2 /100ml

SAMPLE ID #03033 - 13s

SAMPLE # 03 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/04/87 10:24:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	5 pCi/L	CA	108.000 mg/L
CD	<0.001 mg/L	CLI	26.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.11 mg/L	FE	2.530 mg/L	HG	<0.0002 mg/L	K	2.590 mg/L	MG	27.800 mg/L
MN	0.176 mg/L	NA	12.900 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	116.0 mg/L	TDSI	448 mg/L
ZN	0.028 mg/L										

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-278

Results by Sample

SAMPLE ID #03033 - 13s

FRACTION 03B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/04/87 10:24:00 Category

DATE EXTRACTED 12/07/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/10/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	117.0	% Recovery
Endrin	109.0	% Recovery
Methoxychlor	118.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-278

Results by Sample

SAMPLE ID #03033 - 13s

FRACTION 03B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/04/87 10:24:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

LAB # 87-12-278

Results by Sample

SAMPLE ID #03033 - 13s

FRACTION 03I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/04/87 10:24:00 Category

VERIFIED BY JSH

DATA FILE B1342

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected using US EPA Method 8240 per SW 846 protocol. This method determines all HSL, NPDES and drinking water volatiles which are stable and amenable to the purge/trap technology. The compounds such as acrolein, acrylonitrile, 2-chloroethyl-vinyl ether are not stable.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	100.0 %	S1V
toluene-d6	98.2 %	S2V
bromofluorobenzene	104.0 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

LAB # 87-12-278

Results by Sample

SAMPLE ID #03033 - 13s

FRACTION 03D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/04/87 10:24:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.17	7.17	7.17	7.17	7.17	0.005
CONDUCTIVITY	775	775	775	775	775	0.00
TOTAL ORGANIC CARBON	1	2	2	2	1.75	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

HOWARD LABS INC REPORT LAB # 87-12-278

RECEIVED: 12/04/87

Results by Sample

SAMPLE ID #03033 - 13s B.#76382 SAMPLE # 03 FRACTIONS: J

Date & Time Collected 12/04/87 10:24:00 Category

TOCOL <2 /100ml

SAMPLE ID #03034 - 13s SAMPLE # 04 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/04/87 10:24:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	6 pCi/L	CA	109.000 mg/L
CD	<0.001 mg/L	CLI	27.0 mg/L	CN	0.006 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.13 mg/L	FE	2.510 mg/L	HG	<0.0002 mg/L	K	2.630 mg/L	MG	27.600 mg/L
MN	0.186 mg/L	NA	13.800 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	112.0 mg/L	TDSI	608 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-278

SAMPLE ID #03034 - 13s

FRACTION 04B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/04/87 10:24:00 Category

DATE EXTRACTED 12/07/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/10/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	117.0	% Recovery
Endrin	109.0	% Recovery
Methoxychlor	118.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

HOWARD LABS INC REPORT LAB # 87-12-278

RECEIVED: 12/04/87

Results by Sample

SAMPLE ID #03034 - 13s

FRACTION 04B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/04/87 10:24:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	61	62	46	87	64	14.7

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-278

Results by Sample

SAMPLE ID #03034 - 13s

FRACTION 04I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/04/87 10:24:00 Category

VERIFIED BY JSH

DATA FILE B1343

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds were detected within the HSL, NPDES and drinking water groups. The detection limit is <0.50 ug/L for those stable compounds.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	109.0 %	S1V
toluene-d6	87.9 %	S2V
bromofluorobenzene	92.5 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-278

Results by Sample

SAMPLE ID #03034 - 13s

FRACTION 04D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/04/87 10:24:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.15	7.15	7.16	7.16	7.16	0.006
CONDUCTIVITY	765	765	765	765	765	0.00
TOTAL ORGANIC CARBON	1	2	2	2	1.78	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-278

SAMPLE ID #03034 - 13s B.#76383

SAMPLE # 04 FRACTIONS: J

Date & Time Collected 12/04/87 10:24:00 Category

TOCOL <2 /100ml

HOWARD LABS INC REPORT

LAB # 87-12-278

RECEIVED: 12/04/87

01/29/88 18:05:48

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02	FRACTION 03	FRACTION 04
POTASSIUM 40	<1.0	<1.0	<1.0	<1.0
TOTAL URANIUM	<1.0	<1.0	<1.0	<1.0
RADIUM 226	<1.0	<1.0	<1.0	<1.0
RADIUM 228	<1.0	<1.0	<1.0	<1.0
TECHNETIUM 99	<1.0	<1.0	<1.0	<1.0
THORIUM 228	<1.0	<1.0	<1.0	<1.0
THORIUM 230	<1.0	<1.0	<1.0	<1.0
THORIUM 232	<1.0	<1.0	<1.0	<1.0
CESIUM 137	<1.0	<1.0	<1.0	<1.0
STRONTIUM 90	<1.0	<1.0	<1.0	<1.0
RUTHENIUM 106	<1.0	<1.0	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0	<1.0	<1.0

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-279
01/29/88 18:14:15

CLIENT WEST M O SAMPLES 6
COMPANY Westinghouse Materials Co.
FACILITY

REPORT Westinghouse Materials
TO Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 12/04/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

PREPARED BY HOWARD LABORATORIES, INC.
3601 South Dixie Drive
P.O. Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie H. Webster
CERTIFIED BY

CONTACT D HOWARD

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01 #03035 - 15s
01 #03035 - 15s B.#76384
02 #03036 - 17d
02 #03036 - 17d B.#76385
03 #03037 - 17s
03 #03037 - 17s B.#76386
04 #03038 - 20d
04 #03038 - 20d B.#76387
05 #03040-Cl.Blank - #871113S
06 #03040-Op.Blank - #871113S

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus, Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform, Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD.
ZN	Zinc

ECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-279

Results by Sample

SAMPLE ID #03035 - 15s

SAMPLE # 01 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/04/87 12:47:00 Category

AG	<0.030 mg/L	ALPHA	35 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	95 pCi/L	CA	77.800 mg/L
CD	<0.001 mg/L	CLI	19.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.18 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	2.440 mg/L	MG	20.400 mg/L
MN	<0.015 mg/L	NA	11.000 mg/L	NI	<0.005 mg/L	NO3I	1.98 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	60.0 mg/L	TDSI	335 mg/L
ZN	<0.020 mg/L										

HOWARD LABS INC REPORT LAB # 87-12-279

ECEIVED: 12/04/87

Results by Sample

AMPLE ID #03035 - 15s

FRACTION 01B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/04/87 12:47:00 Category

DATE EXTRACTED 12/08/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/10/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	92.0	% Recovery
Endrin	82.0	% Recovery
Methoxychlor	91.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

HOWARD LABS INC REPORT LAB # 87-12-279

ECEIVED: 12/04/87

Results by Sample

AMPLE ID #03035 - 15s

FRACTION 01B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/04/87 12:47:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	77	72	60	61	68	7.23

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

ECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-279

Results by Sample

AMPLE ID #03035 - 15s

FRACTION 01I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/04/87 12:47:00 Category

VERIFIED BY CMH

DATA FILE D0731

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
1,1,1-Trichloroethane	5.13	ug/L
No other volatiles detected above 0.50 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	87.4 %	S1V
toluene-d6	91.8 %	S2V
bromofluorobenzene	94.6 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-279

SAMPLE ID #03035 - 15s

FRACTION 01D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/04/87 12:47:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.45	7.44	7.45	7.45	7.45	0.000
CONDUCTIVITY	561	561	561	561	561	0.000
TOTAL ORGANIC CARBON	3	2	2	2	2.25	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-279

Results by Sample

SAMPLE ID #03035 - 15s B.#76384 SAMPLE # 01 FRACTIONS: J

Date & Time Collected 12/04/87 12:47:00 Category

TOCOL <2 /100ml

SAMPLE ID #03036 - 17d SAMPLE # 02 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/04/87 13:50:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	<3 pCi/L	CA	95.100 mg/L
CD	<0.001 mg/L	CLI	21.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.16 mg/L	FE	1.640 mg/L	HG	<0.0002 mg/L	K	1.980 mg/L	MG	20.200 mg/L
MN	0.267 mg/L	NA	8.900 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	76.0 mg/L	TDSI	420 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-279

Results by Sample

SAMPLE ID #03036 - 17d

FRACTION 02B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/04/87 13:50:00 Category

DATE EXTRACTED 12/08/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/10/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	92.0	% Recovery
Endrin	82.0	% Recovery
Methoxychlor	91.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-279

SAMPLE ID #03036 - 17d

FRACTION 02B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/04/87 13:50:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	16	24	24	19	21	3.42

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-279

Results by Sample

SAMPLE ID #03036 - 17d

FRACTION 02I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/04/87 13:50:00 Category

VERIFIED BY GMH

DATA FILE D0732

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		
This test covers all of the stable HSL, NPDES and drinking water volatile compounds.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	100.0 %	S1V
toluene-d6	95.0 %	S2V
bromofluorobenzene	87.8 %	S3V

CODE SV - Surrogate compound for QC check.

ECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-279

Results by Sample

AMPLE ID #03036 - 17d

FRACTION 02D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/04/87 13:50:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	4.26	7.26	7.27	7.26	7.26	0.005
CONDUCTIVITY	633	633	633	633	633	0.000
TOTAL ORGANIC CARBON	2	1	1	1	1.25	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

ECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-279

Results by Sample

SAMPLE ID #03036 - 17d B.#76385 SAMPLE # 02 FRACTIONS: J

Date & Time Collected 12/04/87 13:50:00 Category

TOCOL <2 /100ml

SAMPLE ID #03037 - 17s SAMPLE # 03 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/04/87 13:35:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	<3 pCi/L	CA	124.000 mg/L
CD	<0.001 mg/L	CLI	33.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.13 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	2.000 mg/L	MG	26.600 mg/L
MN	0.122 mg/L	NA	10.600 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	100.0 mg/L	TDSI	527 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

LAB # 87-12-279

Results by Sample

SAMPLE ID #03037 - 17s

FRACTION 03B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/04/87 13:35:00 Category

DATE EXTRACTED 12/08/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/10/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	<2.0	
58-89-9	Lindane	<0.2	
72-20-8	Endrin	<0.2	
72-43-5	Methoxychlor	<0.2	
8001-35-2	Toxaphene	<0.5	
94-75-7	2,4-D	<1.0	
93-72-1	2,4,5-TP Silvex	<0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	<1.0	
51218-45-2	Metolachlor	<1.0	
21725-46-2	Cyanazine	<1.0	
21087-64-9	Metribuzin	<1.0	
330-55-2	Linuron	<1.0	
1563-66-2	Carbofuran	<1.0	
944-22-9	Fonofos	<1.0	
122-34-9	Simizine	<1.0	
13071-79-9	Terbufos	<1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	92.0	% Recovery
Endrin	82.0	% Recovery
Methoxychlor	91.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

HOWARD LABS INC REPORT LAB # 87-12-279

ECEIVED: 12/04/87

Results by Sample

AMPLE ID #03037 - 17s

FRACTION 03B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/04/87 13:35:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	40	34	47	66	47	12.0

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-279

Results by Sample

SAMPLE ID #03037 - 17s

FRACTION 03I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/04/87 13:35:00 Category

VERIFIED BY CMH

DATA FILE B1346

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	95.6 %	S1V
toluene-d6	92.3 %	S2V
bromofluorobenzene	98.7 %	S3V

CODE SV - Surrogate compound for QC check.

ECEIVED: 12/04/87

HOWARD LABS INC REPORT

LAB # 87-12-279

Results by Sample

AMPLE ID #03037 - 17s

FRACTION 03D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/04/87 13:35:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.13	7.13	7.13	7.13	7.13	0.000
CONDUCTIVITY	775	775	775	775	775	0.000
TOTAL ORGANIC CARBON	4	3	3	3	3.25	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

17
IVED: 12/04/87

HOWARD LABS INC REPORT
Results by Sample

LAB # 87-12-279

MPLE ID #03037 - 17s B.#76386 SAMPLE # 03 FRACTIONS: J
Date & Time Collected 12/04/87 13:35:00 Category

COL <2 /100ml

AMPLE ID #03038 - 20d SAMPLE # 04 FRACTIONS: A,B,C,D,E,F,G,H,I
Date & Time Collected 12/04/87 14:35:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	4 pCi/L	CA	97.100 mg/L				
CD	<0.001 mg/L	CLI	23.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L				
CU	<0.025 mg/L	F	0.13 mg/L	FE	1.110 mg/L	HG	<0.0002 mg/L	K	2.130 mg/L	MG	23.800 mg/L				
MN	0.185 mg/L	NA	12.300 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L				
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	88.0 mg/L	TDSI	400 mg/L				
ZN	<0.020 mg/L														

HOWARD LABS INC REPORT LAB # 87-12-279

ECEIVED: 12/04/87

Results by Sample

AMPLE ID #03038 - 20d

FRACTION 04B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/04/87 14:35:00 Category

DATE EXTRACTED 12/07/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/10/87

ANALYST KH

VERIFIED BY DLH

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-279

Results by Sample

SAMPLE ID #03038 - 20d

FRACTION 04B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/04/87 14:35:00 Category

VERIFIED BY KK

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/l

S. D. = Standard Deviation

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-279

Results by Sample

SAMPLE ID #03038 - 20d

FRACTION 04I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/04/87 14:35:00 Category

VERIFIED BY GMH

DATA FILE B1347

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	98.1 %	S1V
toluene-d6	91.9 %	S2V
bromofluorobenzene	95.8 %	S3V

CODE SV - Surrogate compound for QC check.

HOWARD LABS INC REPORT LAB # 87-12-279

RECEIVED: 12/04/87

Results by Sample

SAMPLE ID #03038 - 20d FRACTION 04D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/04/87 14:35:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.36	7.36	7.36	7.37	7.36	0.005
CONDUCTIVITY	561	561	561	561	561	0.000
TOTAL ORGANIC CARBON	3	2	2	2	2.25	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-279

SAMPLE ID #03038 - 20d B.#76387

SAMPLE # 04 FRACTIONS: J

Date & Time Collected 12/04/87 14:35:00 Category

TOCOL <2 /100ml

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

LAB # 87-12-279

Results by Sample

SAMPLE ID #03040-Cl.Blank - #871113S FRACTION 05A TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected not specified Category

VERIFIED BY CMH

DATA FILE B1348

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatiles detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	100.0 %	S1V
toluene-d6	101.0 %	S2V
bromofluorobenzene	96.1 %	S3V

CODE SV - Surrogate compound for QC check.

ECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-279

Results by Sample

AMPLE ID #03040-Op.Blank - #871113S FRACTION 06A TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected not specified Category

VERIFIED BY CMH

DATA FILE B1349

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatiles detected with a detection limit of <0.50 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	99.6 %	S1V
toluene-d6	90.3 %	S2V
bromofluorobenzene	105.0 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/04/87

HOWARD LABS INC REPORT
01/29/88 18:14:15

LAB # 87-12-279

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02	FRACTION 03	FRACTION 04
POTASSIUM 40	<1.0	<1.0	<1.0	<1.0
TOTAL URANIUM	269	<1.0	<1.0	<1.0
RADIUM 226	<1.0	<1.0	<1.0	<1.0
RADIUM 228	<1.0	<1.0	<1.0	<1.0
TECHNETIUM 99	<1.0	<1.0	<1.0	<1.0
THORIUM 228	<1.0	<1.0	<1.0	<1.0
THORIUM 230	<1.0	<1.0	<1.0	<1.0
THORIUM 232	<1.0	<1.0	<1.0	<1.0
CESIUM 137	<1.0	<1.0	<1.0	<1.0
STRONTIUM 90	<1.0	<1.0	<1.0	<1.0
RUTHENIUM 106	<1.0	<1.0	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0	<1.0	<1.0

HOWARD LABS INC REPORT

LAB # 87-12-280

ECEIVED: 12/04/87

01/29/88 18:24:28

CLIENT WEST M O SAMPLES 1
COMPANY Westinghouse Materials Co.
ACILITY

REPORT Westinghouse Materials
TO Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 12/04/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

PREPARED BY HOWARD LABORATORIES, INC.
3601 South Dixie Drive
P.O. Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie G. Webster
CERTIFIED BY

CONTACT D HOWARD

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01 #03039 - 20s
01 #03039 - 20s B.#76388

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus, Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform, Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD.
ZN	Zinc

RECEIVED: 12/04/87

HOWARD LABS INC REPORT

LAB # 87-12-280

Results by Sample

SAMPLE ID #03039 - 20s

SAMPLE # 01 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/04/87 14:53:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	21 pCi/L	CA	83.500 mg/L
CD	<0.001 mg/L	CLI	22.0 mg/L	CN	0.006 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.22 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	2.520 mg/L	MG	19.400 mg/L
MN	0.027 mg/L	NA	15.300 mg/L	NI	<0.005 mg/L	NO3I	2.84 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.005 mg/L	SO4I	64.0 mg/L	TDSI	376 mg/L
ZN	<0.020 mg/L										

HOWARD LABS INC REPORT LAB # 87-12-280

ECEIVED: 12/04/87

Results by Sample

SAMPLE ID #03039 - 20s

FRACTION 01B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/04/87 14:53:00 Category

DATE EXTRACTED 12/09/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/16/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otheewise specified.

HOWARD LABS INC REPORT LAB # 87-12-280

ECEIVED: 12/04/87

Results by Sample

AMPLE ID #03039 - 20s

FRACTION 01B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/04/87 14:53:00 Category

VERIFIED BY KK

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	23	26	14	29	22	4.74

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/l

S. D. = Standard Deviation

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-280

Results by Sample

SAMPLE ID #03039 - 20s

FRACTION 01I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/04/87 14:53:00 Category

VERIFIED BY CMH

DATA FILE B1350

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L for the stable HSL, NPDES and drinking water standards plus over 250 total volatile organic compounds to include paint solvents, fuel oils, gasoline, etc.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	95.3 %	S1V
toluene-d6	104.0 %	S2V
bromofluorobenzene	101.0 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/04/87

HOWARD LABS INC REPORT LAB # 87-12-280

Results by Sample

SAMPLE ID #03039 - 20s

FRACTION 01D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/04/87 14:53:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.44	7.44	7.45	7.45	7.45	0.006
CONDUCTIVITY	551	551	551	551	551	0.000
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

ECEIVED: 12/04/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-280

SAMPLE ID #03039 - 20s B.#76388

SAMPLE # 01 FRACTIONS: J

Date & Time Collected 12/04/87 14:53:00 Category

TOCOL <2 /100ml

RECEIVED: 12/04/87

HOWARD LABS INC REPORT
01/29/88 18:24:28

LAB # 87-12-280

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01
POTASSIUM 40	<1.0
TOTAL URANIUM	<1.0
RADIUM 226	<1.0
RADIUM 228	<1.0
TECHNETIUM 99	<1.0
THORIUM 228	<1.0
THORIUM 230	<1.0
THORIUM 232	<1.0
CESIUM 137	<1.0
STRONTIUM 90	<1.0
RUTHENIUM 106	<1.0
NEPTUNIUM 237	<1.0
PLUTONIUM 238	<1.0
PLUTONIUM 239	<1.0
PLUTONIUM 240	<1.0

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

01/29/88 15:31:28

LAB # 87-12-288

CLIENT WEST M O SAMPLES 3
COMPANY Westinghouse Materials Co.
FACILITY

PREPARED BY HOWARD LABORATORIES, INC.
3601 South Dixie Drive
P.O.Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie D. Webster
CERTIFIED BY

CONTACT D HOWARD

REPORT TO Westinghouse Materials Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 12/05/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01	#03041 - 19-TP	
01	#03041 - 19-TP	B.#76389
02	#03042 - 21-TP	
02	#03042 - 21-TP	B.#76390
03	#03043 - 22-TP	
03	#03043 - 22-TP	B.#76391

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus, Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform, Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD.
ZN	Zinc

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

LAB # 87-12-288

Results by Sample

SAMPLE ID #03041 - 19-TP

SAMPLE # 01 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/05/87 09:41:00 Category

AG	<0.030 mg/L	ALPHA	7 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	77 pCi/L	CA	456.000 mg/L
CD	<0.001 mg/L	CLI	420.0 mg/L	CN	<0.005 mg/L	CODI	25 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.30 mg/L	FE	1.270 mg/L	HG	<0.0002 mg/L	K	1.950 mg/L	MG	165.000 mg/L
MN	1.500 mg/L	NA	418.000 mg/L	NI	0.010 mg/L	NO3I	0.06 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	0.11 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	280.0 mg/L	TDSI	2,480 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-288

SAMPLE ID #03041 - 19-TP

FRACTION 01B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/05/87 09:41:00 Category

DATE EXTRACTED 12/09/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/16/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-288

SAMPLE ID #03041 - 19-TP

FRACTION 01B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/05/87 09:41:00 Category

VERIFIED BY KK

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	225	172	229	213	210	22.6

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/l

S. D. = Standard Deviation

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

LAB # 87-12-288

Results by Sample

SAMPLE ID #03041 - 19-TP

FRACTION 01I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/05/87 09:41:00 Category

VERIFIED BY CMH

DATA FILE D0617

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
1,1-Dichloroethane	15.00	ug/L
1,1,2,2-Tetrachloroethane	1.54	ug/L
Bromoform	0.91	ug/L
1,2-Dichlorobenzene	0.83	ug/L
Chloroethene(vinyl chloride)	0.87	ug/L
Cis-1,2-Dichloroethene	29.50	ug/L

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	108.0 %	S1V
toluene-d6	105.0 %	S2V
bromofluorobenzene	98.8 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-288

SAMPLE ID #03041 - 19-TP

FRACTION 01D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/05/87 09:41:00 Category

VERIFIED BY M

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	6.65	6.63	6.65	6.66	6.65	0.013
CONDUCTIVITY	5,310	5,310	5,310	5,310	5,310	0.000
TOTAL ORGANIC CARBON	6	4	5	5	5.00	0.707k

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

LAB # 87-12-288

Results by Sample

SAMPLE ID #03041 - 19-TP B.#76389 SAMPLE # 01 FRACTIONS: J
Date & Time Collected 12/05/87 09:41:00 Category

TOCOL 350 /100ml

SAMPLE ID #03042 - 21-TP SAMPLE # 02 FRACTIONS: A,B,C,D,E,F,G,H,I
Date & Time Collected 12/05/87 10:28:00 Category

AG	<0.030 mg/L	ALPHA	964 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	3,310 pCi/L	CA	119.000 mg/L
CD	<0.001 mg/L	CLI	14.0 mg/L	CN	<0.005 mg/L	CODI	17 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.94 mg/L	FE	0.450 mg/L	HG	<0.0002 mg/L	K	1.300 mg/L	MG	55.000 mg/L
MN	0.980 mg/L	NA	10.000 mg/L	NI	<0.005 mg/L	NO3I	0.42 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	0.28 mg/L as P	RADIUM	SEE TEXT pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	220.0 mg/L	TDSI	780 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-288

SAMPLE ID #03042 - 21-TP

FRACTION 02B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/05/87 10:28:00 Category

DATE EXTRACTED 12/09/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/16/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/05/87

HOWARD LABS INC REPORT LAB # 87-12-288

Results by Sample

SAMPLE ID #03042 - 21-TP

FRACTION 02B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/05/87 10:28:00 Category

VERIFIED BY KK

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S.D.
TOX	10	12	10	8	10	1.41

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/l

S.D. = Standard Deviation

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

LAB # 87-12-288

Results by Sample

SAMPLE ID #03042 - 21-TP

FRACTION 02I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/05/87 10:28:00 Category

VERIFIED BY CMH

DATA FILE D0618

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with samples being analyzed in duplicate.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	102.0 %	S1V
toluene-d6	96.8 %	S2V
bromofluorobenzene	97.9 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-288

SAMPLE ID #03042 - 21-TP

FRACTION 02D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/05/87 10:28:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.25	7.20	7.23	7.24	7.23	0.022
CONDUCTIVITY	857	857	857	857	857	0.000
TOTAL ORGANIC CARBON	5	6	6	6	5.75	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-288

SAMPLE ID #03042 - 21-TP B.#76390 SAMPLE # 02 FRACTIONS: J
Date & Time Collected 12/05/87 10:28:00 Category

TOCOL 1,000 /100ml

SAMPLE ID #03043 - 22-TP SAMPLE # 03 FRACTIONS: A,B,C,D,E,F,G,H,I
Date & Time Collected 12/05/87 11:32:00 Category

AG	<0.030 mg/L	ALPHA	149 pCi/L	AS	0.003 mg/L	BA	<0.200 mg/L	BETA	988 pCi/L	CA	323.000 mg/L
CD	<0.001 mg/L	CLI	90.0 mg/L	CN	<0.005 mg/L	CODI	85 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.61 mg/L	FE	0.130 mg/L	HG	0.0003 mg/L	K	4.220 mg/L	MG	135.000 mg/L
MN	2.130 mg/L	NA	22.900 mg/L	NI	<0.005 mg/L	NO3I	0.35 mg/L	PB	<0.005 mg/L	PHNLI	0.005 mg/L
PTI	0.13 mg/L as P	RADIUM	SEE TEXT pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	410.0 mg/L	TDSI	1,840 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

LAB # 87-12-288

Results by Sample

SAMPLE ID #03043 - 22-TP

FRACTION 03B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/05/87 11:32:00 Category

DATE EXTRACTED 12/09/87
CONCENTRATION FACTOR 92

DATE INJECTED 12/16/87
ANALYST KH

VERIFIED BY WMG

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.
N/A = Not Analyzed
<=Less Than
* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-288

SAMPLE ID #03043 - 22-TP

FRACTION 03B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/05/87 11:32:00 Category

VERIFIED BY KK

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	29	34	32	31	32	1.80

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/l

S. D. = Standard Deviation

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

LAB # 87-12-288

Results by Sample

SAMPLE ID #03043 - 22-TP

FRACTION 03I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/05/87 11:32:00 Category

VERIFIED BY CMH

DATA FILE D0619

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	104.0 %	S1V
toluene-d6	105.0 %	S2V
bromofluorobenzene	102.0 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-288

SAMPLE ID #03043 - 22-TP

FRACTION 03D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/05/87 11:32:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	6.89	6.92	6.93	6.93	6.92	0.029
CONDUCTIVITY	2,240	2,240	2,240	2,240	2,240	0.000
TOTAL ORGANIC CARBON	7	7	7	7	7	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-288

SAMPLE ID #03043 - 22-TP B.#76391 SAMPLE # 03 FRACTIONS: J

Date & Time Collected 12/05/87 11:32:00 Category

TOCOL <2
/100ml

RECEIVED: 12/05/87

HOWARD LABS INC REPORT
01/29/88 15:31:28

LAB # 87-12-288

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02	FRACTION 03
POTASSIUM 40	<1.0	<1.0	<1.0
TOTAL URANIUM	40	6,440	4,200
RADIUM 226	<1.0	<1.0	<1.0
RADIUM 228	<1.0	23	4
TECHNETIUM 99	<1.0	<1.0	<1.0
THORIUM 228	<1.0	<1.0	<1.0
THORIUM 230	<1.0	<1.0	<1.0
THORIUM 232	<1.0	<1.0	<1.0
CESIUM 137	<1.0	<1.0	<1.0
STRONTIUM 90	<1.0	<1.0	<1.0
RUTHENIUM 106	<1.0	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0	<1.0

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

01/29/88 18:27:37

LAB # 87-12-289

CLIENT WEST M O SAMPLES 4
COMPANY Westinghouse Materials Co.
FACILITY

REPORT Westinghouse Materials
TO Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 12/05/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

PREPARED BY HOWARD LABORATORIES, INC.
3601 South Dixie Drive
P.O. Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie G. Webster
CERTIFIED BY

CONTACT D HOWARD

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01 #03044 - 20-TP
01 #03044 - 20-TP B.#76392
02 #03045 - HK-dug
02 #03045 - HK-dug B.#76393
03 #03046-Cl.Blank - #871113S
04 #03046-Op.Blank - #871113S

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus, Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform, Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD.
ZN	Zinc

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

LAB # 87-12-289

Results by Sample

SAMPLE ID #03044 - 20-TP

SAMPLE # 01 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/05/87 13:45:00 Category

AG	<0.030 mg/L	ALPHA	5 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	12 pCi/L	CA	77.300 mg/L
CD	<0.001 mg/L	CLI	4.0 mg/L	CN	<0.005 mg/L	CODI	14 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	1.13 mg/L	FE	0.098 mg/L	HG	<0.0003 mg/L	K	0.970 mg/L	MG	19.700 mg/L
MN	0.390 mg/L	NA	2.670 mg/L	NI	<0.005 mg/L	NO3I	0.56 mg/L	PB	<0.005 mg/L	PHNLI	0.005 mg/L
PTI	0.13 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	40.0 mg/L	TDSI	344 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-289

SAMPLE ID #03044 - 20-TP

FRACTION 01B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/05/87 13:45:00 Category

DATE EXTRACTED 12/04/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/16/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

ECEIVED: 12/05/87

HOWARD LABS INC REPORT

LAB # 87-12-289

Results by Sample

AMPLE ID #03044 - 20-TP

FRACTION 01B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/05/87 13:45:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	29	37	25	19	28	6.94

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
Total Organic Halogen reported in ug/L
S. D. = Standard Deviation

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

LAB # 87-12-289

Results by Sample

SAMPLE ID #03044 - 20-TP

FRACTION 01I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/05/87 13:45:00 Category

VERIFIED BY CMH

DATA FILE D0620

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L for the stable HSL, NPDES and drinking water standards.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	93.2 %	S1V
toluene-d6	96.4 %	S2V
bromofluorobenzene	102.0 %	S3V

CODE SV - Surrogate compound for QC check.

ECEIVED: 12/05/87

HOWARD LABS INC REPORT

LAB # 87-12-289

Results by Sample

AMPLE ID #03044 - 20-TP

FRACTION 01D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/05/87 13:45:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.27	7.27	7.22	7.26	7.26	0.024
CONDUCTIVITY	510	510	510	510	510	0.000
TOTAL ORGANIC CARBON	5	5	4	5	4.75	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-289

SAMPLE ID #03044 - 20-TP B.#76392 SAMPLE # 01 FRACTIONS: J
Date & Time Collected 12/05/87 13:45:00 Category

TOCOL 250 /100ml

SAMPLE ID #03045 - HK-dug SAMPLE # 02 FRACTIONS: A,B,C,D,E,F,G,H,I
Date & Time Collected 12/05/87 14:55:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	24 pCi/L	CA	99.200 mg/L		
CD	<0.001 mg/L	CLI	20.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L		
CU	<0.025 mg/L	F	0.61 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	18.200 mg/L	MG	30.200 mg/L		
MN	<0.015 mg/L	NA	20.900 mg/L	NI	<0.005 mg/L	NO3I	1.14 mg/L	PB	<0.005 mg/L	PHNLI	0.010 mg/L		
PTI	0.09 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	84.0 mg/L	TDSI	484 mg/L		
ZN	<0.020 mg/L												

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-289

SAMPLE ID #03045 - HK-duq

FRACTION 02B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/05/87 14:55:00 Category

DATE EXTRACTED 12/04/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/16/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

HOWARD LABS INC REPORT LAB # 87-12-289

RECEIVED: 12/05/87

Results by Sample

SAMPLE ID #03045 - HK-dug FRACTION 02B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/05/87 14:55:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

LAB # 87-12-289

Results by Sample

SAMPLE ID #03045 - HK-dug

FRACTION 02D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/05/87 14:55:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.66	7.65	7.66	7.67	7.66	0.008
CONDUCTIVITY	837	837	837	837	837	0.000
TOTAL ORGANIC CARBON	3	3	4	3	3.25	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/05/87

HOWARD LABS INC REPORT

LAB # 87-12-289

Results by Sample

SAMPLE ID #03045 - HK-dug B.#76393 SAMPLE # 02 FRACTIONS: J

Date & Time Collected 12/05/87 14:55:00 Category

TOCOL 325 /100ml

RECEIVED: 12/05/87

HOWARD LABS INC REPORT LAB # 87-12-289

Results by Sample

SAMPLE ID #03046-Cl.Blank - #871113S FRACTION 03A TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected not specified Category

VERIFIED BY CMH

DATA FILE D0622

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of the stable volatiles at <0.50 ug/L		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	108.0 %	S1V
toluene-d6	111.0 %	S2V
bromofluorobenzene	94.1 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/05/87

HOWARD LABS INC REPORT LAB # 87-12-289

Results by Sample

SAMPLE ID #03046-Op.Blank - #871113S FRACTION 04A TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected not specified Category

VERIFIED BY GMH

DATA FILE D0621

DATE INJECTED 12/10/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds were detected with a detection limit of <0.50 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	104.0 %	S1V
toluene-d6	97.9 %	S2V
bromofluorobenzene	93.6 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/05/87 01/29/88 18:27:37

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02
POTASSIUM 40	<1.0	<1.0
TOTAL URANIUM	<1.0	<1.0
RADIUM 226	<1.0	<1.0
RADIUM 228	<1.0	<1.0
TECHNETIUM 99	<1.0	<1.0
THORIUM 228	<1.0	<1.0
THORIUM 230	<1.0	<1.0
THORIUM 232	<1.0	<1.0
CESIUM 137	<1.0	<1.0
STRONTIUM 90	<1.0	<1.0
RUTHENIUM 106	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

01/29/88 18:33:19

LAB # 87-12-311

CLIENT WEST M O SAMPLES 4
COMPANY Westinghouse Materials Co.
FACILITY

PREPARED BY HOWARD LABORATORIES, INC.
3601 South Dixie Drive
P.O.Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie H. Webster
CERTIFIED BY

CONTACT D HOWARD

REPORT TO Westinghouse Materials
Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 12/07/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01 #03047 - P-3
01 #03047 - P-3 B.#76396
02 #03048 - P-3
02 #03048 - P-3 B.#76397
03 #03050 - 13d
03 #03050 - 13d B.#76398
04 #03051 - 12
04 #03051 - 12 B.#76399

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus, Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform, Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	GC/MS SCAN TOTAL VOLATILES
WCQ	RCRA TOC/COND/PH IN QUAD.
ZN	Zinc

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-311

SAMPLE ID #03047 - P-3

SAMPLE # 01 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/07/87 08:11:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	0.003 mg/L	BA	<0.200 mg/L	BETA	<3 pCi/L	CA	84.600 mg/L
CD	<0.001 mg/L	CLI	13.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.18 mg/L	FE	2.630 mg/L	HG	<0.0002 mg/L	K	1.370 mg/L	MG	20.300 mg/L
MN	0.389 mg/L	NA	11.900 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	0.07 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	32.0 mg/L	TDSI	352 mg/L
ZN	<0.020 mg/L										

HOWARD LABS INC REPORT LAB # 87-12-311

RECEIVED: 12/07/87

Results by Sample

SAMPLE ID #03047 - P-3

FRACTION 01B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/07/87 08:11:00 Category

DATE EXTRACTED 12/10/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/16/87

ANALYST KH

VERIFIED BY WMG

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

HOWARD LABS INC REPORT LAB # 87-12-311

RECEIVED: 12/07/87

Results by Sample

SAMPLE ID #03047 - P-3

FRACTION 01B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/07/87 08:11:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-311

Results by Sample

SAMPLE ID #03047 - P-3

FRACTION 01D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/07/87 08:11:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.34	7.34	7.35	7.35	7.35	0.006
CONDUCTIVITY	551	571	571	571	566	10.00
TOTAL ORGANIC CARBON	3	2	2	2	2.25	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

ECEIVED: 12/07/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-311

SAMPLE ID #03047 - P-3 B.#76396

SAMPLE # 01 FRACTIONS: J

Date & Time Collected 12/07/87 08:11:00 Category

TOCOL <2 /100ml

SAMPLE ID #03048 - P-3

SAMPLE # 02 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/07/87 08:11:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	0.003 mg/L	BA	<0.200 mg/L	BETA	<3 pCi/L	CA	85.500 mg/L		
CD	<0.001 mg/L	CLI	13.0 mg/L	CN	0.006 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L		
CU	<0.025 mg/L	F	0.20 mg/L	FE	2.650 mg/L	HG	<0.0002 mg/L	K	1.790 mg/L	MG	20.800 mg/L		
MN	0.385 mg/L	NA	11.700 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L		
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	40.0 mg/L	TDSI	360 mg/L		
ZN	<0.020 mg/L												

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-311

SAMPLE ID #03048 - P-3

FRACTION 02B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/07/87 08:11:00 Category

DATE EXTRACTED 12/10/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/16/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/07/87

HOWARD LABS INC REPORT LAB # 87-12-311

Results by Sample

SAMPLE ID #03048 - P-3

FRACTION 02B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/07/87 08:11:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

HOWARD LABS INC REPORT LAB # 87-12-311

ECEIVED: 12/07/87

Results by Sample

AMPLE ID #03048 - P-3

FRACTION 02D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/07/87 08:11:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.38	7.38	7.39	7.38	7.38	0.005
CONDUCTIVITY	571	571	571	571	571	0.00
TOTAL ORGANIC CARBON	3	2	2	2	2.25	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/07/87

HOWARD LABS INC REPORT LAB # 87-12-311

Results by Sample

SAMPLE ID #03048 - P-3 B.#76397 SAMPLE # 02 FRACTIONS: J

Date & Time Collected 12/07/87 08:11:00 Category

TOCOL <2 /100ml

SAMPLE ID #03050 - 13d SAMPLE # 03 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/07/87 09:04:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	10 pCi/L	CA	182.000 mg/L
CD	<0.001 mg/L	CLI	64.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.20 mg/L	FE	6.770 mg/L	HG	<0.0002 mg/L	K	4.220 mg/L	MG	20.400 mg/L
MN	0.341 mg/L	NA	46.100 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	300.0 mg/L	TDSI	860 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/07/87

HOWARD LABS INC REPORT LAB # 87-12-311

Results by Sample

SAMPLE ID #03050 - 13d

FRACTION 03B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/07/87 09:04:00 Category

DATE EXTRACTED 12/10/87
CONCENTRATION FACTOR 92

DATE INJECTED 12/16/87
ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.
N/A = Not Analyzed
<=Less Than
* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-311

SAMPLE ID #03050 - 13d

FRACTION 03B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/07/87 09:04:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	32	42	41	35	38	4.15

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-311

Results by Sample

SAMPLE ID #03050 - 13d

FRACTION 03I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/07/87 09:04:00 Category

VERIFIED BY GMH

DATA FILE B1372

DATE INJECTED 12/11/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L for the stable HSL and NPDES compounds. This test covers over 250 volatile compounds to include the aromatics, aliphatics, the halogens described above plus the ketones and ethers.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	95.6 %	S1V
toluene-d6	94.9 %	S2V
bromofluorobenzene	93.5 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-311

Results by Sample

SAMPLE ID #03050 - 13d

FRACTION 03D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/07/87 09:04:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.00	7.01	7.00	7.00	7.00	0.005
CONDUCTIVITY	1,310	1,310	1,310	1,310	1,310	0.00
TOTAL ORGANIC CARBON	4	3	3	3	3.25	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-311

Results by Sample

SAMPLE ID #03050 - 13d B.#76398

SAMPLE # 03 FRACTIONS: J
Date & Time Collected 12/07/87 09:04:00 Category

TOCOL 22 /100ml

SAMPLE ID #03051 - 12

SAMPLE # 04 FRACTIONS: A,B,C,D,E,F,G,H,I
Date & Time Collected 12/07/87 10:08:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	7 pCi/L	CA	17.600 mg/L		
CD	<0.001 mg/L	CLI	110.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L		
CU	<0.025 mg/L	F	0.76 mg/L	FE	0.064 mg/L	HG	<0.0002 mg/L	K	12.200 mg/L	MG	43.000 mg/L		
MN	<0.015 mg/L	NA	226.000 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L		
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	4.0 mg/L	TDSI	642 mg/L		
ZN	<0.020 mg/L												

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-311

Results by Sample

SAMPLE ID #03051 - 12

FRACTION 04B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/07/87 10:08:00 Category

DATE EXTRACTED 12/10/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/16/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

ECEIVED: 12/07/87

HOWARD LABS INC REPORT LAB # 87-12-311

Results by Sample

SAMPLE ID #03051 - 12

FRACTION 04B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/07/87 10:08:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S.D. = Standard Deviation

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-311

Results by Sample

SAMPLE ID #03051 - 12

FRACTION 04I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/07/87 10:08:00 Category

VERIFIED BY CMH

DATA FILE B1373

DATE INJECTED 12/11/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L for the stable HSL and other volatile compounds.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	95.4 %	S1V
toluene-d6	97.2 %	S2V
bromofluorobenzene	91.5 %	S3V

CODE SV - Surrogate compound for QC check.

HOWARD LABS INC REPORT LAB # 87-12-311

RECEIVED: 12/07/87

Results by Sample

SAMPLE ID #03051 - 12 FRACTION 04D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/07/87 10:08:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.76	7.76	7.76	7.76	7.76	0.00
CONDUCTIVITY	1,100	1,120	1,120	1,120	1,120	10.00
TOTAL ORGANIC CARBON	<1	<1	<1	<1	<1	0.000

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-311

SAMPLE ID #03051 - 12 B.#76399

SAMPLE # 04 FRACTIONS: J

Date & Time Collected 12/07/87 10:08:00 Category

TOCOL <2 /100ml

HOWARD LABS INC REPORT

LAB # 87-12-311

RECEIVED: 12/07/87

01/29/88 18:33:19

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02	FRACTION 03	FRACTION 04
POTASSIUM 40	<1.0	<1.0	<1.0	<1.0
TOTAL URANIUM	<1.0	<1.0	<1.0	<1.0
RADIUM 226	<1.0	<1.0	<1.0	<1.0
RADIUM 228	<1.0	<1.0	<1.0	<1.0
TECHNETIUM 99	<1.0	<1.0	<1.0	<1.0
THORIUM 228	<1.0	<1.0	<1.0	<1.0
THORIUM 230	<1.0	<1.0	<1.0	<1.0
THORIUM 232	<1.0	<1.0	<1.0	<1.0
CESIUM 137	<1.0	<1.0	<1.0	<1.0
STRONTIUM 90	<1.0	<1.0	<1.0	<1.0
RUTHENIUM 106	<1.0	<1.0	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0	<1.0	<1.0

RECEIVED: 12/07/87

HOWARD LABS INC REPORT
01/29/88 18:41:42

LAB # 87-12-312

CLIENT WEST M O SAMPLES 4
COMPANY Westinghouse Materials Co.
FACILITY

PREPARED BY HOWARD LABORATORIES, INC.
3601 South Dixie Drive
P.O. Box 369
Dayton, OH 45449
PHONE 513-294-6856

Jackie H. Webster
CERTIFIED BY

CONTACT D HOWARD

REPORT TO Westinghouse Materials
Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239
ATTEN William Hayes

WORK ID RCRA Groundwater Sampling
TAKEN 12/07/87
TRANS Picked up by HLI Personnel
TYPE Aqueous
P.O. # 4914088
INVOICE under separate cover

Enclosed are the results of specified samples submitted for analyses. If you have any questions, please advise. Use the "LAB #" for faster identification.
OHIO EPA CERTIFICATION: CHEMICAL 4074 BACTERIOLOGICAL 857

cc. Shannon Goldberg, ASI

SAMPLE IDENTIFICATION

01 #03052 - 11
01 #03052 - 11 B.#76400
02 #03053 - Rinse Blank
02 #03053-Rinse BlankB.#76401
03 #03054-Cl.Blank - #871113S
04 #03054-Op.Blank - #871113S

HOWARD LABS INC TEST CODES and NAMES used on this report

AG	Silver
ALPHA	Gross Alpha
AS	Arsenic
BA	Barium
BETA	Gross Beta
CA	Calcium
CD	Cadmium
CLI	Chloride
CN	Cyanide
CODI	Chemical Oxygen Demand
CR	Chromium
CR6	Hexavalent Chromium
CU	Copper
F	Fluoride
FE	Iron
HG	Mercury
K	Potassium
MG	Magnesium
MN	Manganese
NA	Sodium
NI	Nickel
NO3I	Nitrates
PB	Lead
PHNLI	Phenols
PSDWA	SDWA Pesticides/Herbicides
PTI	Phosphorus,Total
RADIUM	Radium, Total
RAD SC	Radionuclides Scan
SE	Selenium
SO4I	Sulfate
TDSI	Total Dissolved Solids
TOCOL	Total Coliform,Non Potable
TOXDQ	TOX-Quad Runs-Method 450.1
VOAMSC	QC/MS SCAN TOTAL VOLATILES
WCG	RCRA TOC/COND/PH IN QUAD.
ZN	Zinc

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-312

SAMPLE ID #03052 - 11

SAMPLE # 01 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/07/87 11:15:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	<3 pCi/L	CA	99.300 mg/L
CD	<0.001 mg/L	CLI	20.0 mg/L	CN	<0.005 mg/L	CODI	<10 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.26 mg/L	FE	2.360 mg/L	HG	<0.0002 mg/L	K	0.910 mg/L	MG	25.700 mg/L
MN	0.154 mg/L	NA	10.500 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	76.0 mg/L	TDSI	444 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-312

SAMPLE ID #03052 - 11

FRACTION 01B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/07/87 11:15:00 Category

DATE EXTRACTED 12/14/87

CONCENTRATION FACTOR 92

DATE INJECTED 12/17/87

ANALYST KH

VERIFIED BY WMC

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

N/A = Not Analyzed

<=Less Than

* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-312

SAMPLE ID #03052 - 11

FRACTION 01B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/07/87 11:15:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	<10	<10	<10	<10	<10	0.00

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-312

Results by Sample

SAMPLE ID #03052 - 11

FRACTION 01I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/07/87 11:15:00 Category

VERIFIED BY CMH

DATA FILE B1375

DATE INJECTED 12/12/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with detection limits of <0.50 for the stable HSL, NPDES and drinking water standards.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	98.6 %	S1V
toluene-d6	100.0 %	S2V
bromofluorobenzene	91.1 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-312

Results by Sample

SAMPLE ID #03052 - 11

FRACTION 01D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/07/87 11:15:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.37	7.37	7.38	7.38	7.38	0.006
CONDUCTIVITY	694	714	714	714	709	10.00
TOTAL ORGANIC CARBON	3	2	2	2	2.25	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-312

Results by Sample

SAMPLE ID #03052 - 11 B.#76400

SAMPLE # 01 FRACTIONS: J

Date & Time Collected 12/07/87 11:15:00 Category

TOCOL <2 /100ml

SAMPLE ID #03053 - Rinse Blank

SAMPLE # 02 FRACTIONS: A,B,C,D,E,F,G,H,I

Date & Time Collected 12/07/87 14:04:00 Category

AG	<0.030 mg/L	ALPHA	<1 pCi/L	AS	<0.0025 mg/L	BA	<0.200 mg/L	BETA	<3 pCi/L	CA	0.189 mg/L
CD	<0.001 mg/L	CLI	3.0 mg/L	CN	<0.005 mg/L	CODI	13 mg/L	CR	<0.005 mg/L	CR6	<0.005 mg/L
CU	<0.025 mg/L	F	0.06 mg/L	FE	<0.050 mg/L	HG	<0.0002 mg/L	K	<0.050 mg/L	MG	0.027 mg/L
MN	<0.015 mg/L	NA	0.810 mg/L	NI	<0.005 mg/L	NO3I	<0.02 mg/L	PB	<0.005 mg/L	PHNLI	<0.005 mg/L
PTI	<0.02 mg/L as P	RADIUM	<1 pCi/L	RAD_SC	SEE TEXT pCi/L	SE	<0.0025 mg/L	SO4I	<1 mg/L	TDSI	16 mg/L
ZN	<0.020 mg/L										

RECEIVED: 12/07/87

HOWARD LABS INC REPORT LAB # 87-12-312

Results by Sample

SAMPLE ID #03053 - Rinse Blank FRACTION 02B TEST CODE PSDWA NAME SDWA Pesticides/Herbicides

Date & Time Collected 12/07/87 14:04:00 Category

DATE EXTRACTED 12/14/87
CONCENTRATION FACTOR 92

DATE INJECTED 12/17/87
ANALYST KH

VERIFIED BY WMG

REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
15972-60-8	Alachlor	< 2.0	
58-89-9	Lindane	< 0.2	
72-20-8	Endrin	< 0.2	
72-43-5	Methoxychlor	< 0.2	
8001-35-2	Toxaphene	< 0.5	
94-75-7	2,4-D	< 1.0	
93-72-1	2,4,5-TP Silvex	< 0.5	

NON-REGULATED PESTICIDE COMPOUNDS

CAS NUMBER	COMPOUND	RESULT	UNITS *
1912-24-9	Atrazine	< 1.0	
51218-45-2	Metolachlor	< 1.0	
21725-46-2	Cyanazine	< 1.0	
21087-64-9	Metribuzin	< 1.0	
330-55-2	Linuron	< 1.0	
1563-66-2	Carbofuran	< 1.0	
944-22-9	Fonofos	< 1.0	
122-34-9	Simizine	< 1.0	
13071-79-9	Terbufos	< 1.0	

QC/QA STANDARD RECOVERY DATA:

Lindane	105.0	% Recovery
Endrin	110.0	% Recovery
Methoxychlor	106.0	% Recovery

NOTES AND DEFINITIONS FOR THIS REPORT.
N/A = Not Analyzed
<=Less Than
* All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

Results by Sample

LAB # 87-12-312

SAMPLE ID #03053 - Rinse Blank

FRACTION 02B TEST CODE TOXDQ NAME TOX-Quad Runs-Method 450.1

Date & Time Collected 12/07/87 14:04:00 Category

VERIFIED BY NDM

RCRA GROUND WATER INDICATOR PARAMETER

TOTAL ORGANIC HALOGEN BY DOHRMANN DX-20 ANALYZER

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
TOX	34	28	26	33	30	3.34

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than

Total Organic Halogen reported in ug/L

S. D. = Standard Deviation

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-312

Results by Sample

SAMPLE ID #03053 - Rinse Blank

FRACTION 02I TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected 12/07/87 14:04:00 Category

VERIFIED BY GMH

DATA FILE B1358

DATE INJECTED 12/11/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	93.1 %	S1V
toluene-d6	95.1 %	S2V
bromofluorobenzene	88.0 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-312

Results by Sample

SAMPLE ID #03053 - Rinse Blank

FRACTION 02D TEST CODE WCQ NAME RCRA TOC/COND/PH IN QUAD.

Date & Time Collected 12/07/87 14:04:00 Category

VERIFIED BY KM

RCRA WET CHEMICAL GROUND WATER INDICATOR PARAMETERS

PARAMETER	RUN 1	RUN 2	RUN 3	RUN 4	AVG	S. D.
pH	7.82	7.82	7.83	7.82	7.82	0.005
CONDUCTIVITY	1.6	1.6	1.6	1.6	1.6	0.00
TOTAL ORGANIC CARBON	10	11	11	11	10.75	0.433

NOTES AND DEFINITIONS FOR THIS REPORT.

< = Less Than
pH reported in S.U.
Conductivity reported in umhos/cm
Total Organic Carbon reported in mg/L
NA = Not Analyzed
S.D. = Standard Deviation

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-312

Results by Sample

SAMPLE ID #03053-Rinse BlankB.#76401 SAMPLE # 02 FRACTIONS: J

Date & Time Collected 12/07/87 14:04:00 Category

TOCOL 9 /100ml

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-312

Results by Sample

SAMPLE ID #03054-C1.Blank - #871113S FRACTION 03A TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected not specified Category

VERIFIED BY CMH

DATA FILE B1399

DATE INJECTED 12/11/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with a detection limit of <0.5 ug/L.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	87.8 %	S1V
toluene-d6	94.8 %	S2V
bromofluorobenzene	92.2 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/07/87

HOWARD LABS INC REPORT

LAB # 87-12-312

Results by Sample

SAMPLE ID #03054-Op.Blank - #871113S FRACTION 04A TEST CODE VOAMSC NAME GC/MS SCAN TOTAL VOLATILES

Date & Time Collected not specified Category

VERIFIED BY CMH

DATA FILE B1374

DATE INJECTED 12/11/87

ANALYST DLH

COMPOUND	RESULT	UNITS
No volatile compounds detected with the <0.50 ug/L detection limit described above.		

The following are inter-laboratory QA/QC results for EPA Method 624/1624.

COMPOUND	RESULT	CODE
1,2-dichloroethane-d4	98.6 %	S1V
toluene-d6	100.0 %	S2V
bromofluorobenzene	91.1 %	S3V

CODE SV - Surrogate compound for QC check.

RECEIVED: 12/07/87 01/29/88 18:41:42

Westinghouse Materials Co.

RESULTS OF RADIONUCLIDE ANALYSIS (pCi/L)

	FRACTION 01	FRACTION 02
POTASSIUM 40	<1.0	<1.0
TOTAL URANIUM	<1.0	<1.0
RADIUM 226	<1.0	<1.0
RADIUM 228	<1.0	<1.0
TECHNETIUM 99	<1.0	<1.0
THORIUM 228	<1.0	<1.0
THORIUM 230	<1.0	<1.0
THORIUM 232	<1.0	<1.0
CESIUM 137	<1.0	<1.0
STRONTIUM 90	<1.0	<1.0
RUTHENIUM 106	<1.0	<1.0
NEPTUNIUM 237	<1.0	<1.0
PLUTONIUM 238	<1.0	<1.0
PLUTONIUM 239	<1.0	<1.0
PLUTONIUM 240	<1.0	<1.0

Appendix E

Chain-of-Custody Forms

Request-for-Analysis Forms

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00730

C/C Control No. 00787

PROJECT NAME/NUMBER BCBA Groundwater Sampling/1998

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand delivered

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03053	Fernald Cleaning Blank, rinsate	12/07/97-1404	Cleaning rinsate	40ml VOA		
03053				40ml VOA		
03053				40ml VOA		
03053				500 ml amber		
03053				500 ml plastic		
03053				4 Liter Amber		
03053				1 gal plastic		
03053				1 Liter plastic		
03053				125 ml plastic		
03054	Trip Blank - Fernald	12/07/97-NA	Trip Blank	40ml VOA		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, AST, 12/07/97 1604

   Received By: E Rose H&L 12/7/97 4:15pm

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00729

C/C Control No. 00783

PROJECT NAME/NUMBER RCRA Groundwater sampling/T28

LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand delivered

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03052	Fernall Well 11	12/07/87 - 1115	GW	40ml VOA		
03052				40ml VOA		
03052				40ml VOA		
03052				500ml amber		
03052				500ml plastic		
03052				4L glass		
03052				1gal plastic		
03052				1L plastic		
03052				125ml plastic		
03052						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, ASI, 12/07/87 1604

   Received By: E. Bro... ASI 1604 12/7/87

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples

347

212

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00728

C/C Control No. 00784

PROJECT NAME/NUMBER RCRA Groundwater sampling/T98

LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand delivered

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03051	Fernald Well 12	12/07/87 - 1008	GW	40ml VOA		
03051				40ml VOA		
03051				40ml VOA		
03051				500ml amber		
03051				500ml plastic		
03051				4L glass		
03051				1gal plastic		
03051				1L plastic		
03051				125ml plastic		
03051						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, ASI, 12/07/87 1604

Received By: E Rose HL 12/7/87 1610

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00721

C/C Control No. 00782

PROJECT NAME/NUMBER RCRA Groundwater Sampling/T98

LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03050	Fernald well 13d (13d)	12/07/87 - 0904	GW	40ml VOA		
03050				40ml VOA		
03050				40ml VOA		
03050				500ml amber		
03050				500ml plastic		
03050				4L glass plastic		
03050				1 gallon plastic		
03050				1 L plastic		
03050				125ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, AST, 12/07/87 1604

   Received By: E Rose 4LL 1PM 12-7-87

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 10744

C/C Control No. 00793

PROJECT NAME/NUMBER PCBA Groundwater Sampl. 1779.8 (602)

LAB DESTINATION IT Midwest Berk

SAMPLE TEAM MEMBERS S. Goldberg, H. Goldberg, W. Tegley

CARRIER/WAYBILL NO. Federal Express # 4996174613

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
[illegible]49	Fernald P-3	12/07/87 0511	GW	1/2 gal V.O. plastic	(1 of 10)	
[illegible]49				1/2 gal V.O. glass	(2 of 10)	
03[illegible]49				1/2 gal V.O. glass	(3 of 10)	
03[illegible]49				2 gal amber	(5 of 10)	
03[illegible]49				2 gal plastic	(6 of 10)	
03[illegible]49				1 liter amber	(7 of 10)	
03[illegible]49				1 liter plastic	(8 of 10)	
03[illegible]49				1 liter plastic	(9 of 10)	
[illegible]049				1 liter plastic	(10 of 10)	

Special Instructions:

Possible Sample Hazards: LOW LEVEL RADIONUCLIDES.

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, AST 12/07/87 0511

   Received By: Walter Kreick - MT - 12.7.87 @ 1201

2. Relinquished By: Walter Kreick - MT. 12.7.87 @ 1730

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

380

212

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00145

C/C Control No. 00794

PROJECT NAME/NUMBER PCBA Groundwater Samp/600T9.8

LAB DESTINATION IT-BSL - Oak Ridge

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. FEDERAL EXPRESS # 4996 2416 713

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
030119	Fernald P-3	12/07/87 0811	GW	1 gallon plastic	(SAMPLE # 8 OF 10)	
030119	Fernald P-3	12/01/87 0811	GW	1/2 pint flat glass	(SAMPLE # 4 OF 10)	

Special Instructions:

Possible Sample Hazards: LOW LEVEL RADIONUCLIDES.

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, AST, 12/07/87-1201

   Received By: Walter Keck - UT. 12.7.87 @ 1201

2. Relinquished By: Walter Keck UT. 12.7.87 @ 1730

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

212

381

WHITE - To accompany samples

R/A Control No. 070725

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

C/C Control No. 00780

PROJECT NAME/NUMBER RCRA Groundwater sampling 88 LAB DESTINATION Howard Lab

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley CARRIER/WAYBILL NO. Hand delivered

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03048	Fernald well P-3	12/07/87-0811	GW	40ml VOA		
03048				40ml VOA		
03048				40ml VOA		
03048				500ml amber		
03048				500ml plastic		
03048				4L plastic		
03048				1gal plastic		
03048				1L plastic		
03048				125ml plastic		
03048						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shannon Goldberg, ASI, 12/07/87 1604

   Received By: E Rose H&I 4PM 12/7/87

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00224

C/C Control No. 00772

PROJECT NAME/NUMBER RCRA Groundwater sampling 1988 LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, K. Kegley CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03047	Fernald MW PS	12/07/87-0811	GW	40ml VOA		
03047				40ml VOA		
03047				40ml VOA		
03047				500ml amber		
03047				500ml plastic		
03047				4 liter glass (4 liter glass)		
03047				1 gallon plastic		
03047				1 liter plastic		
03047				125ml plastic		
03047						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, ASI, 12/07/87 1600
   Received By: E. Rose HLI 12/1/87 4PM
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00123

C/C Control No. 00778

PROJECT NAME/NUMBER BC BA Groundwater Sampling T9.8

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS W. Kegley, M. Goldberg, S. Goldberg

CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03045	Fernald H Kegley	12/05/87-1455	GW	40ml VOA		
03045				40ml VOA		
03045				40ml VOA		
03045				500ml amber		
03045				1000ml plastic		
03045				1 liter amber		
03045				1 gal plastic		
03045				1 liter plastic		
03045				125ml plastic		
03046	Fernald Trip Blank	12/05/87 NA	Trip Blank	40ml VOA		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shannon Goldberg, AST, 12/05/87 1605

   Received By: Crawford Howard Sat 12/5/87 1605

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00122

C/C Control No. 00777

PROJECT NAME/NUMBER RCRA Groundwater sampling/T9.8

LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS M. Goldberg, S. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03044	Fernald 20TP	12/05/87 - 1345	GW	40ml VOA		
03044				40ml VOA		
03044				40ml VOA		
03044				500ml amber		
03044				500ml plastic		
03044				4L plastic		
03044				1 gal plastic		
03044				1L plastic		
03044				125ml plastic		
03044						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shannon Goldberg, ASI, 12/05/87 1605

   Received By: Bryan Kegley ASI 12/05/87 1605

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00719

C/C Control No. 00776

PROJECT NAME/NUMBER RCRA Groundwater sampling/T98

LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03043	Fernald 22TP	12/05/89 1132	GW	40ml VOA		
03043				40ml VOA		
03043				40ml VOA		
03043				500ml amber		
03043				500ml plastic		
03043				4L plastic		
03043				1 gallon plastic		
03043				1 liter plastic		
03043				125 ml plastic		
03043						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Hildley, ASI, 12/05/89 1605

   Received By: Howard Howard Sol 12-05-89 16:05

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

386

212

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00718

C/C Control No. 00775

PROJECT NAME/NUMBER RCRA Groundwater sampling FY88

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03042	Fernald 21TP	12/05/87 1028	GW	40ml VOA		
03042				40ml VOA		
03042				40ml VOA		
03042				500ml amber		
03042				500ml plastic		
03042				4L plastic		
03042				1 gallon		
03042				1 Liter		
03042				125ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shanon Goldberg, AST, 12/05/87 1605

   Received By: [illegible] 12/05/87 1605

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00717

C/C Control No. 00774

PROJECT NAME/NUMBER RCRA Groundwater sampling FY88

LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03041	FERNALD 19TP	12/05/87 0941	GW	40ml VOA		
				40ml VOA		
				40ml VOA		
				500ml amber		
				500ml plastic		
				4 liter		
				1 gallon		
				1 liter		
				125 ml		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, ASI, 12/05/87 1605

Received By: Ben Crawford Howard Sal 12/05/87 1605

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00716

C/C Control No. 00773

PROJECT NAME/NUMBER RCRA groundwater sampling

LAB DESTINATION Howard LAB

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03039	Fernald 20S	12/04/87 1453	GW	40ml VOA		
				40ml VOA		
				40ml VOA		
				500ml Amber		
				500ml Plastic		
				4L plastic		
				1 gallon		
				1 Liter		
				125 ml		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, ASI, 12/04/87 1555

Received By: Ben Rosafal Howard Sol 12/04/87 1555

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00 115

C/C Control No. 00772

PROJECT NAME/NUMBER PRBA Groundwater Sample/T9.8

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, W. Kegley, M. Goldberg

CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03038	Fernald Well 20d	12/04/87 1435	GW	40ml VOA		
03038				40ml VOA		
03038				40ml VOA		
03038				250ml amber		
03038				250ml plastic		
03038				1 Liter amber		
03038				1 gallon plastic		
03038				1 liter plastic		
03038				125ml plastic		
03038				40ml VOA		
03040	Fernald Trip Blank	12/04/87 NA	Trip blank			

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shawn Goldberg, AST, 12/04/87 1555
   Received By: Ray C. Mayfield Howard Lab 12/04/87 1555
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00 114

C/C Control No. 00771

PROJECT NAME/NUMBER FEZ GROUNDWATER SAMPLING 788

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Wolfberg, D. Goldberg, W. Kepley

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03037	Fernald MW	12 4 87 1335	GW	40 ml VOA		
03037				40 ml VOA		
03037				40 ml VOA		
03037				500 ml amber		
03037				500 ml plastic		
03037				1 L plastic		
03037				1 L plastic		
03037				1 L plastic		
03037				125 ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Wolfberg, AST, 12/04/87 1555
   Received By: Ben Crawford Howard Sci 12/04/87 1555
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

212

391

R/A Control No. 00715

C/C Control No. 00770

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

PROJECT NAME/NUMBER RCRA GROUNDWATER SAMPLING/TASK

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand Deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03036	Trip Blank 170	12 4 87 1350	GW	40ml VOA		
03036				40ml VOA		
03036				40ml VOA		
03036				500ml Amber		
03036				500ml Plastic		
03036				4L plastic		
03036				1gal plastic		
03036				1L Plastic		
03036				125ml plastic		
03036						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg AST 12/04/87 1555

Received By: Ben Crawford Howard Sol 12/04/87 1555

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00112

C/C Control No. 00760

PROJECT NAME/NUMBER PRBA GW Samples/T9,8

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS W. Kegley, M. Goldberg, S. Gottlieb

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03035	Fernald Well 15s	12/04/87 1241	GW	40ml VOA		
L 3035				1/0 ml VOA		
D 3035				40ml VOA		
D 3035				500ml amber		
D 3035				500ml plastic		
D 3035				4 liter amber		
D 3035				1 gallon plastic		
D 3035				1 liter plastic		
D 3035				125ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, AST 12/04/87 1555

   Received By: Graefel Howard Sol 12/04/87 1555

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00711

C/C Control No. 00766

PROJECT NAME/NUMBER RCRA Groundwater sampling T98 LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS M. Goldberg, S. Goldberg, V. Kegley CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
020324	Fernald 135	12/04/87-1024	GW	40ml VOA		
↓	↓	↓	↓	40ml VOA		
				40ml VOA		
				500ml amber		
				500ml plastic		
				4L plastic		
				1gal plastic		
				1L plastic		
↓	↓	↓	↓	125ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, AST, 12/04/87 1555
   Received By: Ben Crapel Howard Sci 12/04/87 1555
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

394

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FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00710

C/C Control No. 00765

PROJECT NAME/NUMBER BCRA Groundwater sampling T98 LAB DESTINATION Howard LAB

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03033	Fernald 135	12/04/87-1024	GW	40ml VOA		
03033		12/04/87 1024		40ml VOA		
03033		12/04/87 - 1024		40ml VOA		
				500ml amber		
				500ml plastic		
				4l plastic		
				1 gallon plastic		
				1 L plastic		
				125ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shannon Goldberg, AST, 12/04/87 1555
   Received By: Brad C. Howard Sab 12/04/87 1555
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

395

212

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00708

C/C Control No. 00764

PROJECT NAME/NUMBER RCRA-GROUNDWATER sampling/T9.8

LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W Kegley

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03032	Fernald - P2	12/04/87 0915	GW	40ml VOA		
03032	P2	12/04/87		40ml VOA		
03032	P2	12/04/87		40ml VOA		
03032	P2	12/04/87		500ml Amber		
03032	P2	12/04/87		500ml Plastic		
03032	P2	12/04/87		4L plastic		
03032	P2	12/04/87		1gal plastic		
03032	P2	12/04/87		1L plastic		
03032	P2	12/04/87		125ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shannon Goldberg, ATI, 12/04/87 1555

Received By: Ben Crowell Howard Lab 12/4/87 1555

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

396

212

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00701

C/C Control No. 00763

PROJECT NAME/NUMBER RCRA Groundwater / T9.8

LAB DESTINATION Howard LAB

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W Kegley

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03031	Fernald - P-1	12/04/87 0833	GW	40ml VOA		
03031	P-1	12/04/87 0833		40ml VOA		
03031	P1	12/04/87 0833		40ml VOA		
03031	P1	12/04/87 0833		500ml Amber		
03031	P1	12/04/87 0833		500ml plastic		
03031	P1	12/04/87 0833		4L Amber		
03031	P1	12/04/87 0833		1gal plastic		
03031	P1	12/04/87 0833		1L plastic		
03031	P1	12/04/87 0833		125ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shawn Goldberg, ASI, 12/04/87 1455
   Received By: Bill Crawford Howard Lab 12/4/87 1455
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

397

212

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00705

C/C Control No. 00762

PROJECT NAME/NUMBER RCRA Groundwater/T9.8

LAB DESTINATION Howard LAB

SAMPLE TEAM MEMBERS M. Goldberg, S. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03029	Fernald well 22S	12/03/87-1405	GW	40ml VOA		
03029	22S	12/03/87-1405		40ml VOA		
03029	22S	12/03/87-1405		40ml VOA		
03029	22S	12/03/87-1405		500ml amber		
03029	22S	12/03/87-1405		500ml plastic		
03029	22S	12/03/87-1405		4L Amber		
03029	22S	12/03/87-1405		1gal plastic		
03029	22S	12/03/87-1405		1L plastic		
03029	22S	12/03/87-1405		125ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, EST, 12/03/87 1400
   Received By: Hans Hauser / HLI 12/03/87 1400
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00704

C/C Control No. 00761

PROJECT NAME/NUMBER BCPA GW Sample / T9.8

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Keagley

CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03028	Fernald Well 21s	12/03/87 1330	GW	40ml VOA		
03028				40ml VOA		
03028				40ml VOA		
03028				500ml amber		
03028				500ml plastic		
03028				1L amber		
03028				1gal. plastic		
03028				1 Liter plastic		
03028				125ml plastic		
03030	Fernald Trip Blank	12/03/87 NA	Trip Blank	40ml VOA		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shawn Mullen, AST, 12/8/87 1600

Received By: Peter Cantelli 12/3/87 1600

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

399

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FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00703

C/C Control No. 00760

PROJECT NAME/NUMBER RCRA GROUNDWATER T98

LAB DESTINATION Howard LAB

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03027	Fernald well 19d	12/02/87-1125	GW	40ml VOA		
03027	19d	12/03/87		40ml VOA		
03027	19d	12/03/87		40ml VOA		
03027	19d	12/03/87		500ml amber		
03027	19d	12/03/87		500ml plastic		
03027	19d	12/03/87		4L Amber		
03027	19d	12/03/87		1gal plastic		
03027	19d	12/03/87		1L plastic		
03027	19d	12/03/87		125ml plastic		
03027						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shawn Goldberg, AFT, 12/03/87 1600
   Received By: Gary Howard, HLT 12/03/87 1600
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

400

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FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00701

C/C Control No. 00759

PROJECT NAME/NUMBER RCRA Groundwater IT9.8

LAB DESTINATION Howard LAB

SAMPLE TEAM MEMBERS M. Goldberg, S. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03026	Fernald well 19S	12/03/87-1059	GW	40ml VOA		
03026	19S	12/03/87-1059		40ml VOA		
03026	19S	12/03/87-1059		40ml VOA		
03026	19S	12/03/87-1059		500ml Amber ~~40ml VOA~~		
03026	19S	12/03/87-1059		500ml Plastic ~~40ml VOA~~		
03026	19S	12/03/87-1059		4L Amber		
03026	19S	12/03/87-1059		1gal plastic		
03026	19S	12/03/87-1059		1L plastic		
03026	19S	12/03/87-1059		125ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, ASI, 12/03/87, 1600

Received By: [illegible] 12/03/87 1600

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

401

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FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00702

C/C Control No. 00758

PROJECT NAME/NUMBER RCRA Groundwater T9.8

LAB DESTINATION Howard LAB

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. Hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03025	Fernald well 3	12/03/87-1017	GW	40ml VOA		
03025	3	12/03/87-1017	GW	40ml VOA		
03025	3	12/03/87-1017	GW	40ml VOA		
03025	3	12/03/87-1017	GW	500ml Amber		
03025	3	12/03/87-1017	GW	500ml plastic		
03025	3	12/03/87-1017	GW	4L Amber		
03025	3	12/03/87-1017	GW	1gal plastic		
03025	3	12/03/87-1017	GW	1L plastic		
03025	3	12/03/87-1017	GW	125ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, AST, 12/03/87 1600
   Received By: Clay Jackson ILT 12/3/87 1600
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

R/A Control No. 00700

C/C Control No. 00757

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

PROJECT NAME/NUMBER RCRA Groundwater Sample/1.9.8 LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03024	Fernald Well 4	12/02/93 0925	GW	40ml VOA		
03024				40ml VOA		
03024				40ml VOA		
03024				500ml amber		
03024				500ml plastic		
03024				4L Liter amber		
03024				1gal. plastic		
03024				1L liter plastic		
03024				125ml plastic		
03024						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shawn Heidberg, AST, 12/03/93/1371600
   Received By: Gary Howard HLL 12/03/93 1640
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

403

21P

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00699

C/C Control No. 00751

PROJECT NAME/NUMBER BCRA Groundwater Sample/79.8

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03023	Fernald Well 4	12/03/87 1925	GW	40 ml VOA		
03023				40 ml VOA		
03023				40 ml VOA		
03023				500 ml amber		
03023				500 ml plastic		
03023				4L plastic		
03023				2 gallon plastic		
03023				1L plastic		
03023				125 ml plastic		
03023						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Johanna Goldberg AJI, 12/03/87 1600
   Received By: [illegible] Howard Labs 12/04/87 1100
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

404

212

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00706

C/C Control No. 00750

PROJECT NAME/NUMBER BCBA Groundwater Sample / TG.8

LAB DESTINATION ~~Broad Labs~~ RSL - OAK RIDGE, TENN

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kegley

CARRIER/WAYBILL NO. ~~hand delivery~~ FED. EXP. 4996276935

TRIPLICATE

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
D3022	Fernald Well 4	12/03/87 0925	GW	1-40 ml VOA		
D3022			GW	1-40 ml VOA		
D3022				1-40 ml VOA		
D3022				1-500 ml amber		
D3022				1-500 ml plastic		
D3022				1-4L amber		
D3022				1-1 gallon plastic		
D3022				1-1 Liter plastic		
D3022				1-125 ml plastic		

Special Instructions: Sample # 1 of 9, 2 of 9, 3 of 9, 4 of 9, 5 of 9, 6 of 9, 8 of 9, 9 of 9 SENT TO MILLBROOK FOR ALL PARAMETERS LISTED

Possible Sample Hazards: LOW LEVEL RADIONUCLIDES

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: M. J. Goldberg - NST - 12/03/87 - 1600

Received By: Walter Kreck JT - 12.3.87 @ 1600

2. Relinquished By: Walter Kreck JT - 12.3.87 @ 1730

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

405

212

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00678

C/C Control No. 00749

PROJECT NAME/NUMBER RCRA Groundwater Samples/T.9.8 LAB DESTINATION Howard Lab.

SAMPLE TEAM MEMBERS S. Goldberg, W. Kegley, M. Goldberg CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03020	Fernald Well 5	12/02/87 1340	GW	40ml VOA		
03020	↓	↓	↓	40ml VOA		
03020				40ml VOA		
03020				500ml amber		
03020				500ml plastic		
03020				4L Amber		
03020				1gal plastic		
03020				1 Liter plastic		
03020				125ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shayna Mellburg, AT 12/02/87 1443
   Received By: Ben Leyke / [illegible] 12/2/87 1443
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

406

219

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. D06916

C/C Control No. 00747

PROJECT NAME/NUMBER RCRA Groundwater Samp/I.7,8

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, W. Kigley

CARRIER/WAYBILL NO. hand delivery

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03018	Fernald Well 10	12/02/87 1150	GW	40 ml VOA		
03018				40 ml VOA		
03018				40 ml VOA		
03018				500 ml amber		
03018				500 ml plastic		
03018				4 L Amber		
03018				1 gal plastic		
03018				1 liter plastic		
03018				125 ml plastic		
03018						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg-RSI 12/2/87 1443

Received By: Rachel Howard Sol 12/2/87 1443

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

212

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FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00697

C/C Control No. 00743

PROJECT NAME/NUMBER [illegible]

LAB DESTINATION [illegible]

SAMPLE TEAM MEMBERS [illegible]

CARRIER/WAYBILL NO. [illegible]

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
[illegible]	[illegible]	[illegible]	GW	[illegible]		
[illegible]				[illegible]		
[illegible]				[illegible]		
[illegible]				[illegible]		
[illegible]				[illegible]		
[illegible]				[illegible]		
[illegible]				[illegible]		
[illegible]				[illegible]		
[illegible]				[illegible]		
[illegible]				[illegible]		
[illegible]				[illegible]		
[illegible]				[illegible]		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [illegible] 12/03/87 1413

Received By: [illegible] 12/3/87 1413

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00615

C/C Control No. 00746

PROJECT NAME/NUMBER BCBA Groundwater/F.9.8

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, W. Hayley, M. Goldberg

CARRIER/WAYBILL NO. Hand carried

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03016	Fernald Well 1.5	12/02/87 1035	GW	40ml VOA		
03016				40ml VOA		
03016				40ml VOA		
03016				500 ml amber		
03016				500ml plastic		
03016				4 liter Amber		
03016				1 gal plastic		
03016				1 liter plastic		
03016				125ml plastic		
03016						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, ASI, 12/2/87 1443
   Received By: Ben Howard 12/2/87 1443

2. Relinquished By:
   Received By:

3. Relinquished By:
   Received by:

4. Relinquished By:
   Received By:

409

219

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00694

C/C Control No. 00745

PROJECT NAME/NUMBER RCRA Groundwater Sample/T.9.8

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS W. Bagley, M. Goldberg, S. Goldberg

CARRIER/WAYBILL NO. hand carried

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03015	Fernald Well 8d	12/02/87 1010	GW	40 ml VOA		
03015				40 ml VOA		
03015				40 ml VOA		
03015				500 ml amber		
03015				500 ml plastic		
03015				1 Liter Amber		
03015				1 gal plastic		
03015				1L plastic		
03015				125 ml plastic		
03021	Fernald Trip Blank	12/02/87 NA	Trip blank	40 ml VOA		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, ASL, 12/02/87 11:13

Received By: Ben Crawford Howard Lab 12/2/87 1443

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

410

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FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00673

C/C Control No. 00744

PROJECT NAME/NUMBER PCP/TCE Groundwater Samples/T.9.8

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS W. Begley, M. Goldberg, S. Goldberg

CARRIER/WAYBILL NO. hand carried

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03014	Fernald Well 8s	12/02/87 0930	GW	40 ml VOA		
03014				40 ml VOA		
03014				40 ml VOA		
03014				500 ml poly		
03014				500 ml plastic		
03014				4 L Amber		
03014				1 gal plastic		
03014				1 L plastic		
03014				125 ml plastic		
03019	Spiked QA/QC ampules	12/02/87 NA	QA/QC spiked ampules			

Special Instructions: filter metals for Well 8s (03014)

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, AST, 12/02/87 1443
   Received By: Ron Crawford Howard 12/2/87 1443
2. Relinquished By:
   Received By:
3. Relinquished By: metals to be lab filtered
   Received by:
4. Relinquished By:
   Received By:

411

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FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00692

C/C Control No. 00743

PROJECT NAME/NUMBER RCRA Groundwater Sampling T9.8

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, W. Hagley, M. Goldberg

CARRIER/WAYBILL NO. hand carry

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03012	Fernald Well 9	12/01/87 1451	GW	40ml VOA		
03012				40ml VOA		
03012				40ml VOA		
03012				500ml Amber		
03012				500ml Plastic		
03012				1L Amber		
03012				1gal plastic		
03012				1L plastic		
03012				125ml plastic		
03012						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shannon Hildebrand AST, 12/01/87 1555
   Received By: Crawford Howard Sol 12/1/87 1555
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

212

R/A Control No. 00011

C/C Control No. 00742

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

PROJECT NAME/NUMBER RCRA Groundwater sampling T98

LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS S. Goldberg, M Goldberg, W Kegley

CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03011	Fernald 18d	12/01/87 1135	GW	40ml VOA		
03011		12/01/87 1135	GW	40ml VOA		
03011		12/01/87 1135	GW	40ml VOA		
03011		12/01/87 1135	GW	500ml Amber		
03011		12/01/87 1135	GW	500ml plastic		
03011		12/01/87 1135	GW	4L Amber		
03011		12/01/87 1135	GW	1gal plastic		
03011		12/01/87 1135	GW	1L plastic		
03011		12/01/87 1135	GW	125ml plastic		
03011						

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, AST 12/01/87 1555
   Received By: Ben Crouch Transport Sol 12/1/87 1555
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00640

C/C Control No. 00741

PROJECT NAME/NUMBER RCRA Groundwater Sampling / TPS

LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS S. Goldberg, M Goldberg, W. Kegley

CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03010	Fernald 18S	12/01/87 - 1135	GW	40ml VOA		
03010	18S	12/01/87 - 1135	GW	40ml VOA		
03010	18S	12/01/87 - 1135	GW	40ml VOA		
03010	18S	12/01/87 - 1135	GW	500ml amber		
03010	18S	12/01/87 - 1135	GW	500ml plastic		
03010	18S	12/01/87 - 1135	GW	4L Amber		
03010	18S	12/01/87 - 1135	GW	1gal plastic		
03010	18S	12/01/87 - 1135	GW	1L plastic		
03010	18S	12/01/87 - 1135	GW	125ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, ASI 12/01/87 1555

Received By: [illegible] Howard Sci 12/1/87 1555

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

414

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FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00689

C/C Control No. 00740

PROJECT NAME/NUMBER RCRA Groundwater RI/FS T 9.8

LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg, G. Kagley

CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03009	Fernald 18d	12/01/87 1135	GW	40ml VOA		
03009	18d		GW	40ml VOA		
03009	18d		GW	40ml VOA		
03009	18d		GW	500ml amber		
03009	18d		GW	500ml plastic		
03009	18d		GW	4L Amber		
03009	18d		GW	1gal plastic		
03009	18d		GW	1L plastic		
03009	18d		GW	125ml plastic		

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg ASI 12/01/87 1355

Received By: Barbara Fed Howard 30/12/1/87 1355

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

415

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FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00633

C/C Control No. 00739

PROJECT NAME/NUMBER RCRA Groundwater Sample T9.8

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, W. Kegley, N. Goldberg

CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
[illegible]	[illegible] 1 [illegible]	12/1/87 [illegible]	G(W)	40 ml VOA		
3008	1 [illegible]	1035	G(W)	40 ml VOA		
3008	1 [illegible]	1035	G(W)	40 ml VOA		
3008	1 [illegible]	1035	G(W)	500 ml Plastic		
3008	1 [illegible]	1035	G(W)	500 ml Plastic		
3008	1 [illegible]	1035	G(W)	1L Amber		
3008	1 [illegible]	1035	G(W)	1gal plastic		
3008	1 [illegible]	1035	G(W)	1L plastic		
3008	1 [illegible]	1035	G(W)	125ml plastic		

Special Instructions: filter metals

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, ASI, 12/01/87, 1555

Received By: Crawford Howard Sub 12/1/87 1555

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00687

C/C Control No. 00737

PROJECT NAME/NUMBER BCBA Groundwater sampling FT9.8 LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03006	Fernald 16d	12/01/87-0937	GW	40ml VOA		
03006	16d	12/01/87-0937	GW	40ml VOA		
03006	16d	12/01/87-0937	GW	40ml VOA		
03006	16d	12/01/87-0937	GW	500ml Amber		
03006	16d	12/01/87-0937	GW	500ml plastic		
03006	16d	12/01/87-0937	GW	4L Amber		
03006	16d	12/01/87-0937	GW	1gal plastic		
03006	16d	12/01/87-0937	GW	1L plastic		
03006T	16d	12/01/87-0937	GW	125ml plastic		

Special Instructions: filter metals

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon Goldberg, AST, 12/01/87 1555

   Received By: Ben Campbell Howard Labs 12/1/87 1555

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 006360

C/C Control No. 00736

PROJECT NAME/NUMBER RCRA Groundwater Sampling/T 9.8

LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg

CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03005	Fernald 165	12/01/87 - 0840	GW	40ml VOA		
03005	165	12/01/87 - 0840	GW	40ml VOA		
03005	165	12/01/87 - 0840	GW	40ml VOA		
03005	165	12/01/87 - 0840	GW	500ml Amber		
03005	165	12/01/87 - 0840	GW	500ml plastic		
03005	165	12/01/87 - 0840	GW	1L Amber		
03005	165	12/01/87 - 0840	GW	1gal plastic		
03005	165	12/01/87 - 0840	GW	1L plastic		
03005	165	12/01/87 - 0840	GW	125ml plastic		
03013	Trip Blank	12/01/87 - NA	Trip Blank	40ml glass VOA		

Special Instructions: filter metals

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shawn Goldberg, AST, 12/01/87 15:50 1550
   Received By: [illegible] 12/1/87 1555
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00350

C/C Control No. 00735

PROJECT NAME/NUMBER RCRA Groundwater sampling/TT9.8 LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03004	Fernald SW-2	11/30/87 - 1424	GW	40ml VOA		
03004	SW-2	11/30/87 - 1424	GW	40ml VOA		
03004	SW-2	11/30/87 - 1424	GW	40ml VOA		
03004	SW-2	11/30/87 - 1424	GW	500ml amber		
03004	SW-2	11/30/87 - 1424	GW	500ml plastic		
03004	SW-2	11/30/87 - 1424	GW	1L amber		
03004	SW-2	11/30/87 - 1424	GW	1 gal plastic		
03004	SW-2	11/30/87 - 1424	GW	1 L plastic		
03004	SW-2	11/30/87 - 1424	GW	125ml plastic		

Special Instructions: filter metals

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon D. Goldberg, AST, 11/30/87 1555

   Received By: Ben Crawford TS owner Feb 12/1/87 1555

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

212

119

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00349

C/C Control No. 00734

PROJECT NAME/NUMBER BCRA Groundwater Sampling FT9.8 LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03003	Fernald DS	11/30/87 1140	GW	40 ml VOA		
03003	DS	11/30/87 1140	GW	40 ml VOA		
03003	DS	11/30/87 1140	GW	40 ml VOA		
03003	DS	11/30/87 1140	GW	500 ml amber		
03003	DS	11/30/87 1140	GW	500 ml plastic		
03003	DS	11/30/87 1140	GW	4L amber		
03003	DS	11/30/87 1140	GW	1 gal plastic		
03003	DS	11/30/87 1140	GW	1L plastic		
03003	DS	11/30/87 1140	GW	125 ml plastic		

Special Instructions: filter metals

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shawn D. Millberg, AST, 11/30/87 1555

   Received By: Benchmark Travel Sat 12/1/87 1555

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

420

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FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00548

C/C Control No. 00733

PROJECT NAME/NUMBER RCRA Groundwater sampling/TG.8

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg

CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03002	Fernald AW	11/30/87 - 1113	GW	40ml VOA		
03002	AW	11/30/87 - 1113	GW	40ml VOA		
03002	AW	11/30/87 - 1113	GW	40ml VOA		
03002	AW	11/30/87 - 1113	GW	500ml Amb		
03002	AW	11/30/87 - 1113	GW	500ml plastic		
03002	AW	11/30/87 - 1113	GW	1L Amber		
03002	AW	11/30/87 - 1113	GW	1gal plastic		
03002	AW	11/30/87 - 1113	GW	1L plastic		
03002	AW	11/30/87 - 1113	GW	125ml plastic		
03007						

Special Instructions: filter metals

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon D. Goldberg, AST, 11/30/87 1554

   Received By: Bus Crawford Howard Labs. 12/1/87 1555

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00347

C/C Control No. 00732

PROJECT NAME/NUMBER RCRA Groundwater sampling / T9.8

LAB DESTINATION Howard LABS

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg

CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03001	Fernald HKd	11/30/87 1045	GW	40ml VOA		
03001	HKd	11/30/87 1045	GW	40ml VOA		
03001	HKd	11/30/87 1045	GW	40ml VOA		
03001	HKd	11/30/87 1045	GW	500ml amber		
03001	HKd	11/30/87 1045	GW	500ml plastic		
03001	HKd	11/30/87 1045	GW	4L amber		
03001	HKd	11/30/87 1045	GW	1gal plastic		
03001	HKd	11/30/87 1045	GW	1L plastic		
03001	HKd	11/30/87 1045	GW	125ml plastic		

Special Instructions: filter metals

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Sharon D. Goldberg, AST, 11/30/87 1554

   Received By: Ben Crawford Howard Sob 12/1/87 1555

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples

FERNALD RI/FS

CHAIN-OF-CUSTODY RECORD

R/A Control No. 00346

C/C Control No. 00731

PROJECT NAME/NUMBER RCRA Groundwater Sampling/T9.8

LAB DESTINATION Howard Labs

SAMPLE TEAM MEMBERS S. Goldberg, M. Goldberg

CARRIER/WAYBILL NO. hand deliver

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
03000	Fernald HKS	11/30/87 0947	GW	40ml VOA		
03000	HKS	11/30/87 0947	GW	40 ml VOA		
03000	HKS	11/30/87 0947	GW	40 ml VOA		
03000	HKS	11/30/87 0947	GW	500ml amb		
03000	HKS	11/30/87 0947	GW	500ml plastic		
03000	HKS	11/30/87 0947	GW	4L amber		
03000	HKS	11/30/87 0947	GW	1gal plastic		
03000	HKS	11/30/87 0947	GW	1L plastic		
03000	HKS	11/30/87 0947	GW	125ml plastic		

Special Instructions: filter metals

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Shawn D. Goldberg, ASI, 11/30/87 1553

Received By: Ann Crawford Howard Labs 12/1/87 1555

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

423

212

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0030

C/C Control No. 00787

PROJECT NAME: PRBA Groundwater Sampling

PROJECT NUMBER: 602T9.8

PROJECT MANAGER: B. Wilde

BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/07/87

LAB DESTINATION: Howard Lab

LABORATORY CONTACT: G. Howard

SEND LAB REPORT TO: S. Goldberg/B. Wilde
10845 Hamilton Cleves
Hwy, OH 45001

DATE REPORT REQUIRED:

PROJECT CONTACT: S. Goldberg

PROJECT CONTACT PHONE NO.: (513) 738-4100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
02053	Water Water	40ml	None	HSL - Vol. Org.	
02053	Rinsate	40ml	None	HSL - Vol. Org.	
02053		40ml	None	HSL - Vol. Org.	
02053		500ml	H_2SO_4	Phenol/Nitrate	
02053		500ml	NaOH	Cyanide	
02053		1 Liter	None	Cr^{+6}	
02053		1 gallon	HNO_3	Rad	
02053		1 Liter	HNO_3	Metals	
02053		125ml	None	Coliform	
02054	Trip Blank	40ml	None	Trip Blank	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY

Date/Time ____

424

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. No. 29
C/C Control No. 00783

PROJECT NAME: RCRA Groundwater sampling
PROJECT NUMBER: 602 T9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/07/87
LAB DESTINATION: Howard LABs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: Dick Wilde / NSI
10845 Hamilton Cleves
Ross, Ohio 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shanon Goldberg
PROJECT CONTACT PHONE NO.: 513-738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03052	GW	40ml	None	HSL - Vol. org.	
03052	↓	40ml	None	HSL - Vol. org.	
03052	↓	40ml	None	HSL - Vol. org.	
03052	↓	500 ml	H_2SO_4	Phenol / Nitrates	
03052	↓	500 ml	NaOH	Cyanide	
03052	↓	4 L	None	Cr^{+6}	
03052	↓	1 gallon	HNO_3	Rad. Scan	
03052	↓	1 L	HNO_3	metals	
03052	↓	125ml	None	coliform	
03052					

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other RAD (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

428

212

06.28

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No.
C/C Control No. 007841

PROJECT NAME: RCRA Groundwater sampling
PROJECT NUMBER: 602 T 9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/07/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: Dick Wilde/AST
10845 Hamilton Cleves
Ross, Ohio 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shanon D. Goldberg
PROJECT CONTACT PHONE NO.: 513-738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03051	GW	40 ml	None	HSL - Vol. org.	
03051		40 ml	None	HSL - Vol. org.	
03051		40 ml	None	HSL - Vol. org.	
03051		500 ml	H_2SO_4	Phenol / Nitrate	
03051		500 ml	NaOH	Cyanide	
03051		4 Liter	None	CR+6	
03051		1 gallon	HNO_3	Rad. Scan	
03051		1 Liter	HNO_3	Metals	
03051		125 ml	None	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other BAD (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

4236

12

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. No. 27
C/C Control No. 00782

PROJECT NAME: RCRA Groundwater Sampling
PROJECT NUMBER: 602 T 9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/07/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: Dick Wilde / IAST
10845 Hamilton Cleves
Ross, Ohio 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: SHANON Goldberg
PROJECT CONTACT PHONE NO.: 513-738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03050	GW	40ml	None	HSL - Vol. org.	
03050		40ml	None	HSL - Vol. org.	
03050		40ml	None	HSL - Vol. org.	
03050		500ml	H_2SO_4	Phenol / Nitrates	
03050		500ml	NaOH	Cyanide	
03050		4 Liter	None	CR^{+6}	
03050		1 gallon	HNO_3	Rad. Scan	
03050		1 Liter	HNO_3	METals	
03050		125 ml	none	coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other BAD (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY

Received By _____ Date/Time _____

06.44

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No.
C/C Control No. 00193

PROJECT NAME: BBA Groundwater Sampling
PROJECT NUMBER: 602 T9.8
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/07/87
LAB DESTINATION: IT: Middlebrook
LABORATORY CONTACT: D. Stagg
SEND LAB REPORT TO: S. Goldberg / R. Wilde
108415 Hamilton-Cleves
Ross, OH 45061
DATE REPORT REQUIRED: NORMAL TURNAROUND
PROJECT CONTACT: Shannon Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03049	GW	40 ml	none	HSL-VOL-ORGANIC (SAMPLE # 1 OF 10)	
03049	↓	40 ml	none	(SAMPLE # 2 OF 10)	
03049		40 ml	none	(SAMPLE # 3 OF 10)	
03049		500 ml	H_2SO_4	PHENOL / NITRATE (SAMPLE # 5 OF 10)	
03049		500 ml	NaOH	CYANIDE (SAMPLE # 6 OF 10)	
03049		1 liter	none	OTHER METALS, CR+6 (SAMPLE # 7 OF 10)	
03049		1 liter (FILTERED)	HNO_3	METALS (SAMPLE 9 OF 10)	
03049		125 ml	none	COLIFORM. (SAMPLE 10 OF 10)	
03049					

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other Prod (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By _____ Date/Time _____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0015
C/C Control No. 0014

PROJECT NAME: BCBA Groundwater Sampling
PROJECT NUMBER: 602 T9.3
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/07/87
LAB DESTINATION: IT-RSL-Oak Ridge
LABORATORY CONTACT: D. Harvey
SEND LAB REPORT TO: S. Goldberg/R. Wilde
10845 Hamilton-Cleves
Ross, OH 45061
DATE REPORT REQUIRED: NORMAL-TURNAROUND
PROJECT CONTACT: Shamon Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03049	GW	1gallon	HNO_3	Radiological - Full (8 OF 10)	
03049	GW	40ml	none	Screening (1 OF 10)	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

428

212

0.25

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No.
C/C Control No. 00780

PROJECT NAME: RCRA Groundwater sampling
PROJECT NUMBER: 602T 9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/07/87
LAB DESTINATION: Howard LAB
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: Dick Wilde/ASL
10845 Hamilton Cleves
Ross, Ohio 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: SHANON D. Goldberg
PROJECT CONTACT PHONE NO.: 513-738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03048	GW	40ml	None	HSL - Vol. org.	
03048		40 ml	None	HSL - Vol. Org.	
03048		40 ml	None	HSL - Vol. org.	
03048		500 ml	H_2SO_4	Phenol / Nitrates	
03048		500 ml	NaOH	Cyanide	
03048		4 Liter	none	Cr^{+6}	
03048		1 gallon	HNO_3	Rad. Scan	
03048		1 Liter	HNO_3	metals	
03048		125 ml	none	coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other RAD (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY Date/Time _____

430

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0..24
C/C Control No. 00779

PROJECT NAME: RCRA Groundwater Sampling
PROJECT NUMBER: 602.T.9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/06/87
LAB DESTINATION: Howard LAB
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: Dick Wilde / FEST
10845 Hamilton Cleves
Ross, Ohio 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Sharon Goldberg
PROJECT CONTACT PHONE NO.: 513-738-9100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03047	GW	40 ml	None	HSL - Vol. organic	
03047		40 ml	None	HSL - Vol. organic	
03047		40 ml	None	HSL - Vol. organic	
03047		500 ml	H_2SO_4	Phenol / Nitriles	
03047		500 ml	NaOH	Cyanide	
03047		4 Liter	None	Cr^{+6}	
03047		1 gallon	HNO_3	Rad. scan	
03047		1 Liter	HNO_3	metals	
03047		125 ml	None	coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By _____ Date/Time _____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 01.23
C/C Control No. 00718

PROJECT NAME: RCRA Groundwater Sampling
PROJECT NUMBER: (00)T918
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/05/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: S. Goldberg / R. Wilde
10845 Hamilton-Cleves
Ross OH, 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: S. Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-8310

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03045	GW	40 ml	none	HSL-Vol. Org.	
03045		40 ml	none	HSL-Vol. Org.	
03045		40 ml	none	HSL-Vol. Org.	
03045		500 ml	H_2SO_4	Phenol/Nitrate	
03045		500 ml	NaOH	Cyanide	
03045		4 Liter	none	Cl-16	
03045		1 gallon	HNO_3	Radxan	
03045		1 Liter	HNO_3	Metals	
03045		125 ml	None	Coliform	
03046	Trip blank	160 ml	none	Trip Blank	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

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No. 22

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No.
C/C Control No. 00197

PROJECT NAME: BCRA Groundwater Samples
PROJECT NUMBER: 6027.9.8
PROJECT MANAGER: B. Wilde
BILL TO:

PURCHASE ORDER NO.

DATE SAMPLES SHIPPED: 12/05/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: Dr. Howard
SEND LAB REPORT TO: S. Goldberg / B. Wilde, 10815 Hamilton-Cleves, Ross, OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: S. Goldberg
PROJECT CONTACT PHONE NO. (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
0301/4	GW	40 ml	none	HSL-Vol. Org.	
0302/4		40 ml	none	HSL-Vol. Org.	
0303/4		40 ml	none	HSL-Vol. Org.	
0304/4		500 ml	H_2SO_4	Phenol/Nitrate	
0305/4		500 ml	NaOH	Cyanide	
0306/4		4 Liter	none	Cr^{+6}	
0307/4		1 gallon	HNO_3	Rad scan	
0308/4		1 liter	HNO_3	Metals	
0309/4		125 ml	none	Coliform	
0310/4					

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

A3 6

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0119
C/C Control No. 001778

PROJECT NAME: RCRA Groundwater Samples
PROJECT NUMBER: 602T9.8
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/05/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: S. Goldberg / R. Wilde, 10845 Hamilton Cleves, Ross, OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: S. Goldberg
PROJECT CONTACT PHONE NO.: (513) 735-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03043	GW	40 ml	none	HSL - Vol. Org.	
03043	↓	40 ml	none	HSL - Vol Org.	
03043		40 ml	none	HSL - Vol Org.	
03043		500 ml	H_2SO_4	Phenol / Nitrate	
03043		500 ml	NaOH	Cyanide	
03043		4 Liter	none	Cr +6	
03043		1 gallon	HNO_3	Rad	
03043		1 Liter	HNO_3	Metals	
03043	↓	125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0017

C/C Control No. 00715

PROJECT NAME: RCRA GROUNDWATER SAMPLING 198

PROJECT NUMBER: 607 198

PROJECT MANAGER: DICK WILDE

BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 11 05 91

LAB DESTINATION: Howard Lab

LABORATORY CONTACT: J. Howard

SEND LAB REPORT TO: Dick Wilde 10845 Hamilton Cleves Road, Ohio 45041

DATE REPORT REQUIRED:

PROJECT CONTACT: Charmaine Goldberg

PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
05042	GW	40 ml	none	HSL - Vol org	
05042		40 ml	none	HSL - Vol org	
05042		40 ml	none	HSL - Vol org	
05042		500 ml	H_2SO_4	Phenol N-Nitr	
05042		500 ml	NaOH	Cyanide	
05042		4 liter	none	Cr +6	
05042		1 gallon	HNO_3	Rad Scan	
05042		1 liter	HNO_3	metal	
05042		125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal X Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client ____ Disposal by Lab X

FOR LAB USE ONLY

Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0..17
C/C Control No. 007711

PROJECT NAME: PCBs/Groundwater Samples/T9.8
PROJECT NUMBER: 6027T9.8
PROJECT MANAGER: B. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/05/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: S. Goldberg / B. Wilde, 10845 Hamilton-Cleves, Ross, OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: S. Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-9100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
030411	GW	40 ml	none	HSL-Vol. Org.	
030411		40 ml	none	HSL-Vol. Org.	
030411		40 ml	none	HSL-Vol. Org.	
030411		500 ml	H_2SO_4	Phenol/Nitrate	
030411		500 ml	NaOH	Cyanide	
030411		4 Liter	None	Cr+6	
030411		1 gallon	HNO_3	Radscan	
030411		1 liter	HNO_3	Metals	
030411		125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY

Date/Time _____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0..16
C/C Control No. 00773

PROJECT NAME: BCRA Groundwater Sampling
PROJECT NUMBER: 602 T9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/04/87
LAB DESTINATION: Howard LABS
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: Dick Wilde/NST
10845 Hamilton Cleves
Ross, OHIO 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shanon Goldberg
PROJECT CONTACT PHONE NO.: 513-738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03039	GW	40 ml	None	HSL - Vol. org.	
		40 ml	None	HSL - Vol. org.	
		40 ml	None	HSL - Vol. org.	
		500 ml	H_2SO_4	Phenol/Nitrate	
		500 ml	NaOH	Cyanide	
		4 Leter	None	Cr^{+6}	
		1 gallon	HNO_3	Rad scan	
		1 Leter	HNO_3	Metal	
		125 ml	None	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other RAD (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 01. 15
C/C Control No. 00772

PROJECT NAME: BCBA GW Samples
PROJECT NUMBER: 602.T9.8
PROJECT MANAGER: B. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/01/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: Sy. Howard
SEND LAB REPORT TO: S. Goldberg / Fernald, 10845 Hamilton-Cleves, Ross, OH 45013
DATE REPORT REQUIRED:
PROJECT CONTACT: S. Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-9100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03035	GW	40 ml	none	HSL-Vol. Org.	
03035		40 ml	none	HSL-Vol. Org.	
03035		40 ml	none	HSL-Vol. Org.	
03038		500 ml	H_2SO_4	Phenol/Nitrite	
03038		500 ml	NaOH	Cyanide	
03038		1 Liter	none	CLP-6	
03038		1 gallon	HNO_3	Rad Scan	
03038		1 Liter	HNO_3	Metals	
03038		125 ml	none	Coliform	
03040	Trip Blanks	80 ml	none	Trip Blanks	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Bad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

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G..14

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 00771
C/C Control No.

PROJECT NAME: KCRA GROUNDWATER SAMPLING TG.8
PROJECT NUMBER: 6020608
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12 04 87
LAB DESTINATION: HOWARD LABS
LABORATORY CONTACT: J. [illegible]
SEND LAB REPORT TO: S. Golden [illegible]
10595 [illegible]
ROSS OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: S. GOLDEN
PROJECT CONTACT PHONE NO.: (513) 738-4100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03037	GW	40 ml	none	HSL VOL 026	
03037		40 ml	none	HSL VOL 026	
03037		40 ml	none	HSL VOL 026	
03037		500 ml	H_2SO_4	Phenol [illegible]	
03037		500 ml	NaOH	Cyanide	
03037		4 liter	none	Cr 6	
03037		1 gallon	HNO_3	Rad [illegible]	
03037		1 liter	HNO_3	[illegible]	
03037		125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal X Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant 1 Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab X

FOR LAB USE ONLY
Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 00770 (Oct. 13)
C/C Control No. _____

PROJECT NAME: RCRA Groundwater Sampling
PROJECT NUMBER: 6020906
PROJECT MANAGER: K. Wade
BILL TO: _____

PURCHASE ORDER NO. _____

DATE SAMPLES SHIPPED: 12 OCT 87
LAB DESTINATION: Mounsky Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: S. Gobay, Fernald, 7400 Willey Road, Cincinnati, OH 45001
DATE REPORT REQUIRED: _____
PROJECT CONTACT: Shannon Gobay
PROJECT CONTACT PHONE NO.: (513) 738-3101

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03036	~~Formal~~ GW	40 ml	none		
03036		40 ml	none		
03036		40 ml	none		
03036		500 ml	H_2SO_4		
03036		500 ml	NaOH		
03036		4 liter	none		
03036		1 gallon	HNO_3		
03036		1 liter	HNO_3		
03036		125 ml	None		
03036					

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal X Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client _____ Disposal by Lab X

FOR LAB USE ONLY Received By _____ Date/Time _____

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 01.12
C/C Control No. 007769

PROJECT NAME: RCRA GW Sample/T9.8
PROJECT NUMBER: 602T9.8
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/01/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: D. Howard
SEND LAB REPORT TO: S. Goldberg / R. Wilde
10845 Hamilton Cleves
Boss, OH. 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Sinnon Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03035	GW	40ml	none	HSL-Vol. Org.	
03035		40ml	none	HSL-Vol. Org.	
03035		40ml	none	HSL-Vol. Org.	
03035		500ml	H_2SO_4	Phenol/Nitrate	
03035		500ml	NaOH	Cyanide	
03035		1 Liter	none	Cr^{+6}	
03035		1 gallon	HNO_3	Rad Scan	
03035		1 Liter	HNO_3	Metals	
03035		125ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

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06.11

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 00766
C/C Control No.

PROJECT NAME: RCRA Groundwater Sampling
PROJECT NUMBER: 602 T9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/04/87
LAB DESTINATION: Howard LAB
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: Dick Wilde, 10845 Hamilton Cleves, Ross, Ohio 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shanon Goldberg
PROJECT CONTACT PHONE NO.: 513-738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
030341	GW	40ml	None	HSL- Vol. Org	
↓	↓	40ml	None	HSL- Vol. Org	
		40ml	None	HSL- Vol. Org	
		500ml	H_2SO_4	Phenol / Nitrate	
		500ml	NaOH	cyanide	
		4L	None	Cr^{+6}	
		1 gallon	HNO_3	Rad. Scan	
		1 L	HNO_3	Metal	
↓	↓	125ml	None	coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other RAD (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 06.10
C/C Control No. 00765

PROJECT NAME: RCRA Groundwater sampling
PROJECT NUMBER: 602 T 9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/04/87
LAB DESTINATION: Howard LAB
LABORATORY CONTACT: J Howard
SEND LAB REPORT TO: Dick Wilde / AST
10845 Hamilton Cleves
Ross, Ohio 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: SHANON Goldberg
PROJECT CONTACT PHONE NO.: 513-738 3400

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03033	GW	40ml	None	HSL-VOL.org	
		40ml	None	HSL-VOL.-org	
		40ml	None	HSL-VOL. org	
		500ml	H_2SO_4	Phenol / Nitrate	
		500ml	NaOH	Cyanide	
		4L	None	Cr+6	
		1 gallon	HNO_3	Rad Scan	
		1 L	HNO_3	Metal	
		125ml	None	coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other RAD (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0..08

C/C Control No. 00764

PROJECT NAME: RCRA GW [illegible]

PROJECT NUMBER: 6020908

PROJECT MANAGER: R. [illegible]

BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12 04 87

LAB DESTINATION: HOWARD LABS

LABORATORY CONTACT: J. Howard

SEND LAB REPORT TO: S. Goldberg [illegible]
10845 [illegible]
ROSS, OH 45011

DATE REPORT REQUIRED:

PROJECT CONTACT: Shannon Goldberg

PROJECT CONTACT PHONE NO.: (513) 735 - 4100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03032	GW	40 ml	none	HSL VOL 026	
03032		40 ml	none	HSL VOL 026	
03032		40 ml	none	HSL VOL 026	
03032		500 ml	H_2SO_4	Phenol / Nitrate	
03032		500 ml	NaOH	Cyanide	
03032		4 liter	none	Cr +6	
03032		1 gallon	HNO_3	Rad Scan	
03032		1 liter	HNO_3	Metals	
03032		125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal X Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client ____ Disposal by Lab X

FOR LAB USE ONLY

Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0v.07
C/C Control No. 00763

PROJECT NAME: BCRA Groundwater Samples
PROJECT NUMBER: 6027.7.8
PROJECT MANAGER: B. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/04/97
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: Jn. Howard
SEND LAB REPORT TO: Su Goldberg / B. Wilde, 10545 Hamilton Cleves, Ross, OH 45061
DATE REPORT REQUIRED:
PROJECT CONTACT: Shannon Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03031	GW	40 ml	none	HSL-Vol. Org.	
03031		40 ml	none	HSL-Vol. Org.	
03031		40 ml	none	HSL-Vol. Org.	
03031		500 ml	H_2SO_4	Phenols, Nitrate	
03031		500 ml	NaOH	Cyanide	
03031		4 Liter	none	Cr +6	
03031		1 gallon	HNO_3	Rad scan	
03031		1 liter	HNO_3	Metals	
03031		125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 01 05
C/C Control No. 00762

PROJECT NAME: RCRA Groundwater Sampling
PROJECT NUMBER: 602 T 9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/03/87
LAB DESTINATION: Howard LABS
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: Dick Wilde / IAST
10845 Hamilton Cleves
Ross, OHIO 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: SHANON Goldberg
PROJECT CONTACT PHONE NO.: 513-738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03029	GW	40 ml	None	HSL-Vol. Org.	
03029		40 ml	None	HSL-Vol. Org.	
03029		40 ml	None	HSL-Vol. Org.	
03029		500 ml	H_2SO_4	Phenol/Nitrate	
03029		500 ml	NaOH	Cyanide	
03029		4 L	None	Cr+6	
03029		1 gal	HNO_3	Rad Scan	
03029		1 L	HNO_3	Metals	
03029		125 ml	None	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other RAD (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 06.04
C/C Control No. 00761

PROJECT NAME: RCRA GW Samples
PROJECT NUMBER: 602 T9.S
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/03/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: J. Goldberg / R. Wilde
10845 Hamilton Cleves
Ross OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shawn Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3150

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03028	GW	40 ml	none	HSL-Vol. Org.	
03028		40 ml	none	HSL-Vol. Org.	
03028		40 ml	none	HSL-Vol. Org.	
03028		500 ml	H_2SO_4	Phenol/Nitrate	
03028		500 ml	NaOH	Cyanide	
03028		4 Liter	none	Cr^{+6}	
03028		1 gallon	HNO_3	Rad Scan	
03028		1 Liter	HNO_3	Metals	
03028		125 ml	none	Coliform	
03030	Trip Blnk	40 ml (2)	none	Trip Blnk	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other BAD (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No.
C/C Control No. 00760

PROJECT NAME: RCRA Groundwater Sampling
PROJECT NUMBER: 602 T 9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

DATE SAMPLES SHIPPED: 12/07/87
LAB DESTINATION: Howard LAB
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: Dick Wilde/ASI
10845 Hamilton Cleves
Ross Ohio 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: SHANON Goldberg
PROJECT CONTACT PHONE NO.: 513-738-3100

PURCHASE ORDER NO.:

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03027	GW	40ml	None	HSL - Vol. Org.	
03027	↓	40ml	None	HSL - Vol. Org	
03027		40ml	None	HSL - Vol. Org	
03027		500ml	H_2SO_4	Phenol / Nitrate	
03027		500ml	NaOH	Cyanide	
03027		4L Amber	None	Cr +6	
03027		1 gal	HNO_3	Rad. Scan	
03027		1 L	HNO_3	metals	
03027		125ml	None	coliform	
03027					

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other RAD (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 00701
C/C Control No. 00759

PROJECT NAME: RCRA Groundwater sampling
PROJECT NUMBER: 602.T9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/03/87
LAB DESTINATION: Howard LABS
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: Dick Wilde / IAST
10845 Hamilton Cleves
Ross, Ohio 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Sharon Goldberg
PROJECT CONTACT PHONE NO.: 513-738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03026	GW	40 ml	None	HSL - Vol. Org	
03026		40 ml	None	HSL - Vol. ORG	
03026		40 ml	None	HSL - Vol. org	
03026		500 ml	H_2SO_4	Phenol / Nitrate	
03026		500 ml	NaOH	Cyanide	
03026		4 L	None	Cr +6	
03026		1 gal	HNO_3	Rad. Scan	
03026		1 L	HNO_3	METALS	
03026		125 ml	None	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other BAD (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY

Date/Time

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0..02
C/C Control No. 00758

PROJECT NAME: RCRA Groundwater 1T98
PROJECT NUMBER: 602 T98
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/03/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: Dick Wilde / IMST
10845 Hamilton Cleves
Ross, OHIO 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shanon Goldberg
PROJECT CONTACT PHONE NO.: 513-738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03025	GW	40ml	None	HSL - Vol. Org.	
03025	↓	40ml	None	HSL - Vol. Org.	
03025		40ml	None	HSL - Vol. Org.	
03025		500ml amber	H_2SO_4	Phenol / Nitrate	
03025		500ml plastic	NaOH	Cyanide	
03025		4L Amber	None	Cr^{+6}	
03025		1gal plastic	HNO_3	Rad scan	
03025		1L plastic	HNO_3	Metals	
03025	↓	125ml plastic	None	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other RAD. (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By _____ Date/Time _____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 01.00
C/C Control No. 00757

PROJECT NAME: RCRA Groundwater Sampling
PROJECT NUMBER: 602T9.8
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/03/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: S. Goldberg / R. Wilde, 1815 Hamilton Cleves, Ross, OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shannon Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03024	GW	40 ml	none	HSL-Vol. Org.	
03024		40 ml	none	HSL-Vol. Org.	
03024		40 ml	none	HSL-Vol. Org.	
03024		500 ml	H_2SO_4	Phenol / Nitrate	
03024		500 ml	NaOH	Cyanide	
03024		4 Liter	none	Cr^{+6}	
03024		1 gallon	HNO_3	Radscan	
03024		1 liter	HNO_3	Metals	
03024		125 ml	none	Coliform	
03024					

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0099
C/C Control No. 007751

PROJECT NAME: RCRA Groundwater Sampling
PROJECT NUMBER: 6022 T9.8
PROJECT MANAGER: B. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/03/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: O. A. Howard
SEND LAB REPORT TO: S. Goldberg / B. Wilde, 10345 Hamilton Cleves, Ross, OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shannon Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03023	GW	40 ml	none	HSL-Vol. Org.	
03023	↓	40 ml	none	HSL-Vol. Org.	
03023		40 ml	none	HSL-Vol. Org.	
03023		500 ml	H_2SO_4	Phenol/Nitrate	
03023		500 ml	NaOH	Cyanide	
03023		1 Liter	none	Cr+6	
03023		1 gallon	HNO_3	Radiogram	
03023		1 Liter	HNO_3	Metals	
03023	↓	125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 06, 06
C/C Control No. 00750

PROJECT NAME: RI/FS FERNALD RCRA Groundwater Sampling
PROJECT NUMBER: 602 T9.8
PROJECT MANAGER: Dick Wilde
BILL TO: ADVANCED SCIENCE INC. 2620 San Mateo NE, Suite D Albuquerque, N.M. 87110 ATTN: ACCT. PAYABLE
PURCHASE ORDER NO.

DATE SAMPLES SHIPPED: 12.3.87
LAB DESTINATION: TT/RSI
LABORATORY CONTACT: Jim Harvey / Darrell Stagg
SEND LAB REPORT TO: Dick Wilde / AST 10815 Hamilton Cleves Road, Ohio 45001
DATE REPORT REQUIRED: Normal Turnaround
PROJECT CONTACT: Shanon Gollberg
PROJECT CONTACT PHONE NO. 513-738-3100

(TRIPLICATE)

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03022	GW	40ml	None	HSL - Vol. ORG (1 of 9)	Sample # 1 of 9
03022		40ml	None	HSL - Vol. Org. (2 of 9)	2 of 9, 3 of 9
03022		40ml	None	HSL - Vol. Org (3 of 9)	4 of 9, 5 of 9,
03022		500 ml	H_2SO_4	Phenol / Nitrates (4 of 9)	6 of 9, 8 of 9
03022		500ml	NaOH	Cyanide (5 of 9)	9 of 9 TO BE
03022		4L	None	CR+6 (6 of 9)	SENT TO MIDDLEBORO
03022		1gal	HNO_3	Rad scan (7 of 9)	FOR RCRA ANALYSIS &
03022		1L	HNO_3	metals (8 of 9)	PARAMETERS LISTED.
03022		125ml	None	Coliform (9 of 9)	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other LOW LEVEL RADIONUCLIDES (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By _____ Date/Time _____

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 00078
C/C Control No. 00717

PROJECT NAME: RCRA Groundwater Sampler
PROJECT NUMBER: 6027.8
PROJECT MANAGER: B. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/02/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: S. Goldberg / B. Wilde, 10815 Hamilton Cleves, Ross OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shannon Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03020	GW	40 ml	none	HCL-Vol. O.g.	
03020		40 ml	none	HCL-Vol. O.g.	
03020		40 ml	none	HCL-Vol. O.g.	
03020		500 ml	H_2SO_4	Phenol/Nitrate	
03020		500 ml	NaOH	Cyanide	
03020		1 Liter	none	Cr+6	
03020		1 gallon	HNO_3	Rad Scan	
03020		1 liter	HNO_3	Metals	
03020		125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 00036
C/C Control No. 00747

PROJECT NAME: RCRA Pit Groundwater Sampling
PROJECT NUMBER: 6022 T01.3
PROJECT MANAGER: B. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/02/97
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: S. Goldberg / B. Wilde, 10845 Hamilton Cleves, Ross OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shanon Goldberg
PROJECT CONTACT PHONE NO.: (513) 735-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03013	GW	40 ml	none	HSL - Vol. Org	
03013		40 ml	HCl	HSL - Vol. Org.	
03013		40 ml	none	HSL - Vol. Org	
03013		500 ml	H_2SO_4	Phenol/Nitrate	
03013		500 ml	NaOH	Cyanide	
03013		4 Liter	none	Cr+6	
03013		1 gallon	HNO_3	Rad scan	
03013		1 liter	HNO_3	Metals	
03013		125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Bad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 06097
C/C Control No. 00748

PROJECT NAME: RCRA GW SAMPLING
PROJECT NUMBER: 607 F9.8
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12 02 97
LAB DESTINATION: [illegible]
LABORATORY CONTACT: [illegible]
SEND LAB REPORT TO: S. Golding [illegible]
10845 [illegible]
[illegible], OH 4[illegible]

DATE REPORT REQUIRED:
PROJECT CONTACT: Shanon Golding
PROJECT CONTACT PHONE NO.: (513) 738-3110

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03017	GW	40 ml	none	HSL Vol Org	
03014		40 ml	none	HSL Vol Org	
03017		40 ml	none	HSL Vol Org	
03017		500 ml	H_2SO_4	Phenol [illegible]	
03017		500 ml	NaOH	Cyanide	
03017		1 liter	none	Cr 6	
03017		1 liter	HNO_3	Tot Metals	
03017		1 liter	HNO_3	Metals	
[illegible]		1.5 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY

Received By _____ Date/Time _____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 00095
C/C Control No. 007416

PROJECT NAME: BCRA GW Samples
PROJECT NUMBER: 6027.9.8
PROJECT MANAGER: B. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/02/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: Dr. Howard
SEND LAB REPORT TO: S. Goldberg / B. Wilde, 10845 Hamilton Cleves, Ross, OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shanon Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3180

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03016	GW	40 ml	none	HSL - Vol. Org.	
03016		40 ml	none	HSL - Vol. Org.	
03016		40 ml	none	HSL - Vol. Org.	
03016		500 ml	H_2SO_4	Phenol / Nitrate	
03016		500 ml	NaOH	Cyanide	
03016		1 liter	none	Cr^{+6}	
03016		1 gallon	HNO_3	Rad scan	
03016		1 liter	HNO_3	Metals	
03016		125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY

Date/Time _____

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 06094
C/C Control No. 00745

PROJECT NAME: RCRA GW Samples
PROJECT NUMBER: 602T9.8
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/02/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: S. Goldberg / R. Wilde
10845 Hamilton-Cleves
Box Off 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shanon Goldberg
PROJECT CONTACT PHONE NO.: (513) 238-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03015	GW	40 ml	none	HSL-Vol. Org.	
03015		40 ml	none	HSL-Vol. Org.	
03015		40 ml	none	HSL-Vol. Org.	
03015		500 ml	H_2SO_4	Phenol/Nitrite	
03015		500 ml	NaOH	Cyanide	
03015		4 Liter	none	Cr^{+6}	
03015		1 gallon	HNO_3	Rad scan	
03015		1 liter	HNO_3	Metals	
03015		125 ml	none	Coliform	
03021	Trip Blank	40 ml	none	Trip blank	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By _____ Date/Time _____

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 01 03
C/C Control No. 007414

PROJECT NAME: BRBA GW Sampling
PROJECT NUMBER: 602T 9.8
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/02/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: S. Goldberg / B. Wilde
10845 Hamilton Cleves
Ross OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shanon Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03014	GW	40 ml	none	HSL-Vol. Org.	
03014		40 ml	none	HSL-Vol. Org.	
03014		40 ml	none	HSL-Vol. Org.	
03014		500 ml	H_2SO_4	Phenol/Nitrated	
03014		500 ml	NaOH	Cyanide	
03014		4 Liter	none	Cr^{+6}	
03014		1 gallon	HNO_3	Rad scan	
03014		1 Liter	HNO_3	Metals	
03014		125 ml	none	Coliform	
03019	Spiked ampules	ampules	NA	follow included instructions	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0002
C/C Control No. 00743

PROJECT NAME: BCBA Groundwater Sample
PROJECT NUMBER: 602T9.8
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/01/87
LAB DESTINATION: Howard Lab.
LABORATORY CONTACT: Dr. Howard
SEND LAB REPORT TO: S. Goldberg / R. Wilde, 10845 Hamilton-Cleves, Ross OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shanon Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03012	GW	40 ml	None	HSL - Vol. Org.	
03012		40 ml	none	HSL - Vol. Org.	
03012		40 ml	none	HSL - Vol. Org.	
03012		500 ml	H_2SO_4	Phenols/Nitrate	
03012		500 ml	NaOH	Cyanide	
03012		1 Liter	none	Cr^{+6}	
03012		1 gallon	HNO_3	Bad scan	
03012		1 liter	HNO_3	Metals	
03012		125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Bad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Date/Time ____

0c .91

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No.
C/C Control No. 00142

PROJECT NAME: PCBA Ground Water Sample
PROJECT NUMBER: 602 T9.8
PROJECT MANAGER: B. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/01/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: B. Goldberg / B. Wilde, 10845 Hamilton Cleves, Rose, OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: S. Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3180

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03011	GW	40 ml	none	HSL - Vol. Org.	
03011		40 ml	none	HSL - Vol. Org	
03011		40 ml	none	HSL - Vol. Org	
03011		500 ml	H_2SO_4	Phenol/Nitrate	
03011		500 ml	NaOH	Cyanide	
03011		1 liter	none	Cr^{+6}	
03011		1 gallon	HNO_3	Rad scan	
03011		1 liter	HNO_3	Metals	
03011		125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY

Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0L..90
C/C Control No. 007411

PROJECT NAME: RCRA Groundwater Sample
PROJECT NUMBER: 60237.8
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/01/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: G. Howard
SEND LAB REPORT TO: S. Goldberg / R. Wilde, 10845 Hamilton Cleves Rd, OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shanon Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03010	GW	40 ml	none	HSL - Vol. Org.	
03010		40 ml	none	HSL - Vol. Org.	
03010		40 ml	none	HSL - Vol. Org.	
03010		500 ml	H_2SO_4	Phenol/Nitrate	
03010		500 ml	NaOH	Cyanide	
03010		4 liter	none	Cr^{+6}	
03010		1 gallon	HNO_3	Rad scan	
03010		1 liter	HNO_3	Metals	
03010		125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By _____ Date/Time _____

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 01 39
C/C Control No. 107410

PROJECT NAME: BCPA Groundwater Samples
PROJECT NUMBER: 6023T9.8
PROJECT MANAGER: B. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/01/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: G. Howard
SEND LAB REPORT TO: S. Goldberg / B. Wilde
10845 Hamilton-Cleves
Ross OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shannon Goldberg
PROJECT CONTACT PHONE NO.: (513) 648-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03009	GW	40 ml	none	HSL - Volatile Organics	
03009	GW	40 ml	none	HSL - Volatile Organics	
03009	GW	40 ml	none	HSL - Volatile Organics	
03009	GW	500 ml	H_2SO_4	Phenols & Nitrates	
03009	GW	500 ml	NaOH	Cyanide	
03009	GW	4 liter	none	Cr^{+6}	
03009	GW	1 gallon	HNO_3	Rad scan	
03009	GW	1 liter	HNO_3	Metals	
03009	GW	125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Bad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0038
C/C Control No. 00139

PROJECT NAME: RCRA Groundwater Sampling
PROJECT NUMBER: 602T9.8
PROJECT MANAGER: R. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/01/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: G. Howard
SEND LAB REPORT TO: S. Goldberg / R. Wilde, 10845 Hamilton Cleves, Ross OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Sharon Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03008	GW	40 ml	none	HSL - Volatile Organics	
03008	GW	40 ml	none	HSL - Volatile Organics	
03008	GW	40 ml	none	HSL - Volatile Organics	
03008	GW	500 ml	H_2SO_4	Phenols/Nitrates	
03008	GW	500 ml	NaOH	Cyanide	
03008	GW	4 Liter	none	Cr^{+6}	
03008	GW	1 gallon	HNO_3	Rad scan	
03008	GW	1 liter	HNO_3	Metals	
03008	GW	125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0..87

C/C Control No. 007337

PROJECT NAME: BCBA Groundwater Sampling

PROJECT NUMBER: 602T9.8

PROJECT MANAGER: B. Wilde

BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/01/87

LAB DESTINATION: Howard Labs

LABORATORY CONTACT: J. Howard

SEND LAB REPORT TO: S. Goldberg/B. Wilde, 10845 Hamilton-Cleves, Ross, OH 45061

DATE REPORT REQUIRED:

PROJECT CONTACT: S. Goldberg

PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03006	GW	40 ml	none	HSL Volatile Organics	
03006	GW	40 ml	none	HSL Volatile Organics	
03006	GW	40 ml	none	HSL Volatile Organics	
03006	GW	500 ml	H_2SO_4	Phenol/Nitrates	
03006	GW	500 ml	NaOH	Cyanide	
03006	GW	4 liter	none	Cr+6	
03006	GW	1 gallon	HNO_3	Bad scan	
03006	GW	1 liter	HNO_3	Metals	
03006	GW	1 liter	none	Coliform	
03006	GW	125 ml			

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other Bad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY

Received By _____ Date/Time _____

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0.086
C/C Control No. 00036

PROJECT NAME: RCRA Groundwater sampling
PROJECT NUMBER: 602 T 9.8
PROJECT MANAGER: Dick Wilde
BILL TO: ~~ASSE~~ MLH ~~10845 Hamilton Cleves Ross, OHIO 45061~~

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 12/01/87
LAB DESTINATION: Howard LABS
LABORATORY CONTACT: JoAnn Howard
SEND LAB REPORT TO: Shanon D Goldberg/Dr. Holt, 10845 Hamilton Cleves, Ross, OHIO 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Shanon D Goldberg
PROJECT CONTACT PHONE NO.: 513-738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03005	GW	40 ml	none	HSL Volatile Organics	
03005	GW	40 ml	none	HSL Volatile Organics	
03005	GW	40 ml	none	HSL Volatile Organics	
03005	GW	500 ml	H_2SO_4	Phenols/Nitrates	
03005	GW	500 ml	NaOH	Cyanide	
03005	GW	4 liter	none	Cr^{+6}	
03005	GW	1 gallon	HNO_3	Rad scan	
03005	GW	1 liter	HNO_3	Metals	
03005	GW	125 ml	none	Cellform	
03013	~~GW~~ Trip DI	40 ml	none	Trip blank	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal X Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Radioactivity (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab X

FOR LAB USE ONLY Received By ____ Date/Time ____

FERMALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0050
C/C Control No. 00735

PROJECT NAME: FMPC
PROJECT NUMBER: 602 T 9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 11/30/07
LAB DESTINATION: Howard Lab
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: R.T. Wilde
10845 Hamilton Ave.
Rose OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Sharon D. Guldberg
PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03004	GW	40 ml	none	1151 Volatile Organics	
03004	GW	40 ml	none	1151 Volatile Organics	
03004	GW	40 ml	none	1151 Volatile Organics	
03004	GW	500 ml	H_2SO_4	Phenols/Nitrates	
03004	GW	500 ml	NaOH	Cyanide	
03004	GW	1 liter	none	Cr+6 1151 semi Volatile Organics	
03004	GW	1 gallon	HNO_3	Rad Scan	
03004	GW	1 liter	HNO_3	Metals	
03004	GW	125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY

Received By ____ Date/Time ____

FER..ALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. [illegible]
C/C Control No. 00434

PROJECT NAME: FMPC
PROJECT NUMBER: 602 T 9.8
PROJECT MANAGER: R.T. Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 11/30/87
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: R.T. Wilde
10845 Hamilton-Cleves
Ross, OH 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: Sharon D. Goldberg
PROJECT CONTACT PHONE NO.: (513) 738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03003	GW	40 ml	None	HSL Volatile Organic	
03003	GW	40 ml	None	HSL Volatile Organic	
03003	GW	40 ml	None	HSL Volatile Organic	
03003	GW	500 ml	H_2SO_4	Phenols/Nitrates	
03003	GW	500 ml	NaOH	Cyanide	
03003	GW	1 Liter	None	Cr 6+, HSL semivolatile Organic	
03003	GW	1 gallon	HNO_3	Rad scan	
03003	GW	1 liter	HNO_3	Metals	
03003	GW	125 ml	None	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other Rad (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY

Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No.
C/C Control No. 00733

PROJECT NAME: FMPC
PROJECT NUMBER: 602 T9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED:
LAB DESTINATION: Howard Labs
LABORATORY CONTACT: T. Howard
SEND LAB REPORT TO: Dick Wilde, 10845 Hamilton Cleves, Ross Ohio 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: SHANON D Galloway
PROJECT CONTACT PHONE NO.: 513-738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03002	GW	40ml	none	HSL Volatile Organic	
03002	GW	40ml	none	HSL Volatile Organics	
03002	GW	40ml	none	HSL Volatile Organics	
03002	GW	500ml	H_2SO_4	Phenols / Nitrates	
03002	GW	500ml	NaOH	Cyanide	
03002	GW	4 liter	None	Cr^{+6}	
03002	GW	1 gal	HNO_3	Metals	
03002	GW	1 liter	HNO_3	Rad scan	
03002	GW	125ml	None	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other RAD. (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

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FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No.
C/C Control No. 00732

PROJECT NAME: FMPC
PROJECT NUMBER: 602 T 9.8
PROJECT MANAGER: Dick Wilde
BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 11/20/87
LAB DESTINATION: Howard LABS
LABORATORY CONTACT: J. Howard
SEND LAB REPORT TO: Dick Wilde, 10845 Hamilton Cleves, Ross, Ohio 45061

DATE REPORT REQUIRED:
PROJECT CONTACT: SHANNON D. Gehberg
PROJECT CONTACT PHONE NO.: 513-738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03001	GW	40 ml	none	HSL Volatile Organics	
03001	GW	40 ml	none	HSL Volatile Organics	
03001	GW	40 ml	none	HSL Volatile Organics	
03001	GW	500 ml	H_2SO_4	Phenols/Nitrates	
03001	GW	500 ml	NaOH	Cyanide	
03001	GW	4 liter	none	Cr^{+6}	
03001	GW	1 liter	HNO_3	Metals	
03001	GW	1 gallon	HNO_3	Rad scan	
03001	GW	125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard ____ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other RAD (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY
Received By ____ Date/Time ____

FERNALD RI/FS

REQUEST FOR ANALYSIS

R/A Control No. 0 216

C/C Control No. 00721

PROJECT NAME: FMPC

PROJECT NUMBER: 602 T 9.8

PROJECT MANAGER: Dick Wilde

BILL TO:

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 4/20/97

LAB DESTINATION: Howard Labs

LABORATORY CONTACT: J Howard

SEND LAB REPORT TO: Dick Wilde, 10845 Hamilton Cleves Pike, Ross, Ohio 45061

DATE REPORT REQUIRED:

PROJECT CONTACT: Shanon D Galloway

PROJECT CONTACT PHONE NO.: 513-738-3100

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
03000	GW	40 ml	none	HSL Volatile organic	
03000	GW	40 ml	none	HSL Volatile Organic	
03000	GW	40 ml	none	HSL Volatile Organic	
03000	GW	500 ml	H_2SO_4	Phenols/Nitrate	
03000	GW	500 ml	NaOH	Cyanide	
03000	GW	4 liter	none	Cr+6, HSL Organic semivol	
03000	GW	1 gallon	HNO_3	Radioactive scan	
03000	GW	1 liter	HNO_3	Metals	
03000	GW	125 ml	none	Coliform	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other Radiation (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY

Received By _____ Date/Time _____

WHITE - Original, to accompany samples
YELLOW - Field copy

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Appendix F

Water Quality Data From Previous Sampling

Results of Phase 1-Round 1 Sampling

Table 3-1

GROUND-WATER SAMPLING RESULTS - FMPC - Pit #4
(All results in ppm except as noted)

	MW-12	MW-TP19	MW-TP21	MW-TP22	Standards Primary(6)	Secondary (7)	Recommended (12)
Chloride	109	459	58	118	--	250	--
Iron	18.1	4.57	58.4	2.26	--	0.3	--
Manganese	0.216	2.75	3.77	2.01	--	0.05	--
Phenols	0.019	0.049	<0.005	<0.005	--	--	0.001
Sodium	268.0	34.6	40.5	19.3	--	--	--
Sulfate	72	575	30	850	--	250	--
Silver	<0.030	<0.030	<0.030	<0.030	0.05	--	--
Arsenic	<0.0025	0.008	0.03	0.006	0.05	--	--
Barium	<0.200	0.308	0.863	0.363	1.0	--	--
Calcium	53	372	415	154	--	--	--
Cadmium	<0.002	<0.002	<0.002	<0.002	0.010	--	--
Cyanide	<0.005	<0.005	<0.005	<0.005	--	--	0.05
Chromium							
- Total	0.055	0.049	0.08	<0.005	0.05	--	--
- Hexavalent	<0.01	<0.01	<0.01	<0.01	--	--	--
Copper	<0.025	<0.025	0.074	<0.025	--	1.0	--
Fluoride	2.00	0.33	0.52	1.80	1.4-2.4	--	--
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	0.002	--	--
Potassium	NA	NA	NA	NA	--	--	--
Magnesium	12.3	12.8	18.3	7.9	--	--	--
Nickel	0.06	0.026	0.137	0.015	--	--	--
Nitrates	<0.02	<0.02	<0.02	0.06	10.0	--	--
Lead	0.320	<0.005	0.012	<0.005	0.05	--	--
Phosphorus, total	0.26	0.14	0.21	1.15	--	--	--
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	0.01	--	--
Zinc	0.081	0.029	0.240	<0.025	--	5.0	--
T.D.S.	660	2540	936	2240	--	500	--
C.O.D.	17.0	12.0	14.	44.	--	--	--
pH-lab (1)(2)	7.48	6.63	5.99	6.75	--	6.5-8.5	--
Conductivity-lab (1)(3)	880	2350	1000	1950	--	--	--
T.O.C.(1)	<1.00	4.00	4.00	6.5	--	--	--
T.O.X.(1)(4)	<10.00	80.25	<10.00	<10.00	--	--	--

Results of Phase 1-Round 1 Sampling

Table 3-1 (Cont'd)

	MW-12	MW-TP19	MW-TP21	MW-TP22	Standards Primary (6)	Restricted (9)	Unrestricted (9)
Gross Beta (5)	30	94	250 (8)	1340 (8)	30	--	--
Gross Alpha (5)	<10	43	230 (8)	1370 (8)	15	--	--
Potassium 40 (5)	<10	<10	15	75	--	90,000	3000
Uranium Natural(5)	<10	<10	<10	<50	--	20,000	600
Radium-226 (5)	<10	<10	<10	<50	5 (10)	400	30
Radium-228 (5)	<5	<5	12	75	5 (10)	800	30
Technicium-99 (5)	<5	<5	<5	<5	--	10,000,000	300,000
Thorium-228 (5)	<5	<5	<5	<5	--	200,000	7000
Thorium-230 (5)	<5	<5	<5	<5	--	60,000	2000
Thorium-232 (5)	<5	<5	<5	88	--	60,000	2000
Cesium-137 (5)	<5	22	48	115	--	400,000	20000
Strontium-90 (5)	<5	<5	14	28	8	10,000	300
Ruthenium-106 (5)	<10	<10	15	80	--	400,000	10000
Neptunium-237 (5)	<10	<10	14	50	--	90,000	3000
Plutonium-238 (5)	<10	<10	<40	<100	--	100,000	5000
Plutonium-239 (5)	<10	<10	<40	<100	--	100,000	5000
Plutonium-240 (5)	<10	<10	<40	<100	--	100,000	5000
Coliform, Total (11)	<20	<20	<20	<20	1	--	--
Lindane (4)	<0.2	<0.2	<0.2	<0.2	4	--	--
Endrin (4)	<0.2	<0.2	<0.2	<0.2	0.2	--	--
Methoxychlor(4)	<0.2	<0.2	<0.2	<0.2	100	--	--
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	5	--	--
2,4-D (4)	<0.4	<0.4	<0.4	<0.4	10	--	--
2,4,5-TP, Silvex (4)	<0.2	<0.2	<0.2	<0.2	10	--	--
Benzene (4)	14.8	ND	ND	ND	--	--	--
Xylenes (4)	11.8	ND	ND	ND	--	--	--
1,1 Dichloro-ethane (4)	ND	3.4	ND	ND	--	--	--
Methylene chloride (4)	ND	Trace	ND	ND	--	--	--

NOTES

ND Not detected

NA Not Analyzed due to laboratory error

(1) Average of four tests

(2) pH results in standard units

(3) Conductivity results in umhos/cm

(4) Concentrations reported in ppb

(5) Results in pCi/l

(6) Taken from 40 CFR Part 141 National Interim Primary Drinking Water Regulations -Subpart B - Maximum Contaminant Levels, July 1, 1984.

(7) Taken from 40 CFR Part 143 National Secondary Drinking Water Regulations -Section 143.3 - Secondary Maximum Contaminant Levels.

(8) High counts did not yield any individual elements using a 4096 channel analyzer. These levels are due to solids only in the samples

(9) Taken from DOE Order 5480.1A: Limit for Release to Restricted and Unrestricted Areas.

(10) Standard is for Radium -226 Plus Radium -228.

(11) Reported in per 100 ml.

(12) Taken from World Health Organization, European Standards, 1970.

Results of Phase 2-Round 1 Sampling

Table 3-1

GROUND-WATER SAMPLING RESULTS - FMPC - Sand and Gravel Aquifer
(All results in ppm except as noted)

	SW-1	MW-1a	MW-1D	Standards Primary (6)	Standards Secondary (7)	Standards Recommended (8)
Chloride	30	25	76	---	250	---
Iron	<0.05	51.8	18.9	---	0.3	---
Manganese	0.125	0.649	5.5	---	0.05	---
Phenols	<0.005	0.015	<0.005	---	---	0.001
Sodium	15	29.7	162	---	---	---
Sulfate	50	40	470	---	250	---
Silver	<0.03	<0.03	<0.03	0.05	---	---
Arsenic	<0.005	<0.005	<0.005	0.05	---	---
Barium	<0.2	<0.2	<0.2	1.0	---	---
Calcium	94.4	80.7	1,232	---	---	---
Cadmium	<0.002	<0.002	0.003	0.010	---	---
Cyanide	<0.005	<0.005	0.005	---	---	0.05
Chromium						
- Total	<0.005	0.019	0.014	0.05	---	---
- Hexavalent	<0.005	0.01	0.01	---	---	---
Copper	<0.025	0.146	<0.025	---	1.0	---
Fluoride	0.15	0.12	0.05	1.4-2.4	---	---
Mercury	<0.0002	<0.0002	<0.0002	0.002	---	---
Potassium	2.4	1.5	20.2	---	---	---
Magnesium	27.2	24.2	90	---	---	---
Nickel	<0.005	0.012	0.039	---	---	---
Nitrates	2.05	<0.02	155.6	10.0	---	---
Lead	<0.005	0.029	<0.005	0.05	---	---
Phosphorus, total	<0.02	0.45	0.05	---	---	---

Results of Phase 2-Round 1 Sampling
Table 3-1 (Cont'd)

GROUND-WATER SAMPLING RESULTS - FMPC - Sand and Gravel Aquifer
(All results in ppm except as noted)

	SW-1	MW-1d	MW-10	Standards: Primary (6)	Standards: Secondary (7)	Standards: Recommended (8)
Selenium	<0.0025	<0.0025	<0.0025	0.01	---	---
Zinc	0.025	0.141	0.056	---	5.0	---
T.D.S.	504	444	2,540	---	500	---
C.O.D.	<10	84	20	---	---	---
pH-lab (1)(2)	7.78	7.26	7.1	---	5.5-8.5	---
Conductivity-lab (1)(3)	520	400	2,400	---	---	---
T.O.C. (1)	2.	5	1	---	---	---
T.O.X. (1)(4)	NA	NA	NA	---	---	---

Results of Phase 2-Round 1 Sampling

Table 3-1 (Cont'd)

	SW-1	MW-1d	MW-10	Standards Primary (6)	Restricted (9)	Unrestricted (9)
Gross Beta (5)	<5	<10	<10	30 (12)	---	---
Gross Alpha (5)	<10	12	10	15	---	---
Potassium 40 (5)	<10	<10	<10	---	90,000	3000
Uranium Natural (5)	<10	<10	<10	---	20,000	600
Radium-226 (5)	<10	<10	<10	5 (10)	400	30
Radium-228 (5)	<5	<5	<5	5 (10)	800	30
Technicium-99 (5)	<5	<5	<5	---	10,000,000	300,000
Thorium-228 (5)	<5	<5	<5	---	200,000	7000
Thorium-230 (5)	<5	<5	<5	---	50,000	2000
Thorium-232 (5)	<5	<5	<5	---	50,000	2000
Cesium-137 (5)	<5	<5	12	---	400,000	20,000
Strontium-90 (5)	<5	<5	<5	8	10,000	300
Ruthenium-106 (5)	<10	<10	<10	---	400,000	10,000
Neptunium-237 (5)	<10	<10	<10	---	90,000	3000
Plutonium-238 (5)	<10	<10	<10	---	100,000	5000
Plutonium-239 (5)	<10	<10	<10	---	100,000	5000
Plutonium-240 (5)	<10	<10	<10	---	100,000	5000
Coliform, Total (10)	18	190,000	140,000	1	---	---
Lindane (4)	NA	NA	NA	4	---	---
Endrin (4)	NA	NA	NA	0.2	---	---
Methoxychlor (4)	NA	NA	NA	100	---	---
Toxaphene (4	NA	NA	NA	5	---	---
2,4-D (4)	NA	NA	NA	10	---	---
2,4,5-TP, Silvex (4)	NA	NA	NA	10	---	---

Results of Phase 2-Round 1 Sampling

Table 3-1 (Cont'd)

	MW-14d	MW-14s	MW-18s	MW-19s	Standards Primary (6)	Secondary (7)	Recommended (8)
Chloride	15	19	7	49	---	250	---
Iron	0.123	37.2	18.3	5.33	---	0.3	---
Manganese	<0.02	0.451	0.818	0.318	---	0.05	---
Phenols	<0.005	0.015	<0.005	0.006	---	---	0.001
Sodium	12.7	10.4	8.5	180	---	---	---
Sulfate	70	70	50	130	---	250	---
Silver	<0.03	<0.03	<0.03	<0.03	0.05	---	---
Arsenic	<0.005	<0.025	<0.01	<0.005	0.05	---	---
Barium	<0.2	<0.2	<0.2	<0.2	1.0	---	---
Calcium	89	241	165	361	---	---	---
Cadmium	<0.002	0.005	0.003	0.002	0.010	---	---
Cyanide	<0.005	<0.005	<0.005	0.013	---	---	0.05
Chromium							
- Total	<0.005	0.159	0.127	0.133	0.05	---	---
- Hexavalent	<0.005	0.03	0.01	<0.01	---	---	---
Copper	<0.025	0.269	0.179	0.109	---	1.0	---
Fluoride	0.13	1.1	0.7	1.06	1.4-2.4	---	---
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	0.002	---	---
Potassium	1.9	5	5.22	5.7	---	---	---
Magnesium	19	22.3	50	93	---	---	---
Nickel	0.01	0.027	0.022	0.008	---	---	---
Nitrates	1.2	0.89	0.72	25.04	10.0	---	---
Lead	0.011	0.1	0.047	0.072	0.05	---	---
Phosphorus: total	0.06	1.04	0.44	0.13	---	---	---
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	0.01	---	---
Zinc	<0.025	0.166	0.109	0.281	---	5.0	---
T.D.S.	352	436	396	888	---	500	---
C.O.D.	10	32	52	18	---	---	---

Results of Phase 2 -Round 1 Sampling

Table 3-1 (Cont'd)

	MW-14d	MW-14s	MW-18s	MW-19s	Standards Primary (6)	Secondary (7)	Recommended (8)
pH-lab (1)(2)	6.97	7.1	7.1	7.06	---	5.5-8.5	---
Conductivity-lab (1)(3)	400	420	430	1,000	---	---	---
T.O.C. (1)	4.5	4	3.25	3	---	---	---
T.O.X. (1)(4)	NA	NA	NA	NA	---	---	---

Results of Phase 2 - Round 1 Sampling

Table 3-1 (Cont'd)

	MW-14c	MW-14s	MW-18s	MW-19s	Standards: Primary (6)	Standards: Restricted (9)	Standards: Unrestricted (9)
Gross Beta (5)	<5	46	44	1,250	30 (12)	---	---
Gross Alpha (5)	<10	47	21	36	15	---	---
Potassium 40 (5)	<10	<10	<10	40	---	90,000	3000
Uranium Natural (5)	<10	<10	<10	<10	---	20,000	600
Radium-226 (5)	<10	<10	<10	<10	5 (10)	400	30
Radium-228 (5)	<5	<5	<5	70	5 (10)	800	30
Technicium-99 (5)	<5	<5	<5	<5	---	10,000,000	300,000
Thorium-228 (5)	<5	<5	<5	<5	---	200,000	7000
Thorium-230 (5)	<5	<5	<5	<5	---	50,000	2000
Thorium-232 (5)	<5	<5	<5	80	---	50,000	2000
Cesium-137 (5)	<5	12	12	110	---	400,000	20,000
Strontium-90 (5)	<5	<5	<5	24	8	10,000	300
Ruthenium-106 (5)	<10	<10	<10	75	---	400,000	10,000
Neptunium-237 (5)	<10	<10	<10	<10	---	90,000	3000
Plutonium-238 (5)	<10	<10	<10	<100	---	100,000	5000
Plutonium-239 (5)	<10	<10	<10	<100	---	100,000	5000
Plutonium-240 (5)	<10	<10	<10	<100	---	100,000	5000
Coliform, Total (10)	110	2,200	3,500	197	1	---	---
Lindane (4)	NA	NA	NA	NA	4	---	---
Endrin (4)	NA	NA	NA	NA	0.2	---	---
Methoxychlor (4)	NA	NA	NA	NA	100	---	---
Toxaphene (4)	NA	NA	NA	NA	5	---	---
2,4-D (4)	NA	NA	NA	NA	10	---	---
2,4,5-TP, Silvex (4)	NA	NA	NA	NA	10	---	---
1,1,1 Trichloroethane	ND	ND	ND	8.6	---	---	---

RESULTS OF PHASE 3 ROUND 1
Table 3.1

GROUND WATER SAMPLING RESULTS - FMPC
(All results in ppm except as noted)

	1S	3	4	5	8S	Standards: Primary (6)	Standards: Secondary (7)	Standards: Recommended (8)
Chloride	18	22	32	17	19	---	250	---
Iron	0.628	0.638	0.218	1.82	1.6	---	0.3	---
Manganese	0.511	0.426	<0.02	0.532	0.257	---	0.05	---
Phenols	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	0.001
Sodium	10	9.5	12.6	12.8	9.5	---	---	---
Sulfate	74	88	54.0	82	78	---	250	---
Silver	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	---	---
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	0.05	---	---
Barium	<0.2	<0.2	<0.2	<0.2	<0.2	1.0	---	---
Calcium	108	102	101	115	104	---	---	---
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	0.010	---	---
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	0.05
Chromium								
- Total	<0.005	<0.005	<0.005	<0.005	<0.005	0.05	---	---
- Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---
Copper	<0.025	<0.025	<0.025	<0.025	<0.025	---	1.0	---
Fluoride	0.41	0.25	0.29	0.24	0.14	1.4-2.4	---	---
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.002	---	---
Potassium	2.26	2.40	2.79	2.21	2.34	---	---	---
Magnesium	23.9	23.3	22.2	25.5	22.5	---	---	---
Nickel	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---
Nitrates	0.04	<0.02	1.43	0.09	<0.02	10.0	---	---
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	0.05	---	---
Phosphorus, total	<0.04	<0.04	<0.04	<0.04	<0.04	---	---	---

RESULTS OF PHASE 3 ROUND 1
Table 3.1 (Cont'd)

GROUND WATER SAMPLING RESULTS - FMPC
(All results in ppm except as noted)

	1S	3	4	5	8S	Standards: Primary (6)	Secondary (7)	Recommended (8)
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	0.01	---	---
Zinc	<0.025	<0.025	<0.025	<0.025	<0.025	---	5.0	---
T.D.S.	415	369	369	396	381	---	500	---
C.O.D.	<10	<10	<10	<10	<10	---	---	---
pH-lab (1) (2)	7.20	7.32	7.36	7.36	7.34	---	6.5-8.5	---
Conductivity-lab (1) (3)	600	590	580	620	588	---	---	---
T.O.C. (1)	1	1	1	<1	<1	---	---	---
T.O.X. (1) (4)	28.5	11.8	<10	<10	<10	---	---	---
Coliform (10)	<2	<2	380	17	36	1	---	---
Lindane (4)	<0.1	<0.1	<0.1	<0.1	<0.1	4	---	---
Endrin (4)	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	---	---
Methoxychlor (4)	<0.1	<0.1	<0.1	<0.1	<0.1	100	---	---
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	5	---	---
2,4-D (4)	<0.4	<0.4	<0.4	<0.4	<0.4	10	---	---
2,4,5-TP, Silvex (4)	<0.2	<0.2	<0.2	<0.2	<0.2	10	---	---
VOC's (4)	NA	NA	ND	NA	ND	---	---	---
Gross Alpha (5)	<15.0	<15.0	<15.0	<15.0	<15.0	15	---	---
Gross Beta (5)	15	17	17	12	7	30 (11)	---	---
Radium, Total (5)	<5.0	<5.0	<5.0	<5.0	<5.0	5 (9)	---	---
Radionuclide Scan (5) (12)	<5.0	<5.0	<5.0	<5.0	<5.0	---	---	---

RESULTS OF PHASE 3 ROUND 1
Table 3.1 (Cont'd)

GROUND WATER SAMPLING RESULTS - FMPC
(All results in ppm except as noted)

	8D	9	10	11	12 (8/1/85)	12 (1/8/86)	13S	13D	15S	16S	16D
Chloride	13	22	76	21	109	105	25	61	23	19	20
Iron	2.62	0.072	18.9	2.93	18.1	30.8	2.71	6.93	0.078	<0.05	0.123
Manganese	0.365	0.071	5.5	0.193	0.216	0.592	0.205	0.349	<0.020	0.025	<0.02
Phenols	<0.005	0.007	<0.005	<0.007	0.019	0.021	<0.005	0.012	0.007	0.009	0.009
Sodium	11.9	11.0	162	12.9	268.0	224	14.7	49	11.9	15.6	11.1
Sulfate	10	76	470	88	72	64	92	300	49	50	60
Silver	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.0025	0.006	<0.005	<0.005	<0.005	<0.005	<0.005
Barium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Calcium	94.7	96.6	1,232	123	53	72.1	137	163	71.9	88.5	81.8
Cadmium	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium											
- Total	<0.005	<0.005	0.014	<0.005	0.055	0.058	<0.005	<0.005	<0.005	<0.005	<0.005
- Hexavalent	<0.005	<0.005	0.01	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025	<0.025	0.055	<0.025	<0.025	<0.025	<0.025	<0.025
Fluoride	0.24	0.21	0.05	0.21	2.00	1.21	0.23	0.31	0.43	0.22	0.16
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	1.04	2.02	20.2	0.984	NA	12.8	2.05	5.11	2.37	2.17	1.85
Magnesium	21.1	22.1	90	28.3	12.3	18.3	28.6	44	19.5	23.4	20.7
Nickel	<0.005	<0.005	0.039	<0.005	0.06	0.048	<0.005	<0.0005	<0.0005	<0.0005	<0.0005
Nitrates	<0.02	3.52	155.6	<0.01	<0.02	<0.02	<0.02	<0.02	3.3	2.52	2.36
Lead	<0.005	<0.005	<0.005	<0.005	0.320	0.04	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus, total	<0.04	<0.04	0.05	<0.04	0.26	0.14	<0.04	<0.04	0.12	<0.04	<0.04

RESULTS OF PHASE 3 ROUND 1
Table 3.1 (Cont'd)

GROUND-WATER SAMPLING RESULTS - FMPC
(All results in ppm except as noted)

	8D	9	10	11	12 (8/1/85)	12 (1/8/86)	13S	13D	15S	16S	16D
Selenium	<0.005	<0.005	<0.0025	<0.005	<0.0025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	<0.025	<0.025	0.056	<0.025	0.081	0.135	<0.025	<0.025	<0.025	<0.025	<0.025
T.D.S.	288	377	2,540	423	660	580	300	956	376	364	356
C.O.D.	<10	<10	20	<10	17.0	<10	<10	13	17	11	21
pH-lab (1) (2)	7.40	7.46	7.1	7.42	7.48	7.79	7.15	6.97	7.54	7.50	7.54
Conductivity-lab (1) (3)	530	540	2,400	650	880	998	695	1,250	498	560	520
T.O.C. (1)	<1	<1	4	1	<1.00	<1	<1	1	<1	1	<1
T.O.X. (1) (4)	<10	<10	NA	<10	<10.00	64	44.7	79	21.8	16.9	28.5
Coliform (10)	<4	24	140,000	<4	<20	<4	<4	<2	<2	<2	<2
Lindane (4)	<0.1	<0.1	NA	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin (4)	<0.1	<0.1	NA	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor (4)	<0.1	<0.1	NA	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toxaphene (4)	<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<0.4	<0.4	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,4,5-TP, Silvex (4)	<0.2	<0.2	NA	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
VOC's (4)	ND	ND	ND	ND	---	ND	ND	ND	ND	ND	ND
Benzene (4)	ND	ND	ND	ND	14.8	ND	ND	ND	ND	ND	ND
Xylene (4)	ND	ND	ND	ND	11.8	ND	ND	ND	ND	ND	ND
Gross Alpha (5)	<15.0	<15.0	<15.0	<15.0	---	18	<15.0	<15.0	<15.0	<15.0	<15.0
Gross Beta (5)	12	11	---	9	---	78	15	<5.0	<5.0	<5.0	<5.0
Radium, Total (5)	<5.0	<5.0	---	<5.0	---	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Radionuclide Scan (5) (12)	<5.0	<5.0	---	<5.0	---	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

RESULTS OF PHASE 3 ROUND 1
Table 3.1 (Cont'd)

GROUND-WATER SAMPLING RESULTS - FMPC
(All results in ppm except as noted)

	17S	17D	18D	19D	20S	20D	TP-20	21S	22S	OS-1A
Chloride	24	19	4	57	21	20	3	37	62	34
Iron	0.101	1.29	8.94	<0.05	0.102	1.12	5.43	0.262	0.379	0.338
Manganese	0.234	0.36	0.104	3.73	0.043	0.235	1.04	0.052	0.061	0.054
Phenols	0.006	0.011	0.006	0.011	0.006	<0.005	0.007	0.015	0.006	0.012
Sodium	8.75	10.2	4.59	86.8	11.6	14.1	4.1	28.3	31.8	33.1
Sulfate	150	72	62	440	78	80	48	84	98	102
Silver	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.011	<0.005	<0.005	<0.005
Barium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Calcium	148	106	102	240	96.6	99	108	148	137	143
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium										
- Total	<0.005	<0.005	<0.005	<0.005	0.017	<0.005	<0.005	<0.005	<0.005	<0.005
- Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Fluoride	0.3	0.12	0.44	0.08	0.15	0.11	0.47	0.21	0.71	0.24
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	1.94	1.9	0.556	8.73	2.46	1.69	1.22	9.35	3.95	32.4
Magnesium	32.1	19.5	35.3	35.5	21.1	23.1	31.7	18	40.3	47
Nickel	<0.005	<0.005	<0.005	<0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrates	0.15	<0.02	<0.02	0.46	5.67	<0.02	<0.02	39.3	42	7.99
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus, total	<0.04	<0.04	0.11	<0.04	<0.04	<0.04	0.44	<0.04	<0.04	0.38

RESULTS OF PHASE 3 ROUND 1
Table 3.1 (Cont'd)

GROUND-WATER SAMPLING RESULTS - FMPC
(All results in ppm except as noted)

	17S	17D	18D	19D	20S	20D	TP-20	21S	22S	US-1A
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.07
T.D.S.	612	612	388	424	436	420	324	712	712	600
C.O.D.	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
pH-lab (1) (2)	7.13	7.31	7.30	6.83	7.50	7.41	7.05	7.33	7.30	7.15
Conductivity-lab (1) (3)	810	553	575	1,600	545	560	570	908	980	1,010
T.O.C. (1)	<1	<1	<1	1	<1	<1	3	1	2	2.5
T.O.X. (1) (4)	<10	<10	<10	<10	36.5	18.9	25.5	<10	29	23.3
Coliform (10)	<2	<2	<4	<4	<2	<2	10	<2	<2	2
Lindane (4)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin (4)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor (4)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,4,5-TP, Silvex (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
VOC's (4)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1 Trichloroethane (4)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gross Alpha (5)	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0
Gross Beta (5)	<5.0	<5.0	<5.0	<15.0	9	<5.0	77	400	78	<5.0
Radium, Total (5)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Radionuclide Scan (5) (12)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

RESULTS OF PHASE 3 ROUND 1
Table 3.1 (Cont'd)

GROUND-WATER SAMPLING RESULTS - FMPC
(All results in ppm except as noted)

	OS1	15D	OS3	OS2	SW2 (8/27/85)	SW2 (1/8/86)	P1	P2	P3	TP19	TP21	TP22
Chloride	19	28	26	29	30	35	36	20	12	459	58	118
Iron	0.05	2.61	1.25	<0.05	<0.05	<0.05	5.31	2.78	2.51	4.57	58.4	2.26
Manganese	<0.02	0.349	0.373	<0.02	0.125	0.154	0.425	0.358	0.418	2.75	3.77	2.01
Phenols	0.008	0.014	0.02	0.011	<0.005	0.009	0.008	0.012	0.018	0.049	<0.005	<0.005
Sodium	11.2	6.8	10.5	11	15	17.4	26.6	11.5	11.0	34.6	40.5	19.3
Sulfate	54	86	58	18	60	96	16	50	42	575	30	850
Silver	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	0.03	0.006
Barium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.308	0.863	0.363
Calcium	67.8	106	85.7	90.6	94.4	93.2	116	84.5	85.3	372	415	154
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium												
- Total	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.049	0.08	<0.005
- Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.01
Copper	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.074	<0.025
Fluoride	0.46	0.13	0.24	0.22	0.15	0.2	0.18	0.19	0.14	0.33	0.52	1.80
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	2.36	1.75	2.2	2.88	2.4	2.35	3.4	1.22	1.62	NA	NA	NA
Magnesium	18.9	27.2	22	24.3	27.2	28.9	33.9	23.6	22.2	12.8	18.3	7.8
Nickel	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.026	0.137	0.015
Nitrates	2.55	<0.02	<0.02	3.64	2.06	2.89	<0.02	<0.02	<0.02	<0.02	<0.02	0.06
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.012	<0.005
Phosphorus, total	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.12	0.12	0.06	0.14	0.21	1.15

RESULTS OF PHASE 3 ROUND 1
Table 3.1 (Cont'd)

GROUND-WATER SAMPLING RESULTS - FMPC
(All results in ppm except as noted)

	OS-1	15-D	OS-2	OS-3	SW-2 (8/27/85)	SW-2 (1/8/86)	P-1	P-2	P-3	TP19	TP-21	TP-22
Selenium	<0.005	<0.005	<0.005	<0.005	<0.0025	<0.005	<0.005	<0.005	<0.005	<0.0025	<0.0025	<0.0025
Zinc	0.109	<0.071	<0.025	0.037	0.025	<0.025	<0.025	<0.025	<0.025	0.029	0.240	<0.025
T.D.S.	304	408	308	376	504	468	420	240	240	2540	936	2240
C.O.D.	<10	<10	<10	<10	<10	<10	<10	<10	10	12.0	14	44
pH-lab (1) (2)	7.48	7.35	7.62	7.39	7.78	7.36	7.45	7.50	7.36	6.63	6.99	6.75
Conductivity-lab (1) (3)	491	638	575	610	520	660	835	555	533	2350	1000	1950
T.O.C. (1)	<1	<1	<1	<1	2	<1	<1	<1	<1	4.00	4.00	6.5
T.O.X. (1) (4)	32	40.8	43.3	49.3	NA	61.5	12.8	10	12.4	80.25	<10.00	<10.00
Coliform	<2	<2	<2	40	18	<2	<2	<2	<2	<20	<20	<20
Lindane (4)	<0.1	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2
Endrin (4)	<0.1	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2
Methoxychlor	<0.1	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4) (9)	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,4,5-TP, Silvex (4) (9)	<0.2	<0.2	<0.2	<0.2	NA	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
VOC's	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1 Dichlorethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.4	ND	ND
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	Trace	ND	ND
Gross Alpha	<15.0	<15.0	20	<15.0	---	<15.0	<15.0	<15.0	<15.0	---	---	---
Gross Beta	28	<5.0	42	<5.0	---	<5.0	<5.0	<5.0	<5.0	---	---	---
Radium, Total	<5.0	<5.0	<5.0	<5.0	---	<5.0	<5.0	<5.0	<5.0	---	---	---
Radionuclide Scan (5) (12)	<5.0	<5.0	<5.0	<5.0	---	<5.0	<5.0	<5.0	<5.0	---	---	---

NOTES

ND Not Detected

NA Not Analyzed

(1) Average of four tests

(2) pH results in standard units

(3) Conductivity results in umhos/cm

(4) Concentrations reported in ppb

(5) Results in pCi/l

(6) Taken from 40 CFR Part 141 National Interim Primary Drinking Water Regulations - Subpart B - Maximum Contaminant Levels, July 1, 1984.

(7) Taken from 40 CFR Part 143 National Secondary Drinking Water Regulations - Section 143.3 - Secondary Maximum contaminant Levels.

(8) High counts did not yield any individual elements using a 4096 channel analyzer. These levels are due to solids only in the samples.

(9) Standard is for Radium -226 Plus Radium -228

(10) Reported in per 100 ml

(11) Maximum Permissible Activity taken from World Health Organization, 1970 European Standards. National Primary Drinking Water Regulation for gross beta is 4 mR/year.

(12) Radionuclide Scan includes analysis for K-40, Umat, Th-228, Th-230, Th-232, Tc-99, Cs-137, Sr-90, Ru-106, Np-237, Pu-238, Pu-239, Pu-240.

RESULTS OF ROUND 2 SAMPLING

3.1 Shallow (Till) Groundwater Sampling Results (FMPC)

(All results in ppm except as noted)

	MW-12	MW-19TP	MW-20TP	MW-21TP	MW-22TP	OS-1A
Chloride	105.0	265.0	5.0	19.0	34.0	35.0
Iron	3.410	2.100	0.360	1.690	15.800	0.083
Manganese	0.050	1.380	1.020	1.920	1.280	<0.020
Phenols	<0.005	<0.005	<0.005	0.006	0.007	0.008
Sodium	210.000	56.100	3.680	11.300	174.000	32.700
Sulfate	8.0	660.0	48.0	260.0	1,100	130.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.005	<0.007	<0.005	0.008	<0.005
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	22.300	310.00	120.000	146.000	458.00	141.000
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	0.008	0.010
Chromium						
-Total	<0.005	<0.005	<0.005	<0.005	0.028	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.010	<0.005
Copper	<0.025	<0.025	<0.025	<0.025	<0.052	<0.025
Fluride	1.09	0.38	0.22	0.52	0.97	0.17
Mercury	0.0009	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	10.600	1.140	1.010	1.390	8.090	34.100
Mangesium	9.200	-107.000	29.000	74.000	176.000	62.000
Nickel	<0.005	<0.005	<0.005	<0.005	0.023	<0.005
Nitrates	<0.02	0.07	<0.02	0.19	10.50	8.96
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus, total	0.06	0.11	0.07	0.08	0.35	0.07

RESULTS OF ROUND 2 SAMPLING

3.1 Shallow (Till) Groundwater Sampling Results (FMPC)

(All results in ppm except as noted)

	MW-12	MW-19TP	MW-20TP	MW-21TP	MW-22TP	US-1A
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.025	<0.025	<0.025	<0.025	0.48	0.051
T.D.S.	660	1,820	376	780	2,550	840
C.O.D.	<10	21	17	12	38	16
pH-lab (1) (2)	7.75	6.72	7.13	7.28	7.07	6.99
Conductivity-lab (1) (3)	1,000	2,000	598	999	2,400	1,100
T.O.C. (1)	<1	4	2	2	5	2
T.O.X. (1) (4)	<10	NA	15.5	NA	30.8	19.5
Coliform (10)	6	<2	29	6	2,600	4,200
Lindane (4)	<0.2	NA	<0.2	NA	<0.2	<0.2
Endrin (4)	<0.2	NA	<0.2	NA	<0.2	<0.2
Methoxychlor (4)	<0.2	NA	<0.2	NA	<0.2	<0.2
Toxaphene (4)	<0.5	NA	<0.5	NA	<0.5	<0.5
2,4-D (4)	<0.2	NA	<0.2	NA	<0.2	<0.2
2,4,5-TP, Silvex (4)	<0.2	NA	<0.2	NA	<0.2	<0.2
VOC's (4)	ND	ND	ND	ND	ND	ND
Gross Alpha (5)	<15	<15	<15	125	37	<15
Gross Beta (5)	5	76.77	<5	335	143	26
Radium, Total (5)	<5	5.84	<5	21.1	<5	<5
Radionuclide Scan (5) (12)	<5	<5	<5	<5	<5	<5
Uranium (13)	0.0001	0.90	0.012	3.20	5.06	0.0013

RESULTS OF ROUND 2 SAMPLING

3.2 Sand and Gravel Aquifer
Groundwater Sampling Results Inside Producation Area (FMPC)
(All results in ppm except as noted)

	MW-1s	MW-1d	MW-3	MW-4	MW-5	MW-8s	MW-8d	MW-10	MW-13s	MW-13d
Chloride	18.0	27.0	24.0	21.0	16.0	21.0	13.0	82.0	27.0	69.0
Iron	1.050	6.240	0.750	0.170	2.310	1.190	3.010	0.250	3.180	7.840
Manganese	0.487	0.416	0.396	<0.005	0.546	0.217	0.362	4.160	0.163	0.336
Phenols	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	0.006	<0.005
Sodium	10.400	23.500	7.800	8.500	8.290	9.500	9.700	131.000	12.000	48.600
Sulfate	74.0	60.0	94.0	66.0	72.0	72.0	12.0	720.0	94.0	230.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	76.800	98.400	83.100	84.100	110.000	83.000	96.900	377.00	121.000	205.000
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium										
-Total	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Fluoride	0.13	0.13	0.24	0.24	0.24	0.14	0.22	0.13	0.17	0.15
Mercury	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	2.470	1.010	2.640	2.880	2.660	2.860	1.010	21.900	2.310	4.300
Magnesium	23.500	27.100	23.300	20.300	26.500	22.900	21.000	73.000	26.300	59.000
Nickel	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005
Nitrates	<0.02	0.08	<0.02	2.20	<0.02	<0.02	<0.02	160.00	0.06	<0.02
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus, total	<0.02	0.12	0.04	<0.02	<0.02	<0.02	0.07	0.06	<0.02	<0.02

RESULTS OF ROUND 2 SAMPLING

3.2 Sand and Gravel Aquifer

Groundwater Sampling Results Inside Production Area (FMPC)

(All results in ppm except as noted)

	MW-1s	MW-1d	MW-3	MW-4	MW-5	MW-6s	MW-6d	MW-10	MW-13s	MW-[illegible]
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.[illegible]
Zinc	<0.025	<0.0025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.[illegible]
T.D.S.	456	476	416	348	560	448	332	2730	466	[illegible]
C.O.D.	<10	12	<10	<10	<10	<10	11	<10	11	[illegible]
pH-lab (1) (2)	7.32	7.36	7.40	7.47	7.30	7.40	7.47	6.66	7.28	[illegible]
Conductivity-lab (1) (3)	599	725	603	546	656	600	519	2,713	666	1,2[illegible]
T.O.C. (1)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<[illegible]
T.O.X. (1) (4)	47.0	12.0	<10	11.0	<10	19	<10	23.3	<10	[illegible]
Coliform (10)	<2	18	<2	2,100	<2	9	<2	<2	3	<2
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	[illegible]
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	[illegible]
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	[illegible]
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	[illegible]
2, 4-D (4)	<0.2	<0.2	<0.2	<0.2	<0.2	4.06	<0.2	<0.2	<0.2	[illegible]
2,4,5-TP, Silvex (4)	<0.2	<0.2	<0.2	<0.2	<0.2	0.694	<0.2	<0.2	<0.2	[illegible]
PCB's (4)	NA	ND	NA	----	NA	ND	ND	ND	ND	[illegible]
Gross Alpha (5)	<15	<15	<15	<15	<15	<15	<15	<15	<15	<[illegible]
Gross Beta (5)	<5	<5	<5	<5	<5	<5	<5	12.9	<5	[illegible]
Radium, Total (5)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<[illegible]
Radionuclide Scan (5) (12)	<5	<5	<5	<5	<5	<5	<5	<5	<5	[illegible]
Uranium (13)	0.0093	0.0001	0.0023	0.0058	0.0037	0.0006	0.0003	0.015	0.0021	[illegible]
Trichloroethene	----	----	----	0.0044	----	----	----	----	----	----

RESULTS OF ROUND 2 SAMPLING

3.2 Sand and Gravel Aquifer
Groundwater Sampling Results Inside Production Area (FMPC)
(All results are in ppm except as noted)

	MW-19s	MW-19d	MW-21s	MW-22s
Chloride	39.0	51.0	69.0	38.0
Iron	0.085	0.060	1.130	0.064
Manganese	0.027	2.360	<0.020	<0.020
Phenols	0.008	0.009	0.014	0.007
Sodium	43.600	75.400	52.900	27.800
Sulfate	98.0	410.0	92.0	100.0
Silver	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.005	<0.005	<0.005
Barium	<0.200	<0.200	<0.200	<0.200
Calcium	143.000	248.000	175.000	122.000
Cadmium	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005
Chromium				
-Total	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025
Fluoride	0.14	0.09	0.19	0.68
Mercury	0.0003	<0.0002	<0.0002	<0.0002
Potassium	4.710	7.960	10.340	3.540
Maynesium	41.100	26.400	21.200	34.600
Nickel	<0.005	0.007	<0.005	0.005
Nitrates	72.00	3.70	63.90	28.70
Lead	<0.005	<0.005	<0.005	<0.005
Phosphorus, total	0.04	0.05	0.09	<0.02

RESULTS OF ROUND 2 SAMPLING

3.2 Sand and Gravel Aquifer

Groundwater Sampling Results Inside Producation Area (FMPC)
(All results in ppm except as noted)

	MW-19s	MW-19d	MW-21s	MW-22s
Selenium	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.025	<0.025	<0.025	<0.025
T.D.S.	948	1,120	1,100	664
C.O.D.	11	<10	<10	<10
pH-lab (1) (2)	7.30	6.96	7.37	7.46
Conductivity-lab (1) (3)	1,200	1,575	1,255	933
T.O.C. (1)	<1	<1	<1	<1
T.O.X. (1) (4)	18.5	<10	22.3	21.8
Coliform (10)	<2	<2	<2	<2
Lindane (4)	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5
2, 4-D (4)	<0.2	<0.2	<0.2	<0.2
2,4,5 TP Silvex (4)	<0.2	<0.2	<0.2	<0.2
VOC's (4)	ND	ND	ND	ND
Gross Alpha (5)	15.3	<15	33	<15
Gross Beta (5)	194	12.2	930	13
Radium, Total (5)	130	<5	29	<5
Radionuclide Scan (5) (12)	<5	<5	<5	<5
Uranium (13)	0.0011	0.032	0.0018	0.0035

RESULTS OF ROUND 2 SAMPLING

Table 3.3

Groundwater Sampling Results Plant Production Wells (FMPC)
(All results in ppm except as noted)

	P-1	P-2	P-3
Chloride	15.0	22.0	34.0
Iron	3.030	3.960	5.560
Manganese	0.415	0.352	0.403
Phenols	<0.005	<0.005	<0.005
Sodium	7.650	11.200	26.500
Sulfate	50.0	8.0	110.0
Siver	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.005	<0.005
Barium	<0.200	<0.200	<0.200
Calcium	86.300	87.900	14.900
Cadmium	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005
Chromium			
-Total	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025
Fluoride	0.15	0.20	0.02
Mercury	<0.0002	<0.0002	<0.0002
Potassium	1.610	1.190	3.730
Magnesium	21.100	22.600	32.500
Nickel	<0.005	<0.005	<0.005
Nitrate	<0.02	0.02	<0.02
Lead	<0.005	<0.005	<0.005
Phosphorus, total	0.03	0.13	0.10

RESULTS OF ROUND 2 SAMPLING

Table 3.3 (Cont'd)
Groundwater Sampling Results Plant Production Wells (FMPC)
(All results in ppm except as noted)

	P-1	P-2	P-3
Selenium	<0.0025	<0.0025	<0.0025
Zinc	<0.025	<0.025	<0.025
T.D.S.	368	368	656
C.O.D	<10	<10	<10
pH-lab (1) (2)	7.43	7.60	7.57
Conductivity-lab (1) (3)	540	575	865
T.O.C. (1)	<1	<1	<1
T.O.X. (1) (4)	NA	<10	26.0
Coliform (10)	9	<2	<2
Lindane (4)	NA	<0.2	<0.2
Endrin (4)	NA	<0.2	<0.2
Methoxychlor (4)	NA	<0.2	<0.2
Toxaphene (4)	NA	<0.5	<0.5
2,4-D (4)	NA	<0.2	<0.2
2,4,5-TP, Silvex (4)	NA	<0.2	<0.2
VOC's (4)	NA	NA	NA
Gross Alpha (5)	<15	<15	<15
Gross Beta (5)	5.76	<5	<5
Radium, Total (5)	<5	<5	<5
Radionuclide Scan (5) (12)	<5	<5	<5
Uranium (13)	0.0004	0.0002	0.0002

RESULTS OF ROUND 2 SAMPLING

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results are in ppm except as noted)

	MW-9	MW-11	MW-14s	MW-14d	MW-15s	MW-16s	MW-16d	MW-17s	MW-17d
Chloride	22.0	21.0	20.0	18.0	19.0	20.0	19.0	22.0	21.0
Iron	0.210	8.540	5.700	0.150	0.031	1.020	1.300	0.180	1.330
Manganese	0.061	0.169	0.143	<0.020	<0.020	0.042	0.051	0.121	0.295
Phenols	0.007	0.007	0.008	0.007	<0.005	0.005	0.009	0.009	0.008
Sodium	10.300	9.600	9.400	8.200	11.000	10.500	10.400	7.240	7.600
Sulfate	70.0	78.0	68.0	58.0	52.0	56.0	58.0	96.0	80.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	79.900	99.800	89.000	78.700	69.400	92.600	91.700	139.000	92.700
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium									
-Total	<0.005	<0.005	0.014	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	0.099	<0.025	<0.025	0.027	<0.025	<0.025	<0.025
Fluoride	0.18	0.22	0.29	0.18	0.42	0.21	0.16	0.17	0.11
Mercury	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	2.170	0.950	3.410	2.050	2.780	3.070	2.430	1.850	2.130
Magnesium	21.600	25.500	22.100	19.500	19.100	21.000	21.600	30.500	18.300
Nickel	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate	2.96	<0.02	0.10	2.80	2.60	2.28	2.92	0.13	<0.02
Lead	<0.005	<0.005	0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus, Total	0.04	0.09	0.12	<0.02	0.05	<0.02	<0.02	<0.02	<0.02

RESULTS OF ROUND 2 SAMPLING

3.4 Sand and Gravel Aquifer

Groundwater Sampling Results Outside Production Area (FMPC)
(All results are in ppm except as noted)

	MW-9	MW-11	MW-14s	MW-14d	MW-15s	MW-16s	MW-16d	MW-17s	MW-17d
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
T.D.S.	408	476	344	316	344	408	372	620	412
C.O.D.	13	15	26	12	<10	<10	<10	<10	12
ph-lab (1) (2)	7.50	7.37	7.67	7.69	7.53	7.60	7.57	7.20	7.42
Conductivity-lab (1) (3)	540	643	518	515	534	522	529	790	546
T.O.C. (1)	<1	<1	1	1.25	<1	<1	<1	<1	<1
T.O.X. (1) (4)	11.3	22.8	25.8	26.3	30.0	<10	14.8	30.6	12.0
Coliform (10)	3,400	31	9	<2	<2	<2	6	<2	3
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,4,5-TP, Silvex (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
VOC's (4)	ND	ND	ND	ND	----	ND	ND	ND	ND
Gross Alpha (5)	<15	<15	<15	<15	24.9	<15	<15	<15	<15
Gross Beta (5)	<5	8.28	<5	7.74	25.16	9.67	5.26	<5	<5
Radium, Total (5)	<5	<5	<5	<5	7.14	<5	<5	<5	<5
Radionuclide Scan (5) (12)	<5	<5	<5	<5	<5	<5	<5	<5	<5
Uranium (13)	0.0011	0.0001	0.020	0.021	0.154	0.012	0.0075	0.0034	0.0005
1,1,1-Trichloroethane	---	----	----	----	0.0051	----	----	----	----

RESULTS OF ROUND 2 SAMPLING

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results are in ppm except as noted) (Cont'd)

	MW-18s	MW-18d	MW-20s	MW-20d	SW-2	OS-1	HK-15d	OS-2	OS-3
Chloride	6.0	2.0	21.0	22.0	30.0	19.0	25.0	36.0	29.0
Iron	32.700	2.500	0.710	1.300	0.104	0.081	3.100	0.005	1.930
Manganese	1.250	0.120	0.070	0.205	0.131	<0.020	0.309	<0.020	0.365
Phenols	0.009	0.006	<0.005	<0.005	0.007	0.006	<0.005	0.012	0.011
Sodium	4.440	4.600	11.400	9.100	13.600	13.600	7.630	13.800	11.100
Sulfate	50.0	56.0	76.0	86.0	68.0	58.0	94.0	62.0	70.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	0.035	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	146.000	98.200	115.000	104.000	97.700	73.300	109.000	108.000	94.300
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.200	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium									
-Total	0.025	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	<0.005
-Hexavalent	0.010	<0.005	<0.005	<0.005	<0.005	<0.006	<0.005	<0.005	<0.005
Copper	0.034	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Fluoride	0.63	0.40	0.20	0.11	0.29	0.58	0.10	0.18	0.20
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	3.160	0.525	2.660	1.920	2.610	2.840	2.000	3.120	2.420
Magnesium	38.800	33.500	20.900	22.000	26.700	18.700	24.600	22.600	22.600
Nickel	0.021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate	0.67	<0.02	5.48	0.06	3.40	2.60	0.09	5.04	0.10
Lead	0.012	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus, total	0.26	<0.02	<0.002	<0.002	<0.02	<0.02	<0.02	0.004	0.04

RESULTS OF ROUND 2 SAMPLING

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results are in ppm except as noted) (Cont'd)

	MW-18s	MW-18d	MW-20s	MW-20d	SW-2	US-1	HK-15d	US-2	US-3
Selenium	0.003	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	0.068	<0.025	<0.025	<0.025	<0.025	0.092	0.031	0.064	<0.025
T.D.S.	408	384	376	316	448	NA	452	444	340
C.O.D.	30	<10	<10	27	23	16	12	12	11
pH-lab (1) (2)	7.51	7.52	7.47	7.41	7.46	7.68	7.51	7.47	7.32
Conductivity-lab (1) (3)	550	566	568	578	637	499	612	636	618
T.O.C. (1)	4	1	<1	1	<1	<1	<1	<1	<1
T.O.X. (1) (4)	51.5	<10	28.0	15.5	<10	<10	<10	18.0	24.0
Coliform (10)	<2	<2	<2	3	100	9	<2	<2	<2
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,4,5-TP, Silvex (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
VOC's (4)	ND	ND	ND	ND	ND	NA	NA	NA	NA
Gross Alpha (5)	<15	<15	<15	<15	<15	35	<15	51	<15
Gross Beta (5)	14	<5	5.7	<5	12.37	37	<5	31	<5
Radium, Total (5)	<5	<5	8	5.9	7.74	36	<5	6.57	<5
Radionuclide Scan (5) (12)	<5	<5	<5	<5	<5	<5	<5	<5	<5
Uranium (13)	0.0027	0.0017	0.0005	0.0009	0.0008	0.205	0.0001	0.282	0.033

NOTES

ND	Not Detected
NA	Not Analyzed
(1)	Average of four tests
(2)	pH results in standard units
(3)	Conductivity results in umhos/cm
(4)	Concentrations reported in ppb
(5)	Results in pCi/l
(6)	Taken from 40 CFR Part 141 National Interim Primary Drinking Water Regulations - Subpart B - Maximum Contaminant Levels, July 1, 1984.
(7)	Taken from 40 CFR Part 143 National Secondary Drinking Water Regulations - Section 143.3 - Secondary Maximum contaminant Levels.
(8)	High counts did not yield any individual elements using a 4096 channel analyzer. These levels are due to solids only in the samples.
(9)	Standard is for Radium -226 Plus Radium -228
(10)	Reported in per 100 ml
(11)	Maximum Permissible Activity taken from World Health Organization, 1970 European Standards. National Primary Drinking Water Regulation for gross beta is 4 mR/year.
(12)	Radionuclide Scan includes analysis for K-40, Unat, Th-228, Th-230, Th-232, Tc-99 Cs-137, Sr-90, Ru-106, Np-237, Pu-238, Pu-239, Pu-240.
(13)	WMCO Split Sample - Analyzed for Uranium at the FMPC; Results in mg/l.

Results of Round 3 Sampling

3.1 Shallow (Till) Groundwater Sampling Results (FMPC)

(All results in ppm except as noted)

	MW-12	MW-19TP	MW-20TP	MW-21TP	MW-22TP	OS-1A
Chloride	100.0	1,030	3.0	19.0	56.0	32.0
Iron	0.618	2.240	69.800	1.740	22.700	0.463
Manganese	<0.020	2.260	2.490	1.920	2.680	<0.020
Phenols	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	191.000	144.000	4.970	11.600	21.700	32.700
Sulfate	8.0	400.0	48.0	240.0	1,300	150.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.002
Arsenic	<0.005	<0.005	0.025	0.006	0.011	<0.005
Barium	<0.200	<0.200	0.746	0.292	<0.200	<0.200
Calcium	21.900	539.000	250.000	153.000	426.000	141.000
Cadmium	<0.002	<0.002	0.003	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	0.006	<0.005	<0.005	0.011
Chromium						
-Total	<0.005	<0.005	0.101	<0.005	0.040	<0.005
-Hexavalent	<0.005	<0.005	<0.010	<0.005	<0.010	<0.005
Copper	<0.025	<0.025	0.105	<0.025	0.037	<0.025
Fluoride	1.05	0.25	0.30	0.55	1.34	0.25
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	11.100	1.230	17.500	1.620	10.700	28.100
Magnesium	7.300	154.000	106.000	70.000	194.000	55.000
Nickel	<0.005	0.012	0.105	<0.005	0.037	<0.005
Nitrates	0.03	0.02	0.04	0.02	<0.02	11.20
Lead	<0.005	<0.005	0.021	<0.005	<0.005	<0.005
Phosphorus, total	0.03	0.34	0.41	0.08	<0.02	0.02

Results of Round 3 Sampling

3.1 Shallow (Till) Groundwater Sampling Results (FMPC)

(All results in ppm except as noted)

	MW-12	MW-19TP	MW-20TP	MW-21TP	MW-22TP	OS-1A
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.025	<0.025	0.400	<0.025	0.255	0.099
T.D.S.	672	3,570	428	544	2,430	694
C.O.D.	<10	36	50	<10	25	<10
pH-lab (1) (2)	7.74	6.58	7.00	7.17	6.83	6.92
Conductivity-lab (1) (3)	1,100	3,400	665	900	2,580	1,050
T.O.C. (1)	1	5.5	3	3	6	3
T.O.X. (1) (4)	8,270	176	61.5	<10	22.8	<10
Coliform (10)	<5	9	<10	50	<5	10,000
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4,5-TP, Silvex (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOC's (4)	ND	--	--	ND	--	--
1.1 Dichloroethane	--	17.1	--	--	--	--
Cis-1,2-Dichloroethene	--	5.1	--	--	--	--
1,1,1 Trichloroethane	--	--	16.1	--	--	--
Acetone	--	--	--	--	73.0	88.0
2-Propanol	--	--	--	--	21.5	--
Gross Alpha (5)	8.46	2	<1	16.3	288	<1
Gross Beta (5)	10.9	45.4	3.72	386	423	27.4
Uranium (13)	<0.0001	0.36	0.031	2.76	4.28	0.0022

Results of Round 3 Sampling

3.2 Sand and Gravel Aquifer
Groundwater Sampling Results Inside Production Area (FMPC)
(All results in ppm except as noted)

	MW-1s	MW-1d	MW-3	MW-4	MW-5	MW-8s	MW-8d	MW-10	MW-13s	MW-13d
Chloride	17.0	19.0	21.0	21.0	14.0	21.0	11.0	80.0	25.0	64.0
Iron	0.906	5.800	0.752	0.539	2.080	4.750	2.840	0.264	3.140	7.350
Manganese	0.468	0.332	0.374	0.069	0.457	0.369	0.434	4.220	0.161	0.327
Phenols	<0.005	<0.005	0.011	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	<0.005
Sodium	9.300	15.400	8.600	9.500	8.610	9.200	8.100	132.000	10.800	39.400
Sulfate	72.0	11.0	82.0	62.0	68.0	32.0	10.0	640.0	110.0	260.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	<0.005
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	98.500	89.000	78.300	82.900	108.000	56.000	82.400	418.000	118.000	212.000
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium										
-Total	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025	<0.025	0.040	<0.025	<0.025	<0.025	<0.025
Fluoride	0.22	0.17	0.24	0.25	0.40	0.12	0.21	0.11	0.19	0.14
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	2.250	0.980	2.580	2.550	2.560	2.650	1.130	18.700	2.140	4.400
Magnesium	24.800	22.800	22.600	21.800	27.500	24.200	21.500	69.000	26.800	51.000
Nickel	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	<0.005	<0.005
Nitrates	0.003	0.02	<0.02	1.40	0.05	0.03	0.02	153.00	<0.02	0.06
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus, total	<0.02	0.13	<0.02	<0.02	<0.02	<0.02	0.10	<0.02	<0.02	<0.02

Results of Round 3 Sampling

3.2 Sand and Gravel Aquifer
Groundwater Sampling Results Inside Production Area (FMPC)
(All results in ppm except as noted)

	MW-1s	MW-1d	MW-3	MW-4	MW-5	MW-8s	MW-8d	MW-10	MW-13s	MW-13d
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.025	<0.025	<0.025	<0.025	0.025	0.052	<0.025	<0.025	<0.025	<0.025
T.D.S.	388	392	416	392	508	228	332	2,550	448	1,020
C.O.D.	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
pH-lab (1) (2)	7.23	7.39	7.38	7.55	7.36	7.41	7.41	6.89	7.14	6.97
Conductivity-lab (1) (3)	620	600	600	573	680	380	540	2,750	720	1,300
T.O.C. (1)	1	1	1	1	<1	1	<1	1.75	2.25	1
T.O.X. (1) (4)	39.2	<10	65.5	18.0	120.0	<10	<10	<10	<10	1,400
Coliform (10)	6	3	<2	350	17	3,700	550	9	3	<2
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2, 4-D (4)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4,5-TP, Silvex (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOC's (4)	NA	--	NA	NA	NA	--	--	--	--	ND
1,1,1 Trichloroethane	--	2.0	--	--	--	6.0	--	--	--	--
Carbon Disulfide	--	--	--	--	--	--	32.3	--	--	--
Butanol	--	--	--	--	--	--	180.0	--	--	--
Trichloroethene	--	--	--	--	--	--	--	1.7	--	--
Acetone	--	--	--	--	--	--	--	--	735.0	--
2-Propanol	--	--	--	--	--	--	--	--	29,600.0	--
Gross Alpha (5)	<1	<1	<1	1.29	<1	<1	<1	<1	2.89	<1
Gross Beta (5)	4.8	<1	25.5	<1	3.2	1.66	<1	1.88	1.31	3.23
Uranium (13)	0.011	0.0002	0.0022	0.0087	0.0041	0.0032	0.0010	0.019	0.0011	0.018

3.2 Sand and Gravel Aquifer
Groundwater Sampling Results Inside Production Area (FMPC)
(All results are in ppm except as noted)

	MW-19s	MW-19d	MW-21s	MW-22s
Chloride	41.0	52.0	45.0	61.0
Iron	0.070	<0.050	0.438	<0.050
Manganese	<0.020	2.440	0.028	<0.020
Phenols	<0.005	<0.005	0.007	<0.005
Sodium	34.700	69.400	34.600	26.200
Sulfate	96.0	385.0	74.0	98.0
Silver	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.005	<0.005	<0.005
Barium	<0.200	<0.200	<0.200	<0.200
Calcium	135.000	231.000	159.000	133.000
Cadmium	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005
Chromium				
-Total	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025
Fluoride	0.28	0.12	0.39	0.55
Mercury	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	5.030	7.420	10.600	4.160
Magnesium	34.400	26.800	23.200	38.700
Nickel	<0.005	<0.005	<0.005	<0.005
Nitrates	49.20	0.09	80.80	40.80
Lead	<0.005	<0.005	<0.005	<0.005
Phosphorus, total	<0.02	<0.02	<0.02	<0.02

Results of Round 3 Sampling

3.2 Sand and Gravel Aquifer
Groundwater Sampling Results Inside Production Area (FMPC)
(All results in ppm except as noted)

	MW-19s	MW-19d	MW-21s	MW-22s
Selenium	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.025	<0.025	<0.025	<0.025
T.D.S.	704	1,040	916	800
C.O.D.	<10	<10	<10	<10
pH-lab (1) (2)	7.29	7.01	7.28	7.50
Conductivity-lab (1) (3)	1,100	1,350	1,280	1,040
T.O.C. (1)	<1	1	1	1
T.O.X. (1) (4)	863.0	49.3	<10	<10
Coliform (10)	<2	<5	<2	3
Lindane (4)	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.2	<0.2	<0.2
2, 4-D (4)	<0.5	<0.5	<0.5	<0.5
2,4,5 TP Silvex (4)	<1.0	<1.0	<1.0	<1.0
VOC's (4)	<0.5	<0.5	<0.5	<0.5
Acetone	ND	--	--	ND
2-Propanol	--	490.0	--	--
1,1,1 Trichloroethane	--	830.0	--	--
Gross Alpha (5)	--	--	10.5	--
Gross Beta (5)	3.47	1.7	11.4	3.81
Uranium (13)	430	<1	867	50.1
	.010	.019	.0046	.0043

Results of Round 3 Sampling

Table 3.3

Groundwater Sampling Results Plant Production Wells (FMPC)
(All results in ppm except as noted)

	P-1	P-2	P-3*
Chloride	33.0	20.0	
Iron	7.660	3.430	
Manganese	0.388	0.320	
Phenols	<0.005	<0.005	
Sodium	24.800	11.400	
Sulfate	94.0	27.0	
Siver	<0.030	<0.030	
Arsenic	<0.005	<0.005	
Barium	<0.200	<0.200	
Calcium	127.000	91.100	
Cadmium	<0.002	<0.002	
Cyanide	<0.005	<0.005	
Chromium			
-Total	<0.005	<0.005	
-Hexavalent	<0.005	<0.005	
Copper	<0.025	<0.025	
Fluoride	0.22	0.23	
Mercury	<0.0002	<0.0002	
Potassium	3.350	1.337	
Magnesium	33.500	24.300	
Nickel	0.012	0.022	
Nitrate	0.02	0.02	
Lead	<0.005	<0.005	
Phosphorus, total	0.24	0.15	

* Well was not sampled due to pump repair work.

Table 3.3 (Cont'd)
Groundwater Sampling Results Plant Production Wells (FMPC)
(All results in ppm except as noted)

	P-1	P-2	P-3*
Selenium	<0.0025	<0.0025	
Zinc	<0.025	<0.025	
T.D.S.	576	456	
C.O.D	<10	10	
pH-lab (1) (2)	7.60	7.64	
Conductivity-lab (1) (3)	820	598	
T.O.C. (1)	<1	<1	
T.O.X. (1) (4)	57.5	<10	
Coliform (10)	29	<2	
Lindane (4)	<0.2	<0.2	
Endrin (4)	<0.2	<0.2	
Methoxychlor (4)	<0.2	<0.2	
Toxaphene (4)	<0.5	<0.5	
2,4-D (4)	<1.0	<1.0	
2,4,5-TP, Silvex (4)	<0.5	<0.5	
VOC's (4)	NA	NA	
Gross Alpha (5)	3.47	<1	
Gross Beta (5)	24.3	5.25	
Uranium (13)	0.0001	0.0001	

* Well was not sampled due to pump repair work.

Results of Round 3 Sampling

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results are in ppm except as noted)

	MW-9	MW-11	MW-14s	MW-14d	MW-15s	MW-16s	MW-16d	MW-17s	MW-17d
Chloride	21.0	45.0	19.0	18.0	21.0	22.0	19.0	28.0	18.0
Iron	0.434	2.820	1.440	0.130	0.294	0.557	<0.050	<0.050	1.540
Manganese	0.063	0.160	0.083	<0.020	<0.020	0.031	<0.020	0.096	0.290
Phenols	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006
Sodium	9.500	8.200	10.500	9.800	11.400	9.200	8.500	7.490	8.840
Sulfate	80.0	78.0	50.0	58.0	52.0	52.0	50.0	100.0	74.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	79.300	94.000	88.400	845.000	73.900	78.900	71.900	142.000	92.700
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium									
-Total	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	0.115	<0.025	<0.025	0.030	<0.025	<0.025	<0.025
Fluoride	0.21	0.26	0.34	0.22	0.48	0.22	0.20	0.18	0.17
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	2.290	1.150	3.670	2.010	2.770	2.480	2.090	1.930	2.090
Magnesium	22.500	26.700	20.100	20.400	20.400	21.500	19.400	30.800	18.700
Nickel	<0.005	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate	3.10	<0.02	2.06	0.48	2.24	2.24	2.64	0.07	0.03
Lead	<0.005	<0.005	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus, total	<0.025	0.07	0.19	0.05	0.05	0.07	0.02	<0.02	<0.02

Results of Round 3 Sampling

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results are in ppm except as noted)

	MW-9	MW-11	MW-14s	MW-14d	MW-15s	MW-16s	MW-16d	MW-17s	MW-17d
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.025	<0.025	0.048	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
T.D.S.	404	404	468	424	400	372	292	580	456
C.O.D.	<10	<10	<10	<10	<10	<10	<10	<10	<10
ph-lab (1) (2)	7.45	7.36	7.63	7.87	7.36	7.01	7.75	7.03	7.20
Conductivity-lab (1) (3)	595	668	535	540	560	535	510	830	590
T.O.C. (1)	1	1	1.5	1	2	<1	<1	1	1
T.O.X. (1) (4)	<10	39.3	30.8	<10	58.3	19.0	26.5	<10	25.3
Coliform (10)	3,600	6	86	<2	<2	860	<2	310	<2
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4,5-TP, Silvex (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOC's (4)	--	--	ND	--	--	ND	ND	ND	--
Acetone	8,670	--	--	--	--	--	--	--	58.5
2-Propanol	26,400.0	--	--	--	--	--	--	--	130.0
Carbon Disulfide	--	6.3	--	--	--	--	--	--	--
Butanol	--	195.0	--	--	--	--	--	--	--
Tetracloroethene	--	--	--	1.1	--	--	--	--	--
1,1,1 Trichloroethane	--	--	--	--	2.9	--	--	--	--
Trichloroethene	--	--	--	--	3.7	--	--	--	--
Gross Alpha (5)	<1	<1	<1	6.9	70	1.4	1.21	2.13	<1
Gross Beta (5)	5.91	6.1	<1	7.08	21.5	<1	<1	2.77	6.03
Uranium (13)	0.0015	0.0002	0.025	0.027	0.163	0.017	0.0094	0.0044	0.0009

Results of Round 3 Sampling

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results are in ppm except as noted) (Cont'd)

	MW-18s	MW-18d	MW-20s	MW-20d	SW-2	OS-1	HK-15d	OS-2	OS-3
Chloride	5.0	2.0	22.0	22.0	28.0	34.0	24.0	38.0	24.0
Iron	2.740	2.540	0.172	1.240	<0.050	<0.050	2.630	<0.050	1.410
Manganese	0.141	0.204	0.034	0.184	0.130	<0.020	0.282	<0.020	0.347
Phenols	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	0.012	0.013	0.022
Sodium	4.550	3.990	8.500	8.500	11.200	118.000	6.260	11.000	9.600
Sulfate	49.0	58.0	67.0	82.0	78.0	53.0	108.0	62.0	66.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	117.000	91.500	87.700	91.300	101.000	82.600	107.000	82.000	85.800
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium									
-Total	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Fluoride	0.27	0.34	0.20	0.16	0.26	0.50	0.19	0.22	0.25
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	1.780	0.768	2.640	2.010	2.390	2.730	1.470	3.200	2.580
Magnesium	29.600	33.500	20.600	22.800	27.700	19.900	25.200	22.900	22.000
Nickel	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	<0.005
Nitrate	0.78	<0.02	4.52	0.05	2.76	2.66	0.05	4.24	0.07
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus, total	0.17	<0.02	<0.02	<0.02	<0.02	0.16	<0.02	<0.02	<0.02

Results of Round 3 Sampling

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results are in ppm except as noted) (Cont'd)

	MW-18s	MW-18d	MW-20s	MW-20d	SW-2	OS-1	HK-15d	OS-2	OS-3
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.025	<0.025	<0.025	<0.025	<0.025	0.089	0.057	0.055	<0.025
T.D.S.	362	380	446	606	456	318	354	384	444
C.O.D.	<10	<10	<10	<10	<10	<10	<10	<10	<10
pH-lab (1) (2)	7.26	7.19	7.40	7.35	7.28	7.40	7.35	7.39	7.31
Conductivity-lab (1) (3)	595	600	580	600	678	420	543	650	620
T.O.C. (1)	1	<1	<1	<1	<1	<1	<1	1	1
T.O.X. (1) (4)	<10	73.8	18.3	36.3	6,440	<10	<10	<10	<10
Coliform (10)	6	<5	<2	<2	<2	2,400	<2	25	<2
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0
2,4,5-TP, Silvex (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOC's (4)	ND	ND	ND	--	ND	--	NA	NA	NA
Acetone	--	--	--	3,600.0	--	--	--	--	--
2-Propanol	--	--	--	8,390.0	--	--	--	--	--
1,1,1 Trichloroethane	--	--	--	--	--	2.0	--	--	--
Gross Alpha (5)	<1	<1	<1	1.21	<1	42.3	<1	48.5	<1
Gross Beta (5)	1.37	13.8	6.07	4.77	9.40	38.5	3	19.0	8.47
Uranium (13)	.0023	.0013	.0005	.0007	.0006	.233	.0002	.260	.048

NOTES

ND	Not Detected
NA	Not Analyzed
(1)	Average of four tests
(2)	pH results in standard units
(3)	Conductivity results in umhos/cm
(4)	Concentrations reported in ppb
(5)	Results in pCi/l
(6)	Taken from 40 CFR Part 141 National Interim Primary Drinking Water Regulations - Subpart B - Maximum Contaminant Levels, July 1, 1984.
(7)	Taken from 40 CFR Part 143 National Secondary Drinking Water Regulations - Section 143.3 - Secondary Maximum contaminant Levels.
(8)	High counts did not yield any individual elements using a 4096 channel analyzer. These levels are due to solids only in the samples.
(9)	Standard is for Radium -226 Plus Radium -228
(10)	Reported in per 100 ml
(11)	Maximum Permissible Activity taken from World Health Organization, 1970 European Standards. National Primary Drinking Water Regulation for gross beta is 4 mR/year.
(12)	Radionuclide Scan includes analysis for K-40, Unat, Th-228, Th-230, Th-232, Tc-99 Cs-137, Sr-90, Ru-106, Np-237, Pu-238, Pu-239, Pu-240.
(13)	WMCO Split Sample - Analyzed for Uranium at the FMPC; Results in mg/l.
(14)	Taken from World Health Organization European Standards, 1970.

	Standards		
	Primary (6)	Secondary (7)	Recommended (14)
Chloride	---	250	---
Iron	---	0.3	---
Manganese	---	0.05	---
Phenols	---	---	0.001
Sodium	---	---	---
Sulfate	---	250	---
Silver	0.05	---	---
Arsenic	0.05	---	---
Barium	1.0	---	---
Calcium	---	---	---
Cadmium	0.010	---	---
Cyanide	---	---	0.05
Chromium			
- Total	0.05	---	---
- Hexavalent	---	---	---
Copper	---	1.0	---
Fluoride	1.4-2.4	---	---
Mercury	0.002	---	---
Potassium	---	---	---
Magnesium	---	---	---
Nickel	---	---	---
Nitrates	10.0	---	---
Lead	0.05	---	---
Phosphorus, total	---	---	---
Selenium	0.01	---	---
Zinc	---	5.0	---
T.D.S.	---	500	---
C.O.D.	---	---	---
pH-lab (1) (2)	---	6.5-8.5	---
Conductivity-lab (1) (3)	---	---	---
T.O.C.	---	---	---
T.O.X.	---	---	---
Coliform (10)	1	---	---
Lindane (4)	4	---	---
Endrin (4)	0.2	---	---
Methoxychlor (4)	100	---	---
Toxaphene (4)	5	---	---
2,4-D (4)	10	---	---
2,4,5-TP, Silvex (4)	10	---	---
VOC's (4)	---	---	---
Gross Alpha (5)	15	---	---
Gross Beta (5)	30 (11)	---	---
Radium, Total (5)	5 (9)	---	---
Radionuclide Scan (5) (12)	---	---	---

NOTES

ND Not Detected
NA Not Analyzed (See page 3-4 for explanation)
(1) Average of four tests
(2) pH results in standard units
(3) Conductivity results in umhos/cm
(4) Concentrations reported in ppb
(5) Results in pCi/l
(6) Taken from 40 CFR Part 141 National Interim Primary Drinking Water Regulations - Support B - Maximum Contaminant Levels, July 1, 1984.
(7) Taken from 40 CFR Part 143 National Secondary Drinking Water Regulations - Section 143.3 - Secondary Maximum Contaminant Levels.
(8) High counts did not yield any individual elements using a 4096 channel analyzer. These levels are due to solids only in the samples.
(9) Taken from DOE Order 5480.1A: Limit for Release to Restricted and Unrestricted Areas
(10) Standard is for Radium -226 Plus Radium -228.
(11) Reported in per 100 ml
(12) Maximum Permissible Activity taken from World Health Organization, 1970 European Standards. National Primary Drinking Water Regulation for gross beta is 4 mR/year.

RESULTS OF ROUND 4 SAMPLING

3.1 Shallow (Till) Groundwater Sampling Results (FMPC)

(All results in ppm except as noted)

	MW-12	MW-19TP	MW-20TP	MW-21TP	MW-22TP	OS-1A
Chloride	91.0	744.0	<1.0	13.0	14.0	32.0
Iron	2.200	3.930	7.530	3.450	7.050	0.069
Manganese	0.044	1.970	1.670	2.010	1.250	<0.020
Phenols	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	236.000	171.000	5.370	11.600	16.200	272.000
Sulfate	<1.0	375.0	42.0	435.0	1,320	100.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.005	0.007	0.006	<0.005	<0.005
Barium	<0.200	<0.200	<0.200	0.277	<0.200	<0.200
Calcium	97.900	489.000	119.000	164.000	524.000	149.000
Cadmium	<0.002	<0.002	<0.002	0.003	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium						
-Total	<0.005	0.006	0.006	<0.005	0.012	<0.005
-Hexavalent	<0.005	<0.006	<0.006	<0.005	<0.010	<0.005
Copper	<0.025	<0.025	<0.025	<0.025	0.025	<0.025
Fluoride	1.00	0.40	0.29	0.46	1.07	0.28
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	11.500	2.010	1.890	1.820	6.700	24.300
Magnesium	6.200	137.000	33.000	58.000	144.000	43.000
Nickel	<0.005	0.009	0.010	0.007	0.015	<0.005
Nitrates	0.02	0.13	0.04	0.07	0.24	8.80
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus, total	<0.02	0.09	0.13	0.13	0.38	0.04

RESULTS OF ROUND 4 SAMPLING

3.1 Shallow (Till) Groundwater Sampling Results (FMPC)

(All results in ppm except as noted)

	MW-12	MW-19TP	MW-20TP	MW-21TP	MW-22TP	OS-1A
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.025	<0.025	0.033	0.025	0.056	0.046
T.D.S.	716	2,830	320	761	2,560	668
C.O.D.	<10	20	<10	<10	25	<10
pH-lab (1) (2)	7.66	6.82	7.07	7.37	7.01	7.25
Conductivity-lab (1) (3)	1,030	3,500	675	988	2,510	921
T.O.C. (1)	<1	4	<1	3	5.75	<1
T.O.X. (1) (4)	<10.0	163.0	<10	<10	21.5	<10
Coliform (10)	3	13	130	260	13	2,600
Alachlor (LASSO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,4,5-TP, Silvex (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
VOC's (4)	ND	--	ND	ND	--	--
1.1 Dichloroethane	--	1.0	--	--	--	--
Acetone	--	--	--	--	4,770.0	4,480.0
2-Propanol	--	--	--	--	8,500.0	1,420.0
Trichloroethene	--	0.5	--	--	--	--
Tetrachloroethene	--	8.2	--	--	--	--
Bromoform	--	7.0	--	--	--	--
Gross Alpha (5)	21	13	2	251	330	<1
Gross Beta (5)	7	50	3	251	625	33
Uranium (13)	0.0002	0.74	0.018	4.48	4.40	0.0011

RESULTS OF ROUND 4 SAMPLING

3.2 Sand and Gravel Aquifer

Groundwater Sampling Results Inside Production Area (FMPC)
(All results in ppm except as noted)

	MW-1s	MW-1d	MW-3	MW-4	MW-5	MW-8s	MW-8d	MW-10	MW-13s	MW-13d
Chloride	17.0	18.0	21.0	24.0	17.0	18.0	12.0	86.0	27.0	63.0
Iron	1.150	5.160	1.060	0.565	2.200	1.230	2.610	0.393	2.630	7.260
Manganese	0.547	0.383	0.418	0.031	0.553	0.243	0.390	5.190	0.211	0.393
Phenols	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.066	<0.005	<0.005	<0.005
Sodium	10.200	11.700	15.100	15.900	5.900	9.300	9.000	188.000	255.000	54.200
Sulfate	80.0	8.0	100.0	58.0	72.0	73.0	14.0	680.0	105.0	240.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	103.000	96.000	96.300	86.800	119.000	91.200	84.700	421.000	130.000	207.000
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.005
Chromium										
-Total	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Fluoride	0.20	0.24	0.20	0.21	0.24	0.17	0.22	0.14	0.24	0.16
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	2.290	0.885	2.590	2.940	2.460	2.660	1.100	18.400	2.760	4.190
Magnesium	24.500	24.100	24.200	20.200	28.900	23.900	22.000	73.000	28.000	44.100
Nickel	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005
Nitrates	0.04	0.04	<0.02	0.27	0.04	0.06	0.07	142.00	0.08	0.07
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.014	<0.005	<0.005	<0.005
Phosphorus, total	<0.02	0.09	0.04	0.04	0.50	0.04	0.36	0.04	<0.02	<0.02

RESULTS OF ROUND 4 SAMPLING

3.2 Sand and Gravel Aquifer
Groundwater Sampling Results Inside Production Area (FMPC)
(All results in ppm except as noted)

	MW-1s	MW-1d	MW-3	MW-4	MW-5	MW-8s	MW-8d	MW-10	MW-13s	MW-13d
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.002
Zinc	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
T.D.S.	423	363	404	332	473	350	377	2,320	503	972
C.O.D.	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
pH-lab (1) (2)	7.38	7.56	7.53	7.41	7.37	7.54	7.40	7.08	7.20	6.93
Conductivity-lab (1) (3)	600	600	566	531	700	600	550	2,600	690	1,280
T.O.C. (1)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
T.O.X. (1) (4)	31.0	<10	67.8	7.3	24.0	<10	21.0	10	<10	<10
Coliform (10)	28	70	12	13	<2	3	<2	13	<2	6
Alachlor (LASSO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2, 4-D (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,4,5-TP, Silvex (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
VOC's (4)	NA	ND	NA	ND	NA	NA	NA	ND	ND	--
Acetone	--	--	--	--	--	--	--	--	--	1,030.0
Gross Alpha (5)	5	13	<1	<1	<1	5	10	5	<1	<1
Gross Beta (5)	5	7	2	4	3	18	18	11	3	4
Uranium (13)	0.083	0.0001	0.0022	0.0080	0.0034	NA	0.0003	0.016	0.0011	0.021

RESULTS OF ROUND 4 SAMPLING

3.2 Sand and Gravel Aquifer
Groundwater Sampling Results Inside Production Area (FMPC)
(All results are in ppm except as noted)

	MW-19s	MW-19d	MW-21s	MW-22s
Chloride	42.0	49.0	44.0	68.0
Iron	0.112	0.314	0.295	8.910
Manganese	0.031	3.190	0.038	0.391
Phenols	<0.005	<0.005	<0.005	<0.005
Sodium	28.100	68.700	44.700	35.700
Sulfate	90.0	330.0	90.0	<1.0
Silver	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.005	<0.005	0.007
Barium	<0.200	<0.200	<0.200	<0.200
Calcium	153.000	204.000	149.000	218.000
Cadmium	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005
Chromium				
-Total	<0.005	<0.005	<0.005	0.035
-Hexavalent	<0.005	<0.005	<0.005	0.020
Copper	<0.025	<0.025	<0.025	0.025
Fluoride	0.29	49.0	0.24	0.63
Mercury	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	4.010	7.270	8.850	5.970
Magnesium	32.500	26.600	25.500	65.000
Nickel	<0.005	<0.005	<0.005	0.009
Nitrates	45.30	0.11	87.70	49.60
Lead	<0.005	<0.005	<0.005	0.006
Phosphorus, total	0.04	0.04	0.39	0.02

RESULTS OF ROUND 4 SAMPLING

3.2 Sand and Gravel Aquifer

Groundwater Sampling Results Inside Production Area (FMPC)

(All results in ppm except as noted)

	MW-19s	MW-19d	MW-21s	MW-22s
Selenium	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.025	<0.025	<0.025	0.041
T.D.S.	652	962	1,046	1,090
C.O.D.	<10	<10	10	<10
pH-lab (1) (2)	7.45	7.09	7.23	7.22
Conductivity-lab (1) (3)	1,000	1,200	1,260	1,100
T.O.C. (1)	<1	<1	<1	<1
T.O.X. (1) (4)	13.0	<10	21.3	<10
Coliform (10)	<2	6	9	<2
Alachlor (LASSO)	<0.2	<0.2	<0.2	NA
Lindane (4)	<0.2	<0.2	<0.2	NA
Endrin (4)	<0.2	<0.2	<0.2	NA
Methoxychlor (4)	<0.2	<0.2	<0.2	NA
Toxaphene (4)	<0.5	<0.5	<0.5	NA
2, 4-D (4)	<0.2	<0.2	<0.2	NA
2,4,5 TP Silvex (4)	<0.2	<0.2	<0.2	NA
VOC's (4)	ND	(15)	--	ND
Tetrachloroethene	--	--	11.9	--
Gross Alpha (5)	4	2	15	<1
Gross Beta (5)	209	8	627	42
Uranium (13)	0.0041	0.027	0.0047	0.0032

RESULTS OF ROUND 4 SAMPLING

Table 3.3

Groundwater Sampling Results Plant Production Wells (FMPC)
(All results in ppm except as noted)

	P-1	P-2	P-3*
Chloride	35.0	20.0	NA
Iron	5.850	2.940	NA
Manganese	0.455	0.379	NA
Phenols	<0.005	<0.005	NA
Sodium	39.100	15.600	NA
Sulfate	125.0	42.0	NA
Siver	<0.030	<0.030	NA
Arsenic	<0.005	<0.005	NA
Barium	<0.200	<0.200	NA
Calcium	138.000	96.400	NA
Cadmium	<0.002	<0.002	NA
Cyanide	<0.005	<0.005	NA
Chromium			
-Total	<0.005	<0.005	NA
-Hexavalent	<0.005	<0.005	NA
Copper	<0.025	<0.025	NA
Fluoride	0.20	0.25	NA
Mercury	<0.0002	<0.0002	NA
Potassium	3.720	1.340	NA
Magnesium	35.500	25.100	NA
Nickel	<0.005	<0.005	NA
Nitrate	0.03	0.02	NA
Lead	<0.005	<0.005	NA
Phosphorus, total	0.08	0.08	NA

* Well was not sampled due to pump repair work.

RESULTS OF ROUND 4 SAMPLING

Table 3.3 (Cont'd)
Groundwater Sampling Results Plant Production Wells (FMPC)
(All results in ppm except as noted)

	P-1	P-2	P-3*
Selenium	<0.0025	<0.0025	NA
Zinc	<0.025	<0.025	NA
T.D.S.	502	404	NA
C.O.D	<10	<10	NA
pH-lab (1) (2)	7.40	7.35	NA
Conductivity-lab (1) (3)	893	598	NA
T.O.C. (1)	<1	<1	NA
T.O.X. (1) (4)	61.8	<10	NA
Coliform (10)	<2	<2	NA
Alachlor (LASSO)	<0.2	<0.2	NA
Lindane (4)	<0.2	<0.2	NA
Endrin (4)	<0.2	<0.2	NA
Methoxychlor (4)	<0.2	<0.2	NA
Toxaphene (4)	<0.5	<0.5	NA
2,4-D (4)	<0.2	<0.2	NA
2,4,5-TP, Silvex (4)	<0.2	<0.2	NA
VOC's (4)	NA	NA	NA
Gross Alpha (5)	<1	<1	NA
Gross Beta (5)	1	<1	NA
Uranium (13)	0.0002	0.0002	NA

* Well was not sampled due to pump repair work.

RESULTS OF ROUND 4 SAMPLING

(All results are in ppm except as noted)

	MW-9	MW-11	MW-14s	MW-14d	MW-15s	MW-16s	MW-16d	MW-17s	MW-17d
Chloride	23.0	19.0	19.0	20.0	21.0	17.0	17.0	27.0	20.0
Iron	0.198	3.060	26.500	<0.050	0.289	0.690	<0.050	0.107	1.470
Manganese	0.074	0.187	0.342	<0.020	<0.020	0.025	<0.020	0.154	0.321
Phenols	<0.005	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	12.500	7.800	11.900	11.800	14.900	8.900	9.040	12.300	13.000
Sulfate	70.0	78.0	60.0	60.0	60.0	60.0	70.0	100.0	72.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.005	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	84.400	105.000	197.000	83.600	82.900	87.900	82.800	149.000	100.000
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium									
-Total	<0.005	<0.005	0.084	<0.005	0.009	0.011	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.01	<0.005	<0.009	<0.010	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	0.127	<0.025	0.027	<0.025	<0.025	<0.025	<0.025
Fluoride	0.18	0.23	0.38	0.19	0.40	0.24	0.20	0.23	0.18
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	2.130	1.060	4.480	2.130	2.650	2.390	2.120	2.060	2.180
Magnesium	21.700	26.100	37.100	19.300	20.600	21.300	19.900	30.200	19.300
Nickel	<0.005	<0.005	0.017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate	2.60	0.04	1.53	1.68	2.96	2.03	2.43	0.03	0.03
Lead	<0.005	<0.005	0.048	<0.005	0.008	<0.005	<0.005	<0.005	<0.005
Phosphorus, total	<0.02	0.02	0.39	<0.02	0.09	<0.02	<0.02	0.04	0.04

RESULTS OF ROUND 4 SAMPLING

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results are in ppm except as noted)

	MW-9	MW-11	MW-14s	MW-14d	MW-15s	MW-16s	MW-16d	MW-17s	MW-17d
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.025	<0.025	0.070	<0.025	0.026	<0.025	<0.025	<0.025	<0.025
T.D.S.	472	580	188	540	388	423	322	533	376
C.O.D.	<10	<10	21	<10	49	<10	<10	<10	<10
ph-lab (1) (2)	7.31	7.43	8.29	7.52	7.41	7.41	7.54	7.24	7.45
Conductivity-lab (1) (3)	570	625	504	551	521	521	481	908	550
T.O.C. (1)	<1	<1	1	<1	8.75	<1	<1	<1	<1
T.O.X. (1) (4)	10.5	122.0	199.0	<10	<10	<10	<10	25.5	19.5
Coliform (10)	67,000	<2	20	3	19	540	<2	<2	<2
Alachlor (LASSO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<0.2	<0.3	<0.2	<0.2	<0.2	<0.3	<0.2	<0.2	<0.2
2,4,5-TP, Silvex (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
VOC's (4)	--	ND	ND	--	--	ND	ND	--	--
Bromoform	--	--	--	2.4	--	--	--	--	--
Acetone	12.0	--	--	--	120.0	--	--	17,700	--
2-Propanol	4,000.0	--	--	--	--	--	--	45,000-	578.0
1,1,1 Trichloroethane	--	--	--	--	7.0	--	--	--	--
Trichloroethene	--	--	--	1.0	--	--	--	--	--
1,1 Dichloroethane	--	--	--	--	1.1	--	--	--	--
Gross Alpha (5)	<1	<1	12	9	18	8	3	<1	<1
Gross Beta (5)	6	2	57	7	42	10	2	2	<1
Uranium (13)	0.0011	0.0002	0.028	0.025	0.18	0.018	0.0008	0.0026	0.0006

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RESULTS OF ROUND 4 SAMPLING

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results are in ppm except as noted) (Cont'd)

	MW-18s	MW-18d	MW-20s	MW-20d	SW-2	OS-1	HK-15d	OS-2	OS-3
Chloride	16.0	3.0	22.0	19.0	32.0	23.0	23.0	23.0	24.0
Iron	10.500	0.725	0.086	1.410	<0.050	<0.050	3.080	<0.050	1.100
Manganese	0.379	0.078	0.032	0.230	0.144	<0.020	0.351	<0.020	0.395
Phenols	<0.005	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	6.160	4.650	10.400	8.500	270.000	10.500	7.970	251.000	10.700
Sulfate	68.0	68.0	78.0	100.0	70.0	60.0	85.0	60.0	75.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	0.200	<0.200
Calcium	155.000	91.600	88.600	97.700	104.000	90.900	117.000	99.500	94.500
Cadmium	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium									
-Total	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.051	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Fluoride	0.40	0.35	0.24	0.20	0.20	0.35	0.17	0.21	0.23
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	2.740	0.582	2.540	1.900	2.660	2.570	1.480	3.120	2.390
Magnesium	40.700	33.700	19.500	27.900	28.100	20.100	24.800	22.800	21.300
Nickel	0.011	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate	0.80	0.05	4.08	0.08	2.39	3.04	0.03	3.04	0.02
Lead	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus, total	0.22	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02

RESULTS OF ROUND 4 SAMPLING

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results are in ppm except as noted) (Cont'd)

	MW-18s	MW-18d	MW-20s	MW-20d	SW-2	OS-1	HK-15d	OS-2	OS-3
Selenium	0.003	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	0.055	<0.025	<0.025	<0.025	<0.025	0.202	0.200	0.078	<0.025
T.D.S.	410	440	372	411	426	369	456	403	408
C.O.D.	<10	<10	<10	<10	<10	<10	<10	40	<10
pH-lab (1) (2)	7.33	7.34	7.38	7.45	7.24	7.40	7.31	7.47	7.40
Conductivity-lab (1) (3)	568	565	551	560	666	541	629	568	589
T.O.C. (1)	<1	<1	<1	<1	<1	<1	<1	<1	<1
T.O.X. (1) (4)	<10	<10	<10	12.6	<10	<10	<10	15.3	<10
Coliform (10)	25	6	<2	65	<2	480	<2	<2	<2
Alachlor (LASSO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,4,5-TP, Silvex (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
VOC's (4)	ND	ND	ND	ND	ND	--	NA	NA	NA
1,1,1 Trichloroethane	--	--	--	--	--	8.7	--	--	--
Gross Alpha (5)	<1	22	<1	<1	<1	20	<1	16	8
Gross Beta (5)	<1	12	3	4	4	43	1	60	2
Uranium (13)	0.0014	0.0020	0.0005	0.0008	0.0006	0.20	0.0002	0.28	0.031

	Standards		
	Primary (6)	Secondary (7)	Recommended (14)
Chloride	---	250	---
Iron	---	0.3	---
Manganese	---	0.05	---
Phenols	---	---	0.001
Sodium	---	---	---
Sulfate	---	250	---
Silver	0.05	---	---
Arsenic	0.05	---	---
Barium	1.0	---	---
Calcium	---	---	---
Cadmium	0.010	---	---
Cyanide	---	---	0.05
Chromium			
- Total	0.05	---	---
- Hexavalent	---	---	---
Copper	---	1.0	---
Fluoride	1.4-2.4	---	---
Mercury	0.002	---	---
Potassium	---	---	---
Magnesium	---	---	---
Nickel	---	---	---
Nitrates	10.0	---	---
Lead	0.05	---	---
Phosphorus, total	---	---	---
Selenium	0.01	---	---
Zinc	---	5.0	---
T.D.S.	---	500	---
C.O.D.	---	---	---
pH-lab (1) (2)	---	6.5-8.5	---
Conductivity-lab (1) (3)	---	---	---
T.O.C.	---	---	---
T.O.X.	---	---	---
Coliform (10)	1	---	---
Lindane (4)	4	---	---
Endrin (4)	0.2	---	---
Methoxychlor (4)	100	---	---
Toxaphene (4)	5	---	---
2,4-D (4)	10	---	---
2,4,5-TP, Silvex (4)	10	---	---
VOC's (4)	---	---	---
Gross Alpha (5)	15	---	---
Gross Beta (5)	30 (11)	---	---
Radium, Total (5)	5 (9)	---	---
Radionuclide Scan (5) (12)	---	---	---

NOTES

ND	Not Detected
NA	Not Analyzed
(1)	Average of four tests
(2)	pH results in standard units
(3)	Conductivity results in umhos/cm
(4)	Concentrations reported in ppb
(5)	Results in pCi/l
(6)	Taken from 40 CFR Part 141 National Interim Primary Drinking Water Regulations - Subpart B - Maximum Contaminant Levels, July 1, 1984.
(7)	Taken from 40 CFR Part 143 National Secondary Drinking Water Regulations - Section 143.3 - Secondary Maximum contaminant Levels.
(8)	High counts did not yield any individual elements using a 4096 channel analyzer. These levels are due to solids only in the samples.
(9)	Standard is for Radium -226 Plus Radium -228
(10)	Reported in per 100 ml
(11)	Maximum Permissible Activity taken from World Health Organization, 1970 European Standards. National Primary Drinking Water Regulation for gross beta is 4 mR/year.
(12)	Radionuclide Scan includes analysis for K-40, Unat, Th-228, Th-230, Th-232, Tc-99 Cs-137, Sr-90, Ru-106, Np-237, Pu-238, Pu-239, Pu-240.
(13)	WMCO Split Sample - Analyzed for Uranium at the FMPC; Results in mg/l.
(14)	Taken from World Health Organization European Standards, 1970.
(15)	VOC's detected in MW-19d.

COMPOUND	RESULT
Trichlorofluoromethane	15.7 ug/l
1,1-Dichloroethene	22.9 ug/l
2-Propanol	4000.0 ug/l
Trans-1,2-Dichloroethene	37.6 ug/l
Chloroform	41.6 ug/l
1,1,1-Trichloroethane	27.5 ug/l
1,2-Dichloroethane	29.3 ug/l
Carbon tetrachloride	10.5 ug/l
Benzene	18.5 ug/l
Trichloroethene	58.1 ug/l
Bromodichloromethane	22.0 ug/l
Toluene	28.5 ug/l
Dibromochloromethane	14.6 ug/l
Tetrachloroethene	36.3 ug/l
Bromoform	34.1 ug/l

RESULTS OF ROUND 5 SAMPLING

3.1 Shallow (Till) Groundwater Sampling Results (FMPC)

(All results in ppm except as noted)

	MW-12	(DUP) MW-12	MW-19TP	MW-20TP	MW-21TP	MW-22TP	OS-1A
Chloride	93.0	104.0	562.0	3.0	14.0	13.0	30.0
Iron	6.070	11.600	2.550	7.060	0.948	1.970	<0.050
Manganese	0.158	0.228	1.230	0.872	2.090	0.690	0.033
Phenols	0.016	<0.005	<0.005	0.018	0.006	<0.005	0.008
Sodium	226.000	255.000	135.000	4.510	13.800	14.800	33.300
Sulfate	9.0	5.0	480.0	60.0	250.0	1050	120.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.0025	<0.005	0.003	0.004	0.004	<0.0025	<0.0025
Barium	<0.200	<0.200	<0.200	<0.200	0.235	<0.200	<0.200
Calcium	34.200	48.700	379.000	110.000	154.000	391.000	149.000
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Chromium							
-Total	0.008	0.011	0.005	0.007	<0.005	<0.005	<0.005
-Hexavalent	<0.008	<0.010	<0.005	<0.007	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	0.032	<0.025	<0.025	<0.025
Fluoride	1.18	1.04	0.24	0.21	0.50	0.52	0.30
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	15.800	16.700	1.610	2.200	1.490	5.770	32.600
Magnesium	8.900	10.900	121.000	36.900	70.000	118.000	48.000
Nickel	<0.005	0.010	<0.005	<0.005	<0.005	0.008	<0.005
Nitrates	<0.02	<0.02	<0.02	<0.02	<0.02	1.24	4.40
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus	<0.02	<0.02	0.07	0.13	0.04	0.07	0.03

RESULTS OF ROUND 5 SAMPLING

3.1 Shallow (Till) Groundwater Sampling Results (FMPC)

(All results in ppm except as noted)

	MW-12	(DUP) MW-12	MW-19TP	MW-20TP	MW-21TP	MW-22TP	OS-1A
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	0.056	0.032	<0.020	0.123	<0.020	0.030	0.034
T.D.S	592	672	2,736	448	928	2,390	662
C.O.D.	17	15	17	12	11	13	<10
pH (1)(2)	7.81	7.81	6.73	7.08	7.18	7.02	7.12
Conductivity (1)(3)	877	974	2520	596	969	2020	1040
T.O.C. (1)	<1	2.50	5.5	2	3	3.75	1.75
T.O.X. (1)	<10	<10	<10	<10	<10	37.5	16.08
Coliform (7)	<2	<2	<2	1,400	<2	8	18
Alachlor (4)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D(4)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4,5-TP, Silvex (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOC's							
Acetone (4)	84.4	694.0					
Cloroethene (4)			0.8				
Cyclohexane (4)	15.0	10.2					
cis-1,2-Dichloroethene (4)			25.8				
1.1 Dichloroethane (4)			15.5				
Gross Alpha (5)	<1	<1	27	2	100	296	<1
Gross Beta (5)	11	7	102	8	640	998	28
Radium (5)	<1	<1	<1	<1	<1	<1	<1
Uranium, (11)	0.0005		0.9	0.019	3.76	5.42	0.0019

RESULTS OF ROUND 5 SAMPLING

3.2 Sand and Gravel Aquifer
Groundwater Sampling Results Inside Production Area (FMPC)
(All results in ppm except as noted)

	MW-1s	MW-1d	MW-3	MW-4	MW-5	MW-8s	MW-8d	MW-10	MW-13s	MW-13d
Chloride	14.0	19.0	23.0	30.0	15.0	18.0	10.0	83.0	25	65.0
Iron	4.710	2.150	1.420	1.620	2.510	5.810	2.220	0.289	2.57	6.710
Manganese	0.345	0.552	0.405	0.023	0.487	0.547	0.357	4.000	0.194	0.380
Phenols	0.011	0.015	0.009	<0.005	<0.005	<0.005	0.011	0.023	<0.005	0.007
Sodium	15.100	10.600	10.800	12.200	8.340	10.600	9.900	129.000	12.8	47.600
Sulfate	76.0	10.0	88.0	84.0	76.0	20.0	9.0	52.0	112.000	310.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.005	<0.0025	<0.0025	<0.0025	<0.005	<0.013	<0.005	<0.005	<0.0025	<0.0025
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	88.500	98.600	85.000	86.900	106.000	24.200	82.500	354.000	108.000	202.000
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium										
-Total	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Fluoride	0.24	0.21	0.21	0.19	0.26	0.05	0.21	0.19	0.340	0.42
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	0.936	2.680	2.560	2.990	3.000	2.660	1.170	21.200	2.190	4.560
Magnesium	25.000	26.500	25.000	22.600	28.400	24.800	21.700	65.000	27.900	65.000
Nickel	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrates	<0.02	<0.02	<0.02	1.42	<0.02	<0.02	<0.02	118.00	0.510	<0.02
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	0.009	<0.005	<0.005	<0.005	<0.005
Phosphorus	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

RESULTS OF ROUND 5 SAMPLING

3.2 Sand and Gravel Aquifer
Groundwater Sampling Results Inside Production Area (FMPC)
(All results in ppm except as noted)

	MW-1s	MW-1d	MW-3	MW-4	MW-5	MW-8s	MW-8d	MW-10	MW-13s	MW-13d
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.020	<0.020	<0.020	<0.020	<0.020	0.040	<0.020	<0.020	<0.020	<0.020
T.D.S.	468	384	420	415	532	233	372	2488	488	916
C.O.D.	<10	<10	<10	<10	<10	12	<10	<10	<10	<10
pH (1)(2)	7.48	7.37	7.49	7.49	7.36	7.71	7.42	6.97	7.36	7.13
Conductivity (1)(3)	577	549	524	535	614	300	463	2,280	636	1,130
T.O.C. (1)	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.50
T.O.X. (1)	<10	<10	<10	<10	12	<10	<10	<10	<10	<10
Coliform (7)	<2	<2	46	12	19	<2	<2	<2	<2.0	<2
Alachlor (4)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4,5-TP, Silvex (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOCs										
Acetone (4)		15.6		580.0		40.0	21.3	10,000	1800	34.2
Cyclohexane (4)		20.0		600.0		22.0	12.0	5,000.0	300	
Gross Alpha (5)	<1	3	<1	1	<1	<1	<1	3	<1	2
Gross Beta (5)	4	<3	4	3	3	<3	29	24	3	6
Uranium (11)	0.013	0.0001	0.0043	0.0074	0.0062	0.0011	0.0011	0.019	0.0013	0.017
Radium (5)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

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RESULTS OF ROUND 5 SAMPLING

3.2 Sand and Gravel Aquifer
Groundwater Sampling Results Inside Production Area (FMPC)
(All results in ppm except as noted)

	MW-19s	MW-19d	MW-21s	MW-22s
Chloride	58.0	43.0	46.0	70.0
Iron	<0.050	<0.050	0.119	0.163
Manganese	<0.015	1.850	0.016	<0.015
Phenols	0.027	0.041	0.015	0.022
Sodium	33.900	51.200	51.000	29.400
Sulfate	116.0	290.0	88.0	96.0
Silver	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.0025	<0.0025	<0.0025	<0.005
Barium	<0.200	<0.200	<0.200	<0.200
Calcium	146.000	187.000	189.000	134.000
Cadmium	<0.001	<0.001	<0.001	<0.001
Cyanide	<0.005	<0.005	<0.005	<0.005
Chromium				
-Total	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.005	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025	<0.025
Fluoride	0.23	0.14	0.20	0.58
Mercury	<0.0002	<0.0002	<0.0002	<0.0002
Potassium	6.660	7.020	10.000	4.860
Magnesium	34.400	23.300	23.900	41.400
Nickel	<0.005	0.006	<0.005	<0.005
Nitrates	44.40	3.22	63.00	40.00
Lead	<0.005	<0.005	<0.005	<0.005
Phosphorus	<0.02	<0.02	<0.02	<0.02

RESULTS OF ROUND 5 SAMPLING

3.2 Sand and Gravel Aquifer

Groundwater Sampling Results Inside Production Area (FMPC)

(All results in ppm except as noted)

	MW-19s	MW-19d	MW-21s	MW-22s
Selenium	<0.0025	<0.0025	<0.0025	<0.0025
Zinc	<0.020	<0.020	<0.020	<0.020
T.D.S.	900	968	1,040	904
C.O.D.	<10	<10	<10	<10
pH (1)(2)	7.33	7.05	7.29	7.31
Conductivity (1)(3	1,040	1,090	1,100	1,060
T.O.C. (1)	<1	<1	<1	<1
T.O.X. (1)	12.25	<10	<10	<10
Coliform (7)	<2	<2	<2	<2
Alachlor (4)	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0
2,4,5-TP- Silvex	<0.5	<0.5	<0.5	<0.5
Gross Alpha (5)	16	4	51	3
Gross Beta (5)	559	17	1,560	72
Uranium (11)	0.0018	0.067	0.0018	0.0042
Radium (5)	<1	<1	2	<1

RESULTS OF ROUND 5 SAMPLING

TABLE 3.3

GROUNDWATER SAMPLING RESULTS PLANT PRODUCTION WELLS (FMPC)
(ALL RESULTS IN PPM EXCEPT AS NOTED)

	P - 1	P - 2	P - 3
Chloride	36.0	23.0	14.0
Iron	5.870	3.520	2.590
Manganese	0.422	0.378	0.392
Phenols	0.006	0.013	0.019
Sodium	38.900	16.000	7.100
Sulfate	120.0	28.0	48.0
Silver	<0.030	<0.030	<0.030
Arsenic	<0.0025	0.003	0.003
Barium	<0.200	<0.200	<0.200
Calcium	130.000	99.400	92.400
Cadmium	<0.001	<0.001	<0.001
Cyanide	<0.005	<0.005	<0.005
Chromium			
- Total	<0.005	<0.005	<0.005
- Hexavalent	<0.005	<0.005	<0.005
Copper	<0.025	<0.025	<0.025
Fluoride	0.16	0.20	0.17
Mercury	<0.0002	<0.0002	<0.0002
Potassium	4.610	1.800	1.750
Magnesium	35.700	27.700	21.600
Nickel	<0.005	<0.005	<0.005
Nitrate	<0.02	<0.02	<0.02
Lead	<0.005	<0.005	<0.005
Phosphorus	0.09	0.11	0.06

RESULTS OF ROUND 5 SAMPLING

TABLE 3.3 (Continued)

GROUNDWATER SAMPLING RESULTS PLANT PRODUCTION WELLS (FMPC)
(ALL RESULTS IN PPM EXCEPT AS NOTED)

	P-1	P-2	P-3
Selenium	<0.0025	<0.0025	<0.0025
Zinc	<0.020	<0.020	<0.020
T.D.S.	677	504	376
C.O.D.	<10	<10	<10
pH (1)(2)	7.38	7.51	7.38
Conductivity (1)(3)	907	635	536
T.O.C. (1)	<1	<1	<1
T.O.X. (1)	<10	<10	<10
Coliform (7)	<2	<2	<2
Alachlor (4)	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0
2, 4, 5-TP, Silvex (4)	<0.5	<0.5	<0.5
Gross Alpha (5)	<1	<1	<1
Gross Beta (5)	5	4	<3
Radium (5)	<1	<1	<1
Uranium (11)	0.0023	0.0011	0.0003

RESULTS OF ROUND 5 SAMPLING

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results in ppm except as noted)

	MW-9	MW-11	MW-14s	MW-14d	MW-15s	MW-15d	MW-16s	MW-16d	MW-17s	MW-17d
Chloride	20.0	18.0	19.0	21.0	20.0	24.0	23.0	25.0	34.0	22.0
Iron	0.188	2.280	0.813	<0.050	2.120	2.570	6.180	<0.050	13.900	1.430
Manganese	0.070	0.179	<0.015	<0.015	0.060	0.326	0.214	<0.015	0.635	0.305
Phenols	<0.005	<0.005	0.016	0.011	<0.005	0.016	<0.005	<0.005	0.005	<0.005
Sodium	11.800	9.800	11.400	12.700	11.200	7.090	14.200	10.900	9.000	8.900
Sulfate	80.0	88.0	72.0	72.0	56.0	92.0	76.0	64.0	112.0	84.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.003	0.003	<0.025	0.006	<0.0025
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	81.800	97.200	83.500	79.300	89.300	98.000	114.000	83.600	207.000	94.600
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium										
-Total	<0.005	<0.005	0.008	<0.005	<0.005	<0.005	0.009	<0.005	0.024	<0.005
-Hexavalent	<0.005	<0.005	<0.008	<0.005	<0.005	<0.005	<0.009	<0.005	<0.010	<0.005
Copper	<0.025	<0.025	0.065	<0.025	<0.025	<0.025	0.044	<0.025	0.080	<0.025
Fluoride	0.22	0.24	0.32	0.21	0.46	0.28	0.43	0.21	0.18	0.14
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002
Potassium	2.230	1.080	3.490	2.540	3.610	1.700	4.070	2.300	4.290	2.100
Magnesium	23.300	27.900	22.300	21.000	24.000	26.900	34.900	24.200	64.000	21.100
Nickel	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	0.009	<0.005
Nitrate	1.54	<0.02	1.56	1.53	1.79	<0.02	1.90	2.42	<0.02	<0.02
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	<0.005
Phosphorus	<0.020	<0.02	0.09	0.03	0.24	<0.02	0.08	<0.02	<0.02	<0.02

RESULTS OF ROUND 5 SAMPLING

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results in ppm except as noted)

	MW-9	MW-11	MW-14s	MW-14d	MW-15s	MW-15d	MW-16s	MW-16d	MW-17s	MW-17d
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.013	<0.0025	<0.0025
Zinc	<0.020	<0.020	0.049	<0.020	<0.020	0.073	0.074	<0.020	0.088	<0.020
T.D.S.	344	378	423	404	392	398	400	380	558	428
C.O.D.	<10	<10	<10	<10	14	<10	<10	<10	<10	<10
pH (1)(2)	7.60	7.50	7.59	7.69	7.60	7.46	7.58	7.58	7.31	7.33
Conductivity (1)(3)	493	579	493	493	487	524	528	493	699	524
T.O.C. (1)	<1	<1	2	1.25	<1	<1	<1	<1	<1	<1
T.O.X. (1)	<10	<10	<10	13.0	19.30	<10	<10	<10	<10	<10
Coliform (7)	4,200	8	<2	<2	<2	<2	<2	<2	<2	<2
Alachlor (4)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2, 4-D (4)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2, 4, 5-TP- Silvex (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOC's										
Acetone (4)	29.8				104.0		930.0	40.8		1,040
Cyclohexane (4)	10.2				20.0			60.0		5,000
1,1,1 Trichloroethane (4)					18.9					
1,1 Dichloroethane (4)					2.3					
Gross Alpha (5)	2	<1	10	5	27	<1	4	<1	<1	<1
Gross Beta (5)	9	3	19	14	50	3	6	7	6	3
Radium (5)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Uranium (11)	0.0021	0.0008	0.085	0.038	0.2	0.0003	0.02	0.01	0.0051	0.0008

RESULTS OF ROUND 5 SAMPLING

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results in ppm except as noted)

	MW-18s	MW-18d	MW-20s	MW-20d	SW-2	OS-1	OS-2	(DUP) OS-2	OS-3
Chloride	15.0	4.0	22.0	21.0	31.0	31.0	24.0	23.0	26.0
Iron	34.700	22.900	0.166	1.230	0.110	<0.050	<0.050	<0.050	1.280
Manganese	1.090	0.783	0.034	0.187	0.167	<0.015	<0.015	<0.015	0.348
Phenols	0.008	<0.005	<0.005	<0.005	<0.005	0.008	0.018	0.019	<0.005
Sodium	4.280	5.060	9.400	9.200	15.300	19.700	11.800	12.200	10.900
Sulfate	52.0	68.0	72.0	88.0	72.0	60.0	64.0	60.0	64.0
Silver	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Arsenic	0.023	0.010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.003
Barium	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Calcium	141.000	98.700	82.600	93.100	93.600	94.200	95.500	88.600	89.300
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium									
-Total	0.011	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
-Hexavalent	<0.010	<0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.039	0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Fluoride	0.26	0.29	0.36	0.22	0.21	0.59	0.24	0.27	0.26
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.0002
Potassium	1.750	0.784	3.090	2.300	2.630	3.170	3.620	3.640	2.930
Magnesium	35.500	37.600	21.500	23.400	28.700	27.000	22.200	22.800	22.800
Nickel	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate	2.53	<0.02	2.51	<0.02	2.36	2.83	2.40	2.32	<0.02
Lead	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Phosphorus	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

RESULTS OF ROUND 5 SAMPLING

3.4 Sand and Gravel Aquifer
Groundwater Sampling Results Outside Production Area (FMPC)
(All results in ppm except as noted)

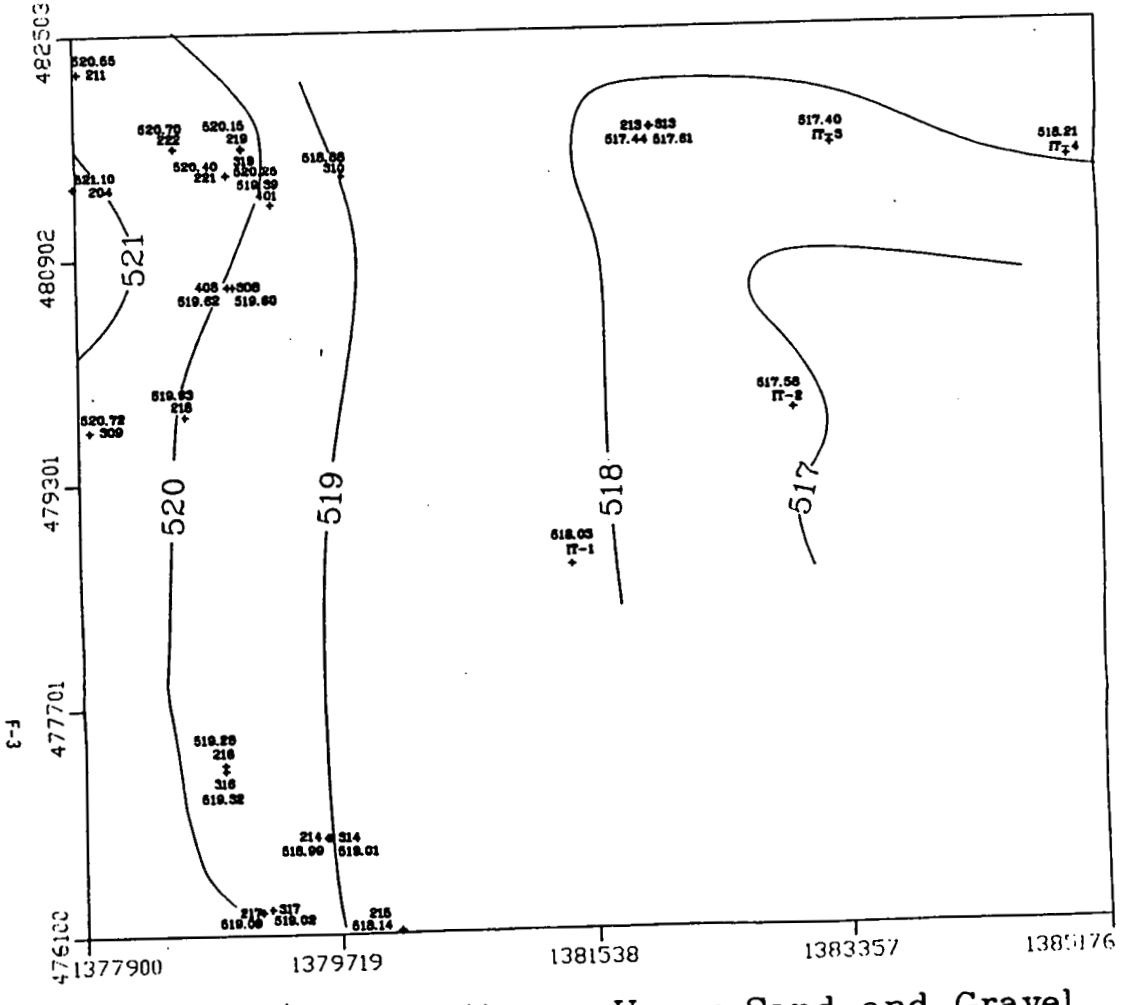
	MW-18s	MW-18d	MW-20s	MW-20d	SW-2	OS-1	OS-2	(DUP) OS-2	OS-3
Selenium	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.013
Zinc	0.052	0.074	<0.020	<0.020	<0.020	0.148	0.051	0.045	<0.020
T.D.S.	444	423	388	454	400	408	396	419	431
C.O.D.	<10	<10	<10	<10	<10	<10	<10	<10	<10
pH (1)(2)	7.39	7.31	7.41	7.37	7.39	7.46	7.47	7.45	7.42
Conductivity (1)(3)	588	585	547	553	597	570	529	528	575
T.O.C.(1)	1	<1	<1	<1	<1	<1	<1	<1	<1
T.O.X. (1)	<10	<50	<10	<10	26.50	<10	<10	<10	<10
Coliform (7)	<2	<2	3	<2	<2	37	<2	<2	<2
Alachlor (4)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Lindane (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor (4)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D (4)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4,5-TP- Silvex (4)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOC's									
Acetone (4)	24,500.0				30.8	34.2		40.5	
Cyclohexane (4)	900.0				12.0		42	12.5	
1,1,1 Trichloroethane (4)							87		
Gross Alpha (5)	<1	<1	<1	<1	<1	29	42	43	3
Gross Beta (5)	<3	4	16	4	4	30	87	69	18
Radium (5)	<1	<1	<1	<1	<1	<1	<1	<1	<1
Uranium (11)	0.001	0.0029	0.0008	0.0013	0.0	0.37	0.33	551	0.054

Table 3.5
Water Quality Standards

	Primary (9)	Secondary (10)	Recommended (11)
Chloride	---	250	---
Iron	---	0.3	---
Manganese	---	0.05	---
Phenols	---	---	0.001
Sodium	---	---	---
Sulfate	---	250	---
Silver	0.05	---	---
Arsenic	0.05	---	---
Barium	1.0	---	---
Calcium	---	---	---
Cadmium	0.010	---	---
Cyanide	---	---	0.05
Chromium			
- Total	0.05	---	---
- Hexavalent	---	---	---
Copper	---	1.0	---
Fluoride	1.4-2.4	---	---
Mercury	0.002	---	---
Potassium	---	---	---
Magnesium	---	---	---
Nickel	---	---	---
Nitrates	10.0	---	---
Lead	0.05	---	---
Phosphorous, Total	---	---	---
Selenium	0.01	---	---
Zinc	---	5.0	---
T.D.S.	---	500	---
C.O.D.	---	---	---
pH-lab (2)	---	6.5-8.5	---
Conductivity-lab (3)	---	---	---
T.O.C.	---	---	---
T.O.X.	---	---	---
Coliform (7)	1	---	---
Lindane (4)	4	---	---
Endrin (4)	0.2	---	---
Methoxychlor (4)	100	---	---
Toxaphene (4)	5	---	---
2,4-D (4)	10	---	---
2,4,5-TP, Silvex (4)	10	---	---
Gross Alpha (5)	15	---	---
Gross Beta (5)	30 (8)	---	---
Radium, Total (5)	5 (6)	---	---

Department of Energy
FMPC
Pieziometric Surface Contour Map

RCRA Ground Water Monitoring Report
Round 6
November, 1987



Water Table Elevation – Upper Sand and Gravel

Contour interval = 1 foot

Figure 2-2