



Chemical Data Report

Groundwater Study
Fall 1995
Fort Richardson, Alaska

Alaska District
U.S. Army Corps of Engineers
Geotechnical Branch
Materials and Instrumentation Section

10 May 1996

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Executive Summary

A total of sixty wells were sampled between 3 October and 27 October 1995, for the Fall 1995 portion of a continuing biannual post-wide groundwater study on Fort Richardson, near Anchorage, Alaska. All but three of the wells included in this investigation were sampled for the Spring 1995 investigation. With a few minor exceptions, the results of the two investigations are in agreement. There is, however, a general decrease in the analyte concentrations that were detected at some wells in Fall 1995 when compared to the results of the Spring 1995 investigation. Significant fuel and volatile organic compound (VOC) contamination was again detected in the groundwater at wells AP-2982 and AP-3233. Low level fuel and/or VOC contamination was also detected in wells A-6, AP-2974, AP-3222, AP-3231, AP-3235, AP-3448, AP-3453, AP-3457, AP-3458, AP-3474, AP-3476, Otter Lake and Well B (see Table A-1 or Figure 1 for well locations). Low levels of semivolatile organic compounds and chlorinated VOCs and were detected in a number of wells. No polychlorinated biphenyls, chlorinated pesticides, chlorinated herbicides or organophosphorous pesticides were detected above method reporting limits.

Chemical Data Report

1. Introduction

This chemical data report has been prepared by the Materials and Instrumentation Section of the U.S. Army Corps of Engineers, Alaska District, Geotechnical Branch (CENPA-EN-G-MI), to present the results of an investigation of groundwater quality at Fort Richardson, Alaska. The investigation was performed at the request of the Alaska District Environmental Engineering Branch, Active Installations Section (CENPA-EN-EE-AI), and the Fort Richardson Department of Public Works (DPW), United States Army, Alaska (USARAK).

This report presents the chemical data from the Fall 1995 sampling event which included the sampling of 60 wells between 3 October and 27 October 1995.

2. Background Information

2.1 Sampling Objectives: The purpose of this sampling event was to continue an ongoing postwide groundwater quality study by collecting groundwater samples for chemical analysis while simultaneously gathering data on the groundwater's pertinent physical characteristics and water table elevations at widely distributed locations on Fort Richardson.

2.1.1 Scope of Sampling - Number and Location of Wells: This latest portion of the ongoing postwide groundwater study at Fort Richardson began in October 1995, with the attempted sampling of 62 supply and monitoring wells. Sampling was completed at 60 of the wells. Twenty-six of the wells were chosen primarily because of their inclusion in previous groundwater studies (i.e., a body of chemical data existed from previous years), to fulfill regulatory obligations (e.g., the landfill wells), or to monitor areas of known groundwater contamination (the Building 987, Building 35-752, and powerplant wells). These 26 wells were sampled during the Spring and Fall of 1994, and again for the Spring 1995 sampling event. The results of the Spring 1994 sampling event were reported in a CENPA-EN-G-MI Chemical Data Report (ref. 7t, Jul 94). The Fall 1994 and

Spring 1995 results were presented in another CENPA-EN-G-MI Chemical Data Report (ref. 7v)

Because of a need for information to determine accurate groundwater gradients at Fort Richardson, a system of 34 new monitoring wells was installed across the post between August 1994 and May 1995. The locations of most of these new wells were chosen by CENPA-EN-G-SG primarily to fill gaps in the groundwater geotechnical data. This well installation effort was originally scoped to involve 28 new wells (hence the project name "28 Monitoring Wells" that appears on the soil boring logs and other project documents). CENPA-EN-G-SG installed an additional two wells to investigate the existence of groundwater at unexpected depths. At the request of DPW, another four wells were installed to investigate specific groundwater quality issues at Buildings 55955, 796, and 740.

Thirty-two of the new wells were sampled for the first time as part of the Spring 1995 sampling event, when they were sampled in conjunction with the original twenty-six wells that had been sampled during previous the investigations. Wells AP-3456 and AP-3486 were excluded from sampling due to their close proximity to other wells of similar depths.

The Fall 1995 investigation was scoped to include the sampling of all of the wells that were sampled during the Spring 1995 investigation as well as four additional wells (AP-3011, AP-3219, AP-3220 and AP-3222) which were included to more closely monitor the groundwater around the landfill. At the conclusion of the Fall 1995 sampling event, all of the wells were sampled except ADFG-E and AP-3220 which could not be sampled because of pump malfunctions and/or well recharge problems.

2.1.2 Scope of Sampling - Analytical Methods: The methods of chemical analysis used for this groundwater study were selected by DPW and CENPA (ref. 7f) to provide a broad baseline of chemical data. These analytical methods are summarized in Table A-5, of Appendix A, and include, for all wells, methods for volatile organic compounds (VOCs), gasoline range organics (GRO), diesel range organics (DRO), and total and dissolved metals. The analyses did not originally include testing for semivolatile organic compounds. Method 8270 Semivolatile Organic Compounds (SVOCs) was added to the list of analyses for the Fall 1994 sampling, in response to review comments from the U.S. EPA (ref. 7e). It became apparent from the data generated during Fall 1994 that sufficiently low

detection limits could not be achieved with Method 8270, and no useful data was being obtained with this method. CENPA-EN-G-MI made the decision to replace Method 8270 with Method 8310 Polyaromatic Hydrocarbons (PAHs) for the Spring 1995 sampling, narrowing the range of target compounds in exchange for lower detection limits. The Fall 1995 investigation utilized both analytical methods by analyzing water from all of the wells by Method 8310 and complementing Method 8310 with Method 8270 at the landfill wells.

The groundwater around Building 35752 was analyzed for polychlorinated biphenyls (PCBs) because of the PCB contamination reported in the area. Method 608 was originally requested (Spring and Fall 1994) because it was thought to attain lower detection limits than could be achieved with Method 8080. The primary laboratory actually analyzed the sample by Method 8080, and achieved lower detection limits (0.1 ppb) than the QA laboratory (0.5 ppb) who performed Method 608 as requested. Method 8080 for PCBs has since been consistently requested, in part, for the sake of consistency with the Method 8080 analysis that is required for samples collected from the landfill wells. Double sample volumes (2 liters) from the wells near Building 35752 were submitted in order to attain lower detection and reporting limits.

The landfill wells were sampled according to analyses specified for landfill monitoring wells in the State of Alaska Solid Waste Management (18 AAC 60) 1993 proposed regulations (ref. 71). It was later learned, that the earlier 1987 regulations, with a somewhat different analysis list, are still in effect. Thus the analyses performed for the landfill wells during the Fall 1995 investigation, reverted to the 1987 18 AAC 60 analysis list, in conjunction with a landfill closure study. The analyses performed for the landfill wells in Fall 1994 and Spring 1995 were inclusive of the 1987 18 AAC 60 analysis list, with the exception of Methylene Blue Active Substances and Total Kjeldahl Nitrogen.

2.2 General Geology: Fort Richardson is located primarily within an area locally referred to as the Anchorage Bowl. The Anchorage Bowl is located within the Cook Inlet-Susitna Lowland Section of the Coastal Trough Physiographic Province of Alaska, and generally is bordered by the Chugach Mountains on the east, Turnagain Arm on the south, Knik Arm on the west and the Elmendorf Moraine on the north. The Cook Inlet-Susitna

Lowlands are characterized by glacial features including ground moraines, drumlins, eskers and outwash plains. Five major glacial advances of the Quaternary Period (Pleistocene and Holocene or Recent) can be recognized in the Cook Inlet-Susitna Lowlands section. These glacial advances are discussed further in the following paragraph. Most of Fort Richardson lies less than 300 feet above sea level (refs. 7r, 7s).

The Anchorage Bowl is near the east border of a deep structural trough filled with moderately consolidated Tertiary rocks that underlie Cook Inlet and extend northeastward toward Mount McKinley. These Tertiary rocks are overlain by Pleistocene deposits as a result of repeated glacial advances during that epoch. These deposits accumulated to a thickness of 600 feet and more and appear to thicken westward from the mountain front toward Cook Inlet. They consist chiefly of three categories of material: (1) glaciofluvial deposits consisting primarily of outwash sands and gravels, (2) preglacial silty clays of estuarine-marine or lacustrine-estuarine origin (including Bootlegger Cove Clay), and (3) glacial till deposited as ground moraine. Most of the Anchorage Bowl is overlain by relatively clean coarse-grain soils derived from outwash and glacial debris deposited in front of the youngest Pleistocene glacier (Naptowne-Wisconsin) that migrated into the area. This glacier produced a large east-west end moraine (Elmendorf moraine) across Fort Richardson. Outwash from this glacier spread southward across the Anchorage Bowl and buried ground moraine and the preglacial silty clays. The thickness of the outwash is thought to be about 60 feet under most of Fort Richardson, but is not everywhere constant. The outwash thins toward the west and south away from its source and tends to become coarser toward the mountains, grading laterally into cobble and boulder sizes. The silty clays below the outwash are interbedded with silt and fine sand. The clay deposit extends to depths on the order of 200 to 250 feet within the Anchorage Bowl and "pinches-out" on the east near the Chugach Mountains and on the north near a line connecting Dishno Pond and Six-Mile Lake. Glacial till, consisting of boulders, cobbles, gravels, sand, and fine-grain soils, underlies the silty clays (where encountered) and extends to the Tertiary rock. Ground moraine of the Naptowne glaciation overlies the advance outwash of that glaciation and glacial till of the earlier Knik glaciation to the north of the Elmendorf moraine (refs. 7r, 7s).

2.3 Groundwater: Groundwater at Fort Richardson exists as a deep confined aquifer, a shallow unconfined aquifer, and discontinuous zones of perched groundwater. The Bootlegger Cove formation described above constitutes much of the confining layer that separates the confined and unconfined aquifers. Depth to groundwater ranges from near the surface along Ship Creek (see Figure 1) to greater than 250 feet below ground surface among the thicker glacial deposits found in the northern section of Fort Richardson. Lenses of silt found 20 to 40 feet below ground surface often underlie perched groundwater. Wells installed in these zones of perched groundwater often become unproductive or poorly productive after development. Water is known to recharge the groundwater system of Fort Richardson in several ways. Groundwater seeps from bedrock fractures into the sediments along the Chugach Mountains to the east. Snowmelt and rainfall infiltrate to the groundwater. Streams feed groundwater in areas where the elevation of the stream is above the water table. Discharge of the aquifers is either by groundwater flow into Knik Arm to the west, or into streams (e.g., Ship Creek, Eagle River) that ultimately discharge into Knik Arm (refs. 7r, 7s).

Groundwater within the unconfined aquifer is thought to flow in a direction trending to the northwest on the north side of Ship Creek and toward the southwest on the south side of Ship Creek. The gradient appears to flatten out considerably within the northwest portion of the study area. In the area directly adjacent to Ship Creek, the direction of flow appears to trend westward, parallel to the general downstream direction of Ship Creek. This is due to the fact that Ship Creek is a losing stream and is recharging the groundwater. The confined aquifer flow trends predominantly to the northwest. The flow directions appear to behave in the same manner throughout the study period evaluated. The unconfined and confined aquifers may merge into one unconfined aquifer within the northwest portion of the study area. The presence of an extensive zone of fine-grain soils within that area appears to play a significant role in the behavior of the unconfined aquifer. The groundwater surface of the confined aquifer nearly parallels the top of the fine-grain soil stratum. Additionally, zones of apparently perched water are present above the fine-grain soil lenses above the groundwater table.

2.4 Well Histories: Wells sampled as part of this study include active supply wells, former supply wells, test wells and piezometers, and monitoring wells. Table A-2 lists the wells sampled and summarizes information concerning these wells that is pertinent to the groundwater chemical data, such as casing depths and screened intervals. Some information on the older supply wells has not been available. Boring logs and well construction diagrams have not been provided with this report, in the interest of reducing the size of this report. Well logs and diagrams are available at CENPA-EN-G-SG. Locations of the wells are shown on Figure 1; an alphanumeric grid has been superimposed on Figure 1, and the grid locations of each well are shown in the last column of Table A-1. The sampling histories of previously-sampled wells are shown in the chemical data summary tables of Section 4.

3. Field Activities and Sampling Procedures

3.1 Summary of Field Activities: Groundwater samples for the Fall 1995 sampling event, were collected from 60 wells, beginning on 3 October and ending on 27 October 1995 (see Table A-1 for summary of wells and dates sampled, and Figure 1 for well locations). The wells were sampled by chemists Richard Ragle and Bret Walters of CENPA-EN-G-MI, with the assistance of college intern Jyl Venner and engineer-in-training Mary Jemin.

3.2 Sampling Equipment and Procedures: The groundwater sampling was performed in a manner consistent to the greatest extent possible with the Sampling and Analysis Plans (refs. 7c, 7d) and relevant technical guidance (refs. 7g, 7h, 7i, 7j, 7k). Deviations from procedures specified in the Sampling and Analysis Plans or recommended in the technical guidance are explained in Section 3.4 below.

3.2.1 Sampling Equipment: The groundwater monitoring project on Fort Richardson encompasses a number of different types of wells, and thus requires several different types of sample collection equipment. The type of equipment used at each well is specified in the Sample Summary Forms located in Appendix B.

The project has included seven active supply wells. The four Alaska Department of

Fish and Game (ADFG) hatchery wells and the two post supply wells contain large high-volume pumps and large diameter risers that make sampling directly from the well casing impractical. Water samples are collected directly from spigots mounted in steel water mains leading from the well, upflow from any chlorination equipment. ADFG-E, -F, and -K are sampled within a manifold building across Ship Creek from the hatchery, where groundwater from a number of wells is combined from individual well feeder pipes into a single water main; ADFG-9 is sampled within a concrete vault at the hatchery complex. The supply well at the Otter Lake Lodge is sampled from a spigot in a small-diameter water line in the lodge basement, upflow of the chlorination equipment. No spigot used for sampling includes an aerator.

Five of the wells sampled are former supply wells, test wells, or piezometers. Each of these has a 6-inch diameter steel casing, and contains a dedicated 4-inch single-speed submersible pump on PVC risers. A reusable custom-made Teflon and stainless-steel hose is used to direct water flow from the bronze spigot at the wellhead and collect the samples. The pumps are powered by a portable generator.

The remainder of the wells are all monitoring wells with 2- or 4-inch diameter PVC casings. Most contain dedicated 2-inch-diameter stainless-steel submersible variable-speed pumps (Grundfos RediFlo II). These pumps are mounted on rigid PVC riser or flexible polyvinyl tubing. A reusable stainless-steel and teflon sampling tube is used to direct the water flow from the wellhead, and a portable generator is used to power the pumps.

A few wells have been sampled using a bailer during one or more of the sampling events. Table 1 below summarizes the wells that have been sampled by bailer. Pumps were installed in FR-1, FR-2, FR-3, and AP-3233 during the Spring 1995 sampling event. Wells AP-2982, -2985, -3231, and -2974 are shallow, silty wells with slow recharge rates, and are considered poor candidates for pump installation. Dedicated pumps were installed in AP-3455 and AP-3457 upon development of the wells, but were removed during the Spring 1995 and Fall 1995 investigations, respectively, when it was discovered that the well's recharge rate was too slow for pump operation. The pump was also removed from TW-1 during the Fall 1995 sampling event because of the pump/riser breakage that occurred during the Spring 1995 investigation. TW-1 was purged using a portable, submersible, stainless steel pump

and sampled using a disposable teflon bailer. At wells deeper than 50 feet, such as AP-3233, FR-1, FR-2, FR-3, and AP-3455, heavy-duty reusable teflon bailers have been preferred.

Table 1

Wells That Have Been Sampled by Bailer			
Well ID	Sampling Equipment Fall 1994	Sampling Equipment Spring 1995	Sampling Equipment Fall 1995
AP-2974	Bailer	Bailer	Bailer
AP-2982	Bailer	Bailer	Bailer
AP-2985	Bailer	Bailer	Bailer
AP-3011	(not sampled)	(not sampled)	Bailer
AP-3219	(not sampled)	(not sampled)	Bailer
AP-3231	Bailer	Bailer	Bailer
AP-3233	Bailer	Pump	Pump
AP-3455	(not sampled)	Bailer	Bailer
AP-3457	(not sampled)	pump	Bailer
FR-1	Bailer	Pump	Pump
FR-2	Bailer	Pump	Pump
FR-3	Bailer	Pump	Pump
TW-1	Pump	Pump/Bailer	Pump/Bailer

3.2.2 Well Purging: Immediately prior to sampling, the wells were purged of standing, stagnant water by removing a certain quantity of water and allowing the well to recharge. For wells at which the purge water was withdrawn directly from the well casing (monitoring wells and former supply wells), a volume equivalent to three to five standing water-column volumes (as measured immediately prior to purging) was purged from the well. The standing water-column volume was calculated as follows:

$$V = (D-d) \pi r^2 [7.48 \text{ gallons} / 1 \text{ ft}^3]$$

where V = standing water-column volume (in gallons),
 D = distance from well casing top to well bottom (in feet),
 d = distance from well casing top to water table (in feet),
 r = internal radius of the well casing (in feet).

At wells with pumps, the purging was accomplished by pumping water from the wells at a moderate rate, generally 0.5 to 3.0 liters/minute. At many of the wells with new 2-inch-diameter submersible pumps, it was discovered that purging at rates of less than approximately 1 liter/minute caused the temperature of the discharged water to rise markedly; when the purge rate was increased, the water temperature decreased. At the 6-inch-diameter former supply wells, the fact that the purge volumes were extremely large (up to 1,000 gallons), and that the pumps were not variable-speed, necessitated the use of purge rates of approximately 3 to 6 gallons/minute. These large wells can be purged at relatively high rates without causing an increase in turbidity.

At wells that were purged by bailing, the bailer was lowered into the well as gently as possible, and was not lowered all the way to the bottom of the casing; these precautions were observed to minimize the disturbance of sediment in the well casing.

If the well had a very low rate of recovery and could be bailed or pumped dry, then the well was considered to be purged when it had been bailed or pumped to dryness twice. This has been an issue only at wells AP-2974, AP-3455, and FR-3 (Spring 95 only). Attempts were made to reduce the rate of purge to match the rate of well screen inflow, but this has been found to be almost impossible to put into practice in the field, especially with bailed wells.

Measurements of temperature, pH, conductivity, and oxidation-reduction potential were recorded periodically in the field log while the well was purged, to indicate when the physical characteristics of the well had stabilized. These characteristics were considered to be stable when three consecutive measurements of each non-temperature parameter agreed within 10 percent. The water temperature was considered stabilized when three consecutive

measurements were within ± 0.1 °C. Sampling proceeded only after the physical characteristics had stabilized. The final physical characteristic measurements for each well, along with purge rates and volumes, are shown on the Sample Summary Forms in Appendix B.

At the active supply wells which were in operation at the time of sampling (ADFG wells and Well 1), purging was limited to allowing water to run through the sampling spigot for several seconds before sampling. Well 3 is a standby supply well; it was allowed to purge itself of approximately three casing volumes (based upon well dimensions and flow rates provided by DPW) after activation by DPW personnel. At the Otter Lake Lodge, the well and plumbing system of the facility was purged by running water from the kitchen faucet for 15-20 minutes before sampling from a pre-chlorination system spigot in the basement.

3.2.3 Well Sampling: At wells that were sampled with a bailer, the bailer was lowered into the casing as gently as possible to avoid aeration of the water and suspension of sediment. At wells sampled by submersible pump, the flow rate was reduced to the lowest that would still provide a sustainable continuous stream of water; gapping and bubbles in the water stream, and the increased temperatures associated with very slow flow rates, were considered to be more deleterious to sample quality than the effects of sampling at flow rates higher than the EPA-recommended 100 mL/minute. The sampling flow rate was in all cases equal to or less than the purge rate for that well, and was generally within a range of 100 to 300 mL/minute for volatiles analyses (including gasoline range organics), and 300 to 800 mL/minute for the other analyses. The sampling rate for each well is provided in the Sample Summary Forms in Appendix B.

Samples were collected in the following order: volatile organic compounds and gasoline range hydrocarbons; diesel range organics; semivolatile organic compounds and other organic analyses; metals and other inorganic analyses. Samples for volatiles analyses were collected as soon after purging as possible. If well recovery was very slow, samples for volatiles analyses were collected as soon as sufficient volume was present to collect those samples. The well was then allowed to recharge as often as necessary to collect samples for the non-volatile analyses.

Samples collected for dissolved metals analysis were filtered as soon as was practical, and prior to the addition of nitric acid preservative. Filtration was accomplished by drawing the sample through a single-use 0.45 micron filter by means of a vacuum pump. The filtered water sample was dispensed into a new sample container, then preserved with acid.

3.2.4 Equipment Decontamination: Teflon sampling tubes and reusable bailers were decontaminated by rinsing sequentially with potable water, reagent-grade methanol, reagent-grade hexane, again with reagent-grade methanol, then finally with distilled water. The decontaminated equipment was sealed in plastic bags until use.

The water-level indicator was decontaminated after use at each well by wiping the tape and probe with paper towels dampened deionized water as it was reeled in, and then rinsing the head of the probe with methanol and deionized water.

3.2.5 Trip Blanks: Trip blanks to be analyzed for volatile organic compounds and gasoline range organics were prepared by the primary laboratory. Trip blanks were carried to the field with the sample containers, and submitted to the laboratory as blind samples. One set of trip blanks was included in each cooler containing samples for volatile organics or gasoline range organics analysis. The results of the analyses of trip blanks are discussed in Section 4.8.

3.2.6 Rinsates: Equipment rinsates were prepared to demonstrate that reusable sampling equipment was properly decontaminated prior to each use. Deionized water obtained from the primary laboratory was allowed to flow over and through decontaminated sampling equipment, and then collected in appropriate sample containers. At least one rinsate blank and duplicate were prepared for each type of sampling equipment that was used (namely, the teflon sampling tubes and reusable bailers), and for each analytical method, with the exception of dissolved metals, biological oxygen demand, and turbidity. The rinsates were submitted as blind samples. The results of the analyses of rinsates are discussed in Section 4.9.

3.2.7 Investigation-Derived Waste: Purge water from most wells was containerized in steel drums or sealable plastic buckets and turned in to the DPW Hazardous Materials Storage Facility at Building 45-125, Fort Richardson. When the results of chemical analysis were available, the levels of contamination in the containerized water were

compared to discharge limits allowed by Fort Richardson's wastewater discharge permit with the Municipality of Anchorage. A memorandum to DPW will be prepared recommending methods of disposal of the containerized water. Purge water from the large former supply wells was discharged onto the ground in the vicinity of the well, with the agreement of the project engineering manager.

3.3 Summary of Observations: Observations pertinent to the sampling of each well (appearance, odor, purging and sampling flow rates, measurements of temperature, pH, conductivity, oxidation-reduction potential) are recorded on Sample Summary Forms in Appendix B.

3.4 Problems Encountered: Problems encountered during the two sampling events that may have a bearing on sample quality or interpretation are discussed below.

3.4.1 Cooler Temperatures: Some difficulty in maintaining temperatures of sample coolers within the EPA-mandated range of 2 to 6 °C was encountered. The great majority of samples were stored overnight at 2 to 4 °C in a CENPA-EN-G-MI refrigerator, then packed in coolers with ice the next morning for the fifteen-minute drive to the Columbia Analytical Services, Inc. (CAS), laboratory in Anchorage. The likelihood that the sample temperatures could have deviated substantially from the required range during that brief time is extremely small. Furthermore, the temperatures of both the cooler and the enclosed temperature blank, were reported for several sample coolers. Large temperature discrepancies were noted between the coolers and the temperature blanks inside them. These discrepancies clearly demonstrate that the temperatures inside the coolers had not reached equilibrium. Samples analyzed at CAS in Anchorage are not considered compromised. One cooler containing VOC samples arrived at the CAS laboratory in Kelso, Washington at 7 °C. This small temperature discrepancy is not believed to have significantly impacted the quality of the data.

3.4.2 Pump Flow Rates and Temperatures: The major field problem encountered during this investigation involved the 32 newly installed monitoring wells. All these wells had 2-inch diameter PVC casings and were fitted with 2-inch submersible

stainless-steel pumps (Grundfos "RediFlo II"). It was discovered that when these pumps were operated at speeds sufficiently low to generate an EPA-recommended purge flow rate of 0.2 to 0.3 liters/minute, the temperature of the discharged water would rise by approximately 2 °C or more over the course of purging. The submersible pumps are cooled and lubricated by the flow of water generated by the pump's action, so it is logical that the pumps would heat up somewhat at low operating speeds, especially within deep wells. Such a large increase in temperature, however, was unexpected. Technical service representatives of the pump's manufacturer were consulted, but could shed no insight on the problem. It was discovered by trial-and-error that operating the pumps at 1 to 3 liters/minute generally moderated or reversed the temperature increases. For sampling, the flow rate was often ramped up to a higher flow in order to reduce the discharge temperature to the originally noted temperature (or as low as possible), then dropped quickly to the slowest sustainable flow. The samples for VOCs and GRO were then collected as quickly as possible before the temperature began to increase again. This temperature increase issue was not seen in Fall 1994 among the handful of wells sampled by pump during that sampling event; most of those wells have 4-inch or larger diameter casings and a different model of pump.

A similar issue affecting pumped wells concerns the minimum flow rate that can be achieved at a given well. It was found that the EPA-recommended flow rate of 0.1 liters/minute cannot be obtained by many of the pumps. The degree of control over the pump speed and the corresponding flow rate is limited, and at many pumps the lowest rate of continuous flow was well above 0.1 liters/minute. This lowest continuous flow was generally used for the collection of the VOC and GRO samples, as the "gapping" of the water stream at lower flow rates was thought to potentially have a greater negative impact on the VOC and GRO sample quality.

3.4.3 Slow-Recharge Wells: Poor well recharge rates were encountered in a handful of wells. AP-3457 was found to have a recharge rate too slow for its submersible pump to operate effectively; the pump was eventually removed, and the well was purged and sampled with a bailer. Slow recharge rates were also encountered at FR-3, AP-3452, and AP-3458, but the wells were successfully sampled by pump. After the sampling portion of the investigation began, several additional analytes were added to the proposed landfill

closure plan. As a result, several of the landfill wells had to be resampled. When AP-3010 and AP-3221 were revisited, no water could be obtained. It is believed that the recharge rate of these wells had decreased to rates below their pumps' operating range.

3.4.4 Damaged Wells: AP-2974 has a damaged housing that cannot be locked. AP-3221 was discovered to have had its entire housing pulled from the ground and stolen in Fall 1994. The well casing and pump have not been damaged, and the well can still be sampled, although it cannot be secured. The pump at TW-1 broke loose from its riser during the attempt to sample that well in Spring 1995. The 4-inch pump and its 1-inch diameter riser pipe were removed from the well prior to purging it with a portable submersible pump, and sampling it with a disposable bailer.

4. Results of Chemical Analysis

The complete tabulated chemical data are presented in Appendix C. The data are summarized in Table A-4, and are discussed in the sections below. A table of specific extraction and analytical methods used is provided in Table A-5. The discussions are organized by well type, and include comparisons of Fall 1995, and earlier data. Wells in Appendix C are arranged in alpha-numeric order.

4.1 Threshold Levels and Other Data Criteria: Table A-3 outlines Risk-Based Concentrations (RBCs), Maximum Contaminant Levels (MCLs), and Secondary Maximum Contaminant Levels (SMCLs) established for selected contaminants in *drinking water*. Since only Well 1, Well 3, and the Otter Lake well produce water for consumption, these levels are not entirely applicable to the data from most of the wells. These levels are, however, useful as points of comparison, and are used as "threshold levels" in the discussions of the data.

Maximum Contaminant Levels (MCLs) are regulatory limits established for drinking water by the U.S. Environmental Protection Agency (ref. 7n) for chemicals known or suspected to be harmful to human health. Secondary Maximum Contaminant Levels (SMCLs) are regulatory limits for chemicals that affect the aesthetic qualities of drinking

water (e.g., taste, odor, color, etc.), but pose negligible or indeterminate risk to human health at the SMCL concentration.

An RBC is a concentration of a chemical that is thought to correspond to a certain defined level of risk to human health. In this report, the RBCs cited are for a lifetime cancer risk of 10^{-6} for carcinogenic chemicals, or for a hazard quotient of 1.0 for noncarcinogenic chemicals, developed to model long-term consumption of contaminated drinking water. RBCs developed by one U.S. EPA region may differ from those developed by another region; most RBCs presented in this report are from tables developed by U.S. EPA Region III (ref. 70). Region III tables were chosen for their completeness and regular updates.

The RBC or MCL for a particular compound or analyte, whichever is lowest, is used as a very conservative "threshold value" for inclusion of a detected quantity of that chemical in Table A-4 (analytes for which only an SMCL exists are not included in Table A-4). Therefore, Table A-4, in the interest of brevity, may exclude some compounds or analytes that may be of interest, but are not considered a potential health risk at the concentrations detected (e.g., polyaromatic hydrocarbons). Such chemicals will be addressed in the text below. A number of samples contain low levels of acetone, methylene chloride, and carbon disulfide. These are common laboratory contaminants, and are flagged "B" in the Chemical Data Tables if the compound was also detected in the laboratory method blank. "B"-flagged detections of these compounds are not included in Table A-4. Low-level detections of these compounds that cannot be dismissed as laboratory contamination (i.e., are not "B"-flagged) should still be viewed with skepticism, and are not discussed below unless the concentration approaches the threshold value.

Some RBCs used as threshold levels are well below the practical detection limits for those compounds or analytes (e.g., 1,2-dibromoethane, beryllium). Conceivably, concentrations of these chemicals could exist in the groundwater above the threshold levels, but below the reporting limit of that chemical. These RBCs are flagged "x" in Table A-3. Compound- and analyte-specific method reporting limits (MRLs) may vary depending on the well and the sampling event, and are shown in the Chemical Data Tables in Appendix C.

It should also be noted that the threshold levels pertain to drinking water (which presumably would be rather low in sediment) and are perhaps best compared to the data for

dissolved metals rather than total metals. Analyses for metals of unfiltered (total) water samples quantitate both dissolved metals and metals that are suspended in the water as sediment. Calcium, magnesium, potassium, and sodium are very common constituents of the earth's crust and of groundwater, and their presence in the water samples is almost certainly due to natural sources. The high aluminum concentrations reported in many unfiltered samples are likewise due to the abundant aluminosilicate minerals that no doubt comprise much of the sediment in the sample. In the discussions below, concentrations of total aluminum will not be remarked upon; similarly, ubiquitous dissolved metals (e.g., calcium, magnesium, potassium) are generally not discussed below.

No federal or state drinking water standards exist for diesel-range organics (DRO) or gasoline-range organics (GRO). All detections of DRO and GRO are shown in Table A-4, and are discussed below. Some samples contained organic constituents that were quantitated and reported as "DRO", but may not in fact be diesel fuel. These instances are flagged in the data tables and described below.

Water Quality Standards established by the State of Alaska in 18 AAC 70 (ref. 7p) include criteria for maximum allowable concentrations of total aromatic hydrocarbons (TAH) and polycyclic aromatic hydrocarbons (termed TAqH, or "total aqueous hydrocarbons"). The applicability of these criteria to groundwater is unclear, but the chemical data will be addressed in terms of these criteria in Section 4.7.

4.2 Active Supply Wells: The ADFG wells, Wells 1 and 3, and the Otter Lake Lodge well contained no detectable quantities of GRO or PAHs. Low levels of DRO and the VOC, chloromethane (RBC of 1.4 ppb), were reported at the Otter Lake well at 0.1 ppm and 0.5 ppb, respectively. Neither had been detected in Spring 1995 or Fall 1994, furthermore, no volatile or semivolatile fuel constituents were reported in the Otter Lake samples from either of the two previous sampling events. Low levels of total and/or dissolved lead (EPA Action Level of 15 ppb) were detected at ADFG-9, ADFG-C and Otter Lake at up to 3, 4 and 2 ppb, respectively; all method reporting limits (MRLs) for lead were 2 ppb. Well 1, ADFG E, and ADFG 9 have historically shown relatively high levels of total and dissolved lead (up to 18 ppb total lead in Well 1 in May 1990, and 52 ppb total lead in

ADFG E in November 1991), but these levels appear to have declined to below 10 ppb since 1993 (ref. 7d). No Threshold Levels were exceeded at any of the active supply wells.

4.3 Former Supply Wells and Piezometers: No VOC, GRO, or PAH analytes were detected above the MRL at TW-1, A-1, A-6, AK-2127, or Well B. DRO was detected at 0.2 ppm at both A-6 and Well B. The sample result from A-6 was flagged as having been quantitated as diesel range organics, but having a chromatogram that did not resemble that of a fuel product. No volatile or PAH fuel constituents were detected in the sample. Total manganese was reported at 157 ppb at AK-2127. This concentration is above the aesthetics-based SMCL of 50 ppb but below the health-based RBC of 180 ppb; no manganese was detected in the dissolved metals sample from AK-2127. No other Threshold Levels were exceeded at any of the former supply wells or piezometers.

4.4 Original Monitoring Wells

4.4.1 Building 987 Monitoring Wells: AP-3233 and AP-3235 are monitoring wells installed in late 1993 near the site of a leaking underground fuel-line overflow tank. Table 2 below summarizes the concentrations of selected contaminants that have been reported in samples from the downgradient well, AP-3233. The contaminants in this well have also included the assortment of volatile aromatic compounds associated with fuel contamination (toluene, xylenes, naphthalene), although at concentrations below drinking water threshold levels. In Spring and Fall 1995, the polyaromatic compounds anthracene, fluorene, naphthalene and phenanthrene were detected at very low concentrations in at least one of the triplicate samples from AP-3233. Additionally, acenaphthylene, acenaphthene and flouranthene were detected in the samples from AP-3233 at very low levels in Fall 1995. Concentrations of both dissolved and total arsenic and manganese in samples collected from AP-3233 consistently exceed their respective RBCs of 0.045 and 180 ppb. During the Fall 1995 investigation, total and dissolved arsenic was detected at up to 7 and 6 ppb respectively; total and dissolved manganese were both detected at up to 1600 ppb.

Compound/Analyte	Oct 1993 (bailed)	Spring 1994 (bailed)	Fall 1994 (bailed)	Spring 1995 (pumped)	Fall 1995 (pumped)
DRO, ppm	2.0-4.2	13.6	5.0-9.2	1.4-2.0	2.0-2.1
GRO, ppm	1.6-1.8	2.28	1.7-3.0	1.8-1.9	1.4-1.5
Benzene, ppb	83-120	22	50-55J	20-22J	36-38
1,2,4-Trimethylbenzene, ppb	NT	84	116-130J	120-130J	79-94
1,2-Dichloroethane, ppb	NT	3.8	ND(1)-5J	ND(1)-2.3J	3.5-4.4
Manganese (tot/dis), ppb	NT	2030/1620	1490-1600/ 1400-1590	1480-1600/ 1460-1700	1540-1600/ 1490-1600
Lead (tot/dis), ppb	NT	17/ND(5)	ND(2)-3/ ND(2)	ND(2)/ ND(2)	ND(2)/ ND(2)

Oct 1993 sampling was not part of a post-wide groundwater study.
 ND: Not detected (value in parentheses is the Method Reporting Limit).
 NT: Parameter not tested for during this sampling event
 J: Estimated value.

Since the October 1993 sampling event, the upgradient well, AP-3235, has typically shown lower levels of contamination than AP-3233. The concentrations of DRO, GRO, and benzene at AP-3233 and AP-3235 were comparable when the wells were initially sampled, but subsequent concentrations reported in AP-3235 have decreased substantially (see Table 3, below). Low levels of acenaphthylene, a polyaromatic hydrocarbon, were detected at up to 1.4 ppb in Fall 1995. Concentrations of both dissolved and total arsenic and manganese in samples collected from AP-3235 also consistently exceed their respective RBCs. During the Fall 1995 investigation, total and dissolved arsenic were detected at up to 2 and 4 ppb respectively; total and dissolved manganese were detected at up to 440 and 420 ppb respectively.

Compound/Analyte	Oct 1993 (bailed)	Spring 1994 (bailed)	Fall 1994 (pumped)	Spring 1995 (pumped)	Fall 1995 (pumped)
DRO, ppm	4.2	4.25-8.39	0.4	0.7	0.52-0.9
GRO, ppm	1.2	0.5-0.64	0.35	0.45	0.054-0.07
Benzene, ppb	97	4.0-5.4	ND(2)	0.7J	0.8
1,2,4-Trimethylbenzene, ppb	NT	0.5J-ND(2)	ND(2)	ND(1)J	ND(1)-0.8J
1,2-Dichloroethane, ppb	NT	ND(0.9)-2.4	ND(2)	ND(0.5)J	ND(1)-0.4J
Manganese (tot/dis), ppb	NT	2200-2450/ 880-889	426/419	387/377	440/420
Lead (tot/dis), ppb	NT	28-32/ ND(2)-6	ND(2)/ ND(2)	ND(2)/ ND(2)	1J/ ND(2)

Oct 1993 sampling was not part of a post-wide groundwater study.
 ND: Not detected (value in parentheses is the Method Reporting Limit).
 NT: Parameter not tested for during this sampling event
 J: Estimated value.

The relatively high concentrations of several metals in both wells are notable. It is thought that this may be related to the presence of petroleum hydrocarbons in the groundwater and associated microbiological processes; speculation on this possibility lies outside the scope of this report.

4.4.2 Building 35-752 Monitoring Wells: AP-2982, AP-2985, and AP-3231 are monitoring wells installed in 1990 and 1993 around Building 35-752, as part of an investigation of petroleum and PCB-contaminated soils at the site of a former waste-oil underground storage tank. Of these three wells, AP-2982 has the most notable history of chemical contamination. The results for selected contaminants from the last four sampling events are displayed in Table 4, below.

Compound/Analyte	Spring 1994	Fall 1994	Spring 1995	Fall 1995
DRO, ppm	0.508	0.4-0.6	4.2-4.6	0.8-1.7
GRO, ppm	ND(0.05)	1.0-1.16	7.1-8.4	1.67-2.3
Benzene, ppb	4.5	86-120	230-335J	37-110J
1,2,4-Trimethylbenzene, ppb	ND(2)	35-40	170-275J	82-180J
1,2-Dichloroethane, ppb	1.2	ND(2)	ND(0.5)-6.9J	ND(1)-1.2J
Trichloroethene, ppb	0.6	ND(2)-1.3	3.3-4.21J	1.6-1.9J
PCBs, ppb	ND(0.1)	ND(0.1)	ND(0.5)-0.8	ND(0.1)
Manganese (tot/dis), ppb	814/815	1900-2360/ 1150-1280	3940-4500/ 4060-4900	1220-1400/ 1250-1400
Lead (tot/dis), ppb	2/ND(2)	12-20/ ND(5)-2	1.4/ND(1)	4/6

Sep 1993 sampling was not part of a post-wide groundwater study.
 ND: Not detected (value in parentheses is the Method Reporting Limit).
 J: Estimated value.

The concentrations of DRO, GRO, and benzene at this well that were reported for Spring 1995 increased dramatically from the two previous investigations. The results from Fall 1995 have dropped back down to levels roughly comparable to, but generally higher than the first two investigations.

Several VOCs were detected at AP-2982 with 1,2-dichloroethane (1.2 ppb), benzene (110 ppb) and trichloroethene (1.9 ppb) exceeding their RBCs of 0.12, 0.36 and 1.6 ppb, respectively. Similar concentrations of the same analytes have been detected in previous investigations with the Spring 1995 investigation reporting generally higher levels of contamination. Naphthalene (RBC of 15,000 ppb) and phenanthrene (no established Threshold Limit), detected at up to 16 and 0.2 ppb respectively were the only polyaromatic hydrocarbons detected above MRLs. Slightly higher concentrations of naphthalene had been detected in Fall 1994 and Spring 1995. PCBs were detected in two of three triplicate samples in Spring 1995 (0.794 and 0.804 ppb of Aroclor 1260), this is the only time PCBs have been detected in samples from this well. Concentrations of both dissolved and total arsenic and manganese in samples collected from AP-2982 consistently exceed their

respective RBCs. During the Fall 1995 investigation, total and dissolved arsenic were both detected at up to 7 ppb; total and dissolved manganese were both detected at up to 1400 ppb. The high total and dissolved arsenic and manganese concentrations again coincide with elevated DRO and GRO concentrations. The variations in the concentrations of total lead, as well as other metals that exhibit a large discrepancy between total and dissolved concentrations, are probably due to variations in the quantities of silt in the samples from this shallow, bailed well.

AP-2985 and AP-3231 have historically had much lower levels of DRO and VOC contamination than AP-2982. Both AP-2985 and AP-3231 were reported to contain 0.5 ppm DRO in Spring 1995, less than 0.2 ppm in Fall 1994, and 0.067 and 0.085 ppm, respectively, in Spring 1994. No DRO was detected in these wells in Fall 1995. The only VOC reported in AP-2985 is trichloroethene detected below its RBC (1.6 ppb) at 0.6 ppb in Fall 1995. AP-3231 has a history of detections of chlorinated hydrocarbons. Trichloroethene (1.4 ppb) and dichloroethane (2.5 ppb) were reported in Spring 1994; trichloroethene (11 ppb) in Spring 1995. Trichloroethene is the only VOC detected above its MRL in Fall 1995 at a concentration of 4.7 ppb. No polyaromatic hydrocarbons were detected in either well. No GRO or PCBs have been detected in these wells. These wells have a history of total arsenic, chromium, lead, nickel, and manganese concentrations above threshold levels, but the dissolved concentrations of these metals are always below reporting limits (with the exception of manganese in the Spring 1995 AP-2985 sample). The high total concentrations of these metals are probably due to the large quantities of silt in the samples from these shallow, hand-bailed wells. Dissolved beryllium was detected at 34 ppb in the sample from AP-3231. It is the only metal that was detected above its threshold level (0.016 ppb) in the Fall 1995 investigation. There is no history of beryllium detections in these wells.

4.4.3 Powerplant Well: AP-2974 was installed in 1990 as part of an underground storage tank investigation at the post powerplant. DRO was reported in the sample from this well at a concentration of 0.1 ppm. This well has a history of DRO levels of 1 ppm. The low levels of carbon tetrachloride, trichloroethene, and 1,2-dichloroethane (less than 1 ppb each) have been detected in samples collected from this well during previous

investigations. Carbon tetrachloride and chloroform were detected during the Fall 1995 investigation at up to 0.7 and 0.5 ppb respectively. The reported concentrations for both VOCs detected in Fall 1995 are above their respective RBCs, but below their MCLs. No total or dissolved metals concentrations exceeded a threshold level.

4.5 Landfill Wells: Eleven of the monitoring wells surrounding the Fort Richardson landfill area have been included in the post-wide groundwater study. The three oldest wells, FR-1, FR-2, and FR-3 (all installed in 1985) have a history of DRO detections, which have not been observed in any of the other landfill wells. Table 5 shows DRO concentrations at these three wells over the last six sampling events.

Well ID	Oct 92 (?)	Oct 93 (?)	Spring 94 (bailed)	Fall 94 (bailed)	Spring 95 (pumped)	Fall 95* (pumped)
FR-1	NS	NS	8.06	4.2	ND(0.1)	ND(0.1)
FR-2	1.0 x	0.30	3.14	2.6	ND(0.1)	ND(0.1)
FR-3	ND(0.5)	NS	4.02	4.8	ND(0.1)	ND(0.1)

x : Lab reported that the sample contained a phthalate-type contaminant that may have resulted in a false positive.
 (?): Sampling methodology is not known.
 NS: Not Sampled.

The chromatograms of the DRO analyses from these three wells have been very similar, and suggestive of a petroleum product heavier than diesel fuel. No volatile or semivolatile fuel constituents that would be expected to accompany these levels of fuel contamination have been detected. No DRO has been detected in samples from these wells during the last two sampling events. GRO (0.53 ppm) was reported in FR-2 in Spring 1994, but has not been reported since in any other well. Low levels of chloroform were detected in FR-1 and FR-2, and chloroform, 1,2-dibromoethane, and 1,1,2,2-tetrachloroethane were detected in the sample from FR-3 in Spring 1995. Dichlorodifluoromethane (RBC of 390 ppb), reported at 5 ppb in the sample from FR-3, is the only VOC that was detected in these

three wells in Fall 1995.

1,2-dichloroethane was reported in the samples from AP-3013, AP-3014, and AP-3015 in Spring 1994, but has not been detected during subsequent investigations. Low levels of chloromethane and/or dichlorodifluoromethane were reported in AP-3019, AP-3021 and AP-3222 in Fall 1995, at concentrations well below threshold levels.

No polyaromatic hydrocarbons, PCBs or pesticides have been detected in the landfill wells. The semivolatile compound bis(2-ethylhexyl)phthalate (RBC of 4.8 ppb) was reported in the sample from AP-3014 in Fall 1995 at 21 ppb. This contaminant has no prior history at this well, but was detected at FR-3 in Fall 1994. No other target analytes of Method 8270 were reported above MRLs in Fall 1995.

Most metals have been reported at concentrations below threshold levels in the landfill wells. Exceptions are total chromium, nickel, and manganese in AP-3221 in both Fall 1994 and Spring 1995; dissolved concentrations of these metals have been well below threshold levels. Total manganese above threshold levels was also reported in AP-3010, AP-3014, AP-3221, and FR-3 in Fall 1994, but concentrations were below threshold levels in Spring 1995. AP-3010 was reported to contain 7 ppb total beryllium in Spring 1995. No total or dissolved metal concentration at a landfill well exceeded its Threshold Level in Fall 1995.

The groundwater samples from the eight landfill wells were also analyzed by a group of miscellaneous methods required by State of Alaska solid waste management (18 AAC 60) regulations (see Section 2.1). These analyses include inorganic parameters such as nitrates, chloride, sulfate, alkalinity, and total dissolved solids, as well as total organic carbon, total recoverable petroleum hydrocarbons (TRPH), and biological oxygen demand (BOD). The results of these analyses are shown in Table 9 of Appendix C. The TRPH data essentially parallel the DRO data for the same wells. The remainder of the results are not remarkable from an environmental standpoint. Conductivity, oxidation-reduction potential, temperature, and pH (as required by 18 AAC 60) were measured in the field, and presented for each well in Appendix B.

4.6 New Monitoring Wells: Wells AP-3447 through AP-3533 were installed for

the groundwater study between August 1994 and May 1995 and were sampled for the first time in Spring 1995. Analytes detected above applicable Threshold Levels in Fall 1995 were reported in samples from four of the thirty-two monitoring wells. Chloroform was reported above its threshold level of 0.15 ppb in wells AP-3457, AP-3474, and AP-3533 at up to 0.9, 0.7 and 2 ppb respectively. Carbon tetrachloride was reported above its threshold level of 0.16 ppb in wells AP-3532 and AP-3533 at up to 1.4 and 0.8 ppb respectively. Although several other VOCs were detected at low levels in nine of the new monitoring wells, no other VOCs exceeded a Threshold Level. Fluorene (RBC of 15,000 ppb) was the only polyaromatic hydrocarbon detected above its MRL in a new monitoring well. It was reported at 0.5 ppb in AP-3458. No other VOCs or polyaromatic hydrocarbons were reported above Threshold Levels.

Low level DRO concentrations were reported in the samples from six of the new monitoring wells up to a maximum concentration of 1.3 ppm in AP-3458. The chromatogram from AP-3458 shows a small diesel fuel-range peak, and a cluster of small peaks at the low molecular weight end of the DRO integration range. Very few of the DRO chromatograms closely resemble that of the diesel standard chromatogram. Many of the chromatograms indicate the presence of one or several components which comprise the majority of the total DRO that is quantitated. Appropriate flags to indicate atypical chromatograms are included in the data tables. No GRO was reported in any of the new monitoring wells.

Total metals detected in the new monitoring wells above threshold levels were limited to total manganese, iron and thallium. Total manganese was detected in AP-3452, AP-3453, AP-3455, AP-3458 and AP-3473 at concentrations up to 773, 827, 231, 2890 and 8430 ppb, respectively. Total iron was detected in AP-3452 and AP-3453 at 16,600 and 21,200 ppb, respectively. Total thallium was detected in AP-3458 at 3 ppb. The only dissolved metal concentration to exceed a Threshold Level in a new monitoring well was the manganese concentration in the sample from AP-3458 which was reported up to 3000 ppb.

4.6.1 Site-Specific New Monitoring Wells: Unlike most of the new project monitoring wells installed between August 1994 and May 1995, AP-3530, AP-3531, AP-

3532, and AP-3533 were placed near specific buildings on Fort Richardson at the request of DPW, in order to assess potential groundwater contamination in those areas. AP-3530 and AP-3531 were placed immediately north and southeast, respectively, of Building 55955, a munitions incinerator. No VOC, GRO, DRO or PAH contamination was reported above MRLs; nor were any metals detected above Threshold Levels in the samples collected from either AP-3530 or AP-3531. AP-3532 is located approximately 120 feet north of Building 740 (a facility maintenance shop), and AP-3533 is located approximately 100 feet northeast of Building 795 (an ordnance maintenance shop). Chloroform and carbon tetrachloride were reported above Threshold Levels in AP-3533 at 2 and 0.8 ppb respectively. Carbon tetrachloride, only, was detected above its Threshold Level at 1.4 ppb in AP-3532. No DRO, GRO, or PAHs were detected and no metals were reported above their Threshold Level in either well.

4.7 Water Quality Standards: The new State of Alaska 18 AAC 70 TAH criterion (total aromatic hydrocarbons) establishes a limit of 10 ppb for the sum of the concentrations of benzene, toluene, ethylbenzene, and xylenes. The standards also require a method reporting limit of 0.2 ppb, which was not achieved for Method 8260. The TAqH criterion establishes a limit of 15 ppb for the sum of the concentrations of a substantial list of monoaromatic and polyaromatic hydrocarbons. This list of required compounds was not met entirely by Methods 8270 and 8310. The TAqH standards also require a MRL of 0.1 ppb for each compound, which was generally achieved by the Method 8310 analyses but not by the Method 8270 analyses.

Volatile compound and PAH data generated during the Fall 1995 investigation were reviewed, and the relevant compounds were summed with the awareness that the MRLs and analyte lists do not completely meet the TAH and TAqH criteria. Under these circumstances, it would appear that only the water from wells AP-2982 and AP-3233 would likely be in violation of these criteria.

4.8 Trip Blanks: Trip blanks were prepared as described in Section 3.2.5 above

for the purpose of detecting possible contamination of the field samples from external sources of volatile chemicals during collection, transport and handing of the samples. The results of the analyses of the trip blanks are summarized in Table I of the QAR (see Appendix D).

The Fall 1995 trip blanks were found to contain several common laboratory contaminants. Detections of these compounds that cannot be attributed to laboratory contamination are thought to be due to the use of contaminated water to prepare the trip blanks. A comparison of the analytes detected in the project samples and the analytes detected in the associated trip blanks indicates that the detections are, most likely, not the result of cross-contamination. A more thorough description and explanation of trip blank results, on a case by case basis, is provided in Table I of the QAR.

4.9 Rinsates: Rinsate blanks were prepared as described in Section 3.2.6 above. The results of the analyses of the rinsates are summarized in Table II of the QAR.

The rinsates collected from bailers and sampling tubes during Fall 1995 were found to contain many of the same analytes and compounds that were detected in the trip blanks. This fact reinforces the idea that contaminated deionized water was used to prepare the blanks and was the source of most of the detections in the blanks. The water used to prepare both sets of blanks was obtained from Columbia Analytical Services, Anchorage, Alaska. In the majority of instances, the detection of VOCs and GRO in the trip blanks from this project, are not indicative of cross-contamination. DRO was, however, detected in one primary rinsate blank at 0.2 ppm. This indicates that cross contamination may have occurred during sampling. The QA duplicate rinsate blank for the same sample was reported as not detected with a MRL of 0.1 ppm. A more thorough description and explanation of rinsate blank results, on a case by case basis, is provided in Table II of the QAR.

5. Data Quality Review

The complete chemical data packages, including the laboratories' internal quality control reports, are on file at CENPA-EN-G-MI. The data and associated materials were reviewed by chemists at the Corps of Engineers North Pacific Division Laboratory (CENPD-ET-EN-L), who presented their findings in the Quality Assurance Report provided in Appendix D. Data quality issues that may affect the interpretation of the data are summarized in Sections 5.2 and 5.3 below, and have led to the "flagging" of the affected data in the Chemical Data Tables.

5.1 Quality Review Overview: CENPD-ET-EN-L chemists performed an extensive set of procedures to assess the quality of the data. The initial inspection of the data screened for errors and inconsistencies. The CENPD chemist checked the instrument and analysis identification, sample description and identification, time and date of analysis, weight or volume of sample, units employed, dilutions, sample clean-up, and detection limits. The chemist then verified that the data were checked by the laboratory manager or quality assurance officer. Sample holding times, preservation, and storage were checked and noted.

The second step of the data verification process was an assessment of the laboratory's instrumentation procedures. The precise process varied depending on the method of analysis, but may have included inspection of instrument tuning, initial and continuing calibration procedures, example calculations, standard solution preparation methods, and identification criteria including quantification and confirmation of ions. Surrogate recoveries were scrutinized to ensure they fell within an acceptable range. Adequate surrogate recoveries indicate that sample extraction procedures were effective, and that overall instrument procedures were acceptable.

The next phase of data quality assessment was an examination of the actual data. By examining data from laboratory duplicates, blind duplicates, trip blanks, laboratory blanks, matrix spike samples, matrix spike duplicate samples, and field samples, the chemist can determine whether the data are of high quality.

The precision of the data was quantified by the relative percent difference (RPD)

between two results obtained for the same sample. Laboratory duplicates and matrix spike duplicates were assessed by their RPD values. High RPD values indicate a lack of reproducibility, and such data are rejected. Any such results were reported in the assessment of data quality.

Data from blank samples were examined to determine if sample contamination occurred after the sample was collected in the field. Method blanks are blank samples prepared in the laboratory and analyzed along with project samples. If analytes are detected in a method blank, it is a strong indication of laboratory contamination. This would raise the possibility that project samples were contaminated in the laboratory as well. Trip blanks are samples of pure water that accompanied the project samples from the field to the laboratory. Trip blanks accompany each shipment of water samples to be analyzed for volatile organic compounds. Analysis of the trip blanks indicated whether sample contamination occurred during shipment or storage.

The accuracy of the data was monitored by analysis of matrix spike and matrix spike duplicate sample analyses. A matrix spike sample is prepared by adding a known quantity of a certain analyte to an actual sample. The matrix spike duplicate is prepared in an identical manner. Matrix spike and matrix spike duplicates must be run at least once per every twenty samples. Recovery of the matrix spike indicates the level of accuracy of the data. Comparison of the matrix spike and matrix spike duplicate results provides another indication of data precision. Chemists at NPD examined all matrix spike and matrix spike duplicate data. Low or high spike recoveries or a high RPD for duplicates are evidence of poor accuracy or low precision; all such results are reported in the quality assurance assessment.

Laboratory data quality is summarized in the quality assurance report. In general, the project and quality assurance data were in agreement and are acceptable. Exceptions are noted in the discussion of specific test results.

A blind duplicate quality control (QC) sample was submitted to the primary laboratory, which analyzed the majority of the samples. Analysis of the QC duplicate sample provides a measure of intra-laboratory variations. QC and QA samples for analyses other than volatile organic compounds were collected by dispensing aliquots into each sample

container from each bailer collected. For each method, QA and QC replicates effectively provide triplicate analysis on approximately 10% of the project samples. QA and QC duplicates are so noted in the data tables.

Data from all replicate samples were analyzed by CENPD-ET-EN-L as part of the development of the QAR. The three results for each set were carefully compared and tabulated. Any discrepancies were noted in the QAR. If results for a given analyte did not agree within a factor of three between the replicate samples, the data were annotated. If two of three data sets agreed, each laboratory's internal QA/QC data were reassessed to determine which set of data is the most accurate. Data from related analyses may have been inspected to determine which set of data was more accurate.

5.2 Data Quality Issues: Several sample cooler temperature delinquencies are noted in the QAR. Most of the out of control cooler temperatures were recorded at CAS-Alaska. These cooler temperatures are not considered to be detrimental to quality of the data because of the short time that the samples were in the coolers. The samples are only in the coolers for the 15 minute drive from the Alaska District office to the laboratory. The large temperature discrepancies noted between the coolers and the temperature blanks inside them, clearly demonstrate that the temperatures inside the coolers had not reached equilibrium. The actual temperature of the samples is not believed to have deviated significantly from $4^{\circ} \pm 2^{\circ} \text{C}$.

One of three VOC surrogate recoveries for samples from AP-2982 and AP-3011 was above laboratory established (LE) QC limits. The VOC data of detected analytes should be considered high estimates.

Based on approximately 50% SVOC recovery, low levels of SVOCs may not have been detected in AP-3011, AP-3219, AP-3222 and FR-3.

Based on the majority of failed internal QC data, low concentrations of chlorinated herbicides may not have been detected in samples from AP-3011, AP-3014, AP-3015, AP-3219, AP-3222, FR-1, FR-2 and FR-3.

The DRO extract from AK-2127 was completely evaporated and reported as not detected. The data should not be considered usable.

Based on out of control QC data, the TRPH results for AP-3219 and AP-3222 should be considered low estimates.

The PAH sample from ADFG-K and the DRO sample from ADFG-C were received at the laboratory with lids broken. The contents were transferred to new containers, but the results should be considered low estimates.

6. Summary and Conclusions

1. Significant groundwater contamination has been identified at the following wells.

a. **AP-2982:** DRO, GRO, and VOC contamination have consistently been detected at this well. Low levels of PCBs were reported in AP-2982 in Spring 1995; no PCBs were detected in Fall 1995.

Two other nearby wells, AP-2985 and AP-3231, have shown lower concentrations of similar contaminants. Elevated manganese and arsenic concentrations were detected in all three wells.

b. **AP-3233:** DRO, GRO, and VOC levels are still significant, but appear to be declining. Lower levels are still reported at the nearby AP-3235. Dissolved manganese and arsenic above threshold levels are present at both wells.

c. **AP-3458:** The 1.3 ppm DRO detected in this well is consistent with previous detections. The DRO chromatogram from this well displays some unusual low-end peaks that are similar to some seen on the DRO chromatogram from AP-2982, a heavily contaminated well approximately 100 feet to the southeast. This suggests that the two wells may share a source of contamination. The high levels of dissolved manganese and arsenic reported in AP-3458 are also similar to those detected in AP-2982 and other petroleum-contaminated wells.

d. Substantial concentrations (greater than 1.0 ppb) of chlorinated VOCs such as trichloroethene, carbon tetrachloride, dichlorodifluoromethane or chloroform were also

detected at AP-3222, AP-3231, AP-3532 and AP-3533.

2. Low DRO levels that are inconsistently reported in several of the wells are thought to be quantitations of discrete compounds in the sample, rather than fuel product.

3. With the exception of manganese and arsenic at contaminated wells, only unfiltered groundwater samples have consistently been found to contain metals concentrations above threshold levels; no dissolved, and therefore highly mobile, lead, chromium, cadmium, beryllium, or nickel has been consistently reported in any well. While it is acknowledged that filtration is an imperfect means of distinguishing between mobile and immobile metals in groundwater, it is nonetheless thought that, in the absence of evidence of specific sources of metal contamination, virtually all the reported metals in the unfiltered samples ("total metals") are due to minerals in the silt contained in the sample. The correlation between the turbidity of the samples and the numbers and concentrations of metals detected in the unfiltered sample is very high.

The following recommendations for future post-wide groundwater sampling at Fort Richardson are offered:

1. Scaling back the number of wells sampled should be considered for future sampling efforts. With the addition of new monitoring wells to the area along Ship Creek, sampling of the former supply wells A-1, A-6, and TW-1 should probably be discontinued. These wells are constructed of old perforated iron pipe, and were never intended to serve as proper monitoring wells. No significant evidence of contamination has been detected within these wells, and it is unclear from records at what geologic interval these wells are "screened". Similar reservations exist concerning AK-2127 and Well B, but these wells are located at unique positions, and no monitoring wells now exist to replace them. Although continued sampling at these wells may be desired for other reasons, Well 1, Well 3, and the ADFG wells contribute little additional information to the environmental study.

2. Given the variety of organic compounds that have been detected, the number and types of analyses performed on samples from each well should remain approximately the same. The number of metal analytes requested could be reduced sharply, to eliminate elements like calcium and cobalt that appear to have no environmental or human-health significance.

3. 1,2-dichloroethane was detected at a several wells , future sampling efforts should include an analytical method with a reporting limit for that compound which is much closer to its RBC than that which can be achieved by Method 8260.

7. References

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- b. Memorandum CENPD-ET-P-L dated 27 Feb 95, subject: W.O. 95-508. Results of Chemical Analysis, Ft. Richardson Groundwater Study - Fall 1994.
- c. Memorandum CENPA-EN-G-MI dated 24 Mar 95, subject: Sampling and Analysis Plan, Groundwater Monitoring (Spring 1995), Fort Richardson, Alaska.
- d. Memorandum CENPA-EN-G-MI dated 8 Apr 94, subject: Sampling and Analysis Plan, Groundwater Monitoring, Fort Richardson, Alaska.
- e. Memorandum Department of Public Works, Fort Richardson, Alaska, dated 15 Sep 94, subject: EPA, ADEC, and DPW review comments on Sampling and Analysis Plan and Chemical Data Report, Groundwater Monitoring, Fort Richardson, Spring 1994.
- f. Memorandum CENPA-EN-G-MI dated 11 Feb 94, subject: Proposed Scope of Sampling, Groundwater Monitoring, Fort Richardson, Alaska.
- g. U.S. Army Corps of Engineers, Sample Handling Protocol for Low, Medium, and High Concentration Samples of Hazardous Waste, October 1986.
- h. U.S. Army Corps of Engineers, ER-1110-1-263, Chemical Data Quality Management for Hazardous Waste Remedial Activities, 1 October 1990.
- i. U.S. Army Corps of Engineers, EM 200-1-3, Requirements for the Preparation of Sampling and Analysis Plans, 1 September 1994.
- j. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Test Methods for Evaluating Solid Wastes-Final Update II, SW-846, Third Edition, January 1995.
- k. U.S. Environmental Protection Agency, Office of Solid Waste, Draft Technical Guidance: RCRA Groundwater Monitoring, November 1992.
- l. Alaska Department of Environmental Conservation, Solid Waste Management 18 AAC 60, Proposed Regulations, 7 September 1993.
- m. Alaska Department of Environmental Conservation, Solid Waste Management Regulations 18 AAC 60, October 1987.

- n. United States Code of Federal Regulations, Title 40, Part 141, Sections 11 and 12 (40 CFR 141.11 and 40 CFR 141.12).
- o. U.S Environmental Protection Agency, Region III, Risk-Based Concentration Table, July-December 1995, 20 October 1995.
- p. Alaska Department of Environmental Conservation, Water Quality Standards 18 AAC 70, (as amended through 4 January 1995).
- q. ENSR Consulting and Engineering, Sampling Report for Groundwater Monitoring Network at Fort Richardson, Alaska (Document No. 6583-061-600), January 1994.
- r. U.S. Army Corps of Engineers, Alaska District, Geotechnical Branch, Geotechnical Report for Groundwater Monitoring Network, Fort Richardson, Alaska, February 1996.
- s. U.S. Army Corps of Engineers, Alaska District, Geotechnical Branch, Geotechnical Report for Groundwater Monitoring Network, Fort Richardson, Alaska, 1991.
- t. Memorandum CENPA-EN-G-MI dated 17 July 1994, subject: Chemical Data Report, Groundwater Study (Spring 1994), Fort Richardson, Alaska.
- u. Schwartzenbach, R.P., Environmental Organic Chemistry, 1993.
- v. Memorandum CENPA-EN-G-MI dated 20 November 1995, subject: Chemical Data Report, Groundwater Study (Fall 1994 and Spring 1995), Fort Richardson, Alaska.

Appendix A

Tables

TABLE A-1
Well Sampling and Location Information
Fort Richardson Groundwater Study
Fall 1995
Page 1 of 3

Well ID	Dates Sampled	Sample Numbers	Well Location; Figure 1 Grid Square in Brackets { }
Active Supply Wells			
ADFG C	20 Oct 95	162WA	{J7} Sampled in ADFG well manifold building
ADFG E	Fall 1995	Not Sampled / Pump Failure	{J7} Sampled in ADFG well manifold building
ADFG K	20 Oct 95	164WA	{J7} Sampled in ADFG well manifold building
ADFG 9	10 Oct 95	165WA	{J7} Sampled in access vault at ADFG hatchery
Well 1	10 Oct 95	160WA	{J6} Post supply well, Bldg 35610
Well 3	24 Oct 95	159WA	{K5} Post supply well, Bldg 35630
Otter Lake	27 Oct 95	167WA	{B4} Supply well for Otter Lake Lodge
TW-1	10 Oct 95	136WA	{L4} Corner of Oil Well Rd and Hospital entrance
Former Supply Wells and Piezometers			
A-1	10 Oct 95	132WA	{K5} In woodline 150 ft west of well access rd
A-6	10 Oct 95	126WA	{K6} 100 ft west of Well 2
AK-2127	19 Oct 95	154WA	{M10} Training area south of Glenn Highway
Well B	24 Oct 95	174WA	{B9} 1000 ft NW of Roosevelt Transmitter Site
Original Monitoring Wells, Installed prior to August 1994			
AP-3233	23 Oct 95	168WA, 170WA ^{QC} , 169WA ^{QA}	{F7} 100 ft NW of Bldg 987
AP-3235	23 Oct 95	171WA, 173WA ^{QC} , 172WA ^{QA}	{F7} 50 ft SE of Bldg 987
AP-2982	13 Oct 95	144WA, 146WA ^{QC} , 145WA ^{QA}	{I6} SW corner of Bldg 35752
AP-2985	13 Oct 95	143WA	{I6} 75 ft S of Bldg 35752
AP-3231	13 Oct 95	138WA	{I6} NE corner of Bldg 35752
AP-2974	25 Oct 95	177WA	{I7} 25 ft S of Power Plant
Landfill Monitoring Wells			
AP-3010	4 Oct 95	109WA	{D9} N of Landfill, on moraine
AP-3011	16 Oct 95	112WA	{E9} E of Landfill

TABLE A-1
Well Sampling and Location Information
Fort Richardson Groundwater Study
Fall 1995
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Landfill Monitoring Wells (cont.)			
AP-3013	18 Oct 95	115WA	{E7} W of Landfill
AP-3014	3 Oct 95	104WA	{D6} W of Landfill
AP-3015	3 Oct 95	105WA	{D6} W of Landfill
AP-3219	13 Oct 95	111WA	{D7} N of Landfill
AP-3220	Fall 1995	Not Sampled	{D8} N of Landfill
AP-3221	3 Oct 95	103WA	{E9} SE of Landfill
AP-3222	15 Oct 95	106WA, 108WA ^{QA} , 110WA ^{QC}	{D7} N of Landfill
FR-1	3 Oct 95	102WA	{E7} W of Landfill
FR-2	3 Oct 95	101WA	{D7} NW of Landfill
FR-3	4 Oct 95	107WA	{D10} E of Landfill
New Monitoring Wells, Installed August 1994-May 1995			
AP-3447	19 Oct 95	158WA	{I4} South Ammo Area
AP-3448	8 Oct 95	135WA	{J5} Antenna Loop Rd
AP-3449	21 Oct 95	166WA	{K4} N of old Hospital
AP-3450	10 Oct 95	127WA	{L5} On well access rd
AP-3451	20 Oct 95	161WA	{K7} On well access rd
AP-3452	10 Oct 95	137WA	{K6} Woodline S of well rd
AP-3453	19 Oct 95	152WA	{J8} Along Arc. Valley Rd
AP-3454	21 Oct 95	163WA	{K8} ASD prop. S of Ship Crk
AP-3455	8 Oct 95	133WA	{H6} Davis Hwy & Antenna Rd
AP-3457	12 Oct 95	139WA	{I6} Antenna Loop Road
AP-3458	13 Oct 95	140WA, 141WA ^{QC} , 142WA ^{QA}	{I6} Antenna Loop Road
AP-3459	13 Oct 95	148WA	{J6} Antenna Loop Road
AP-3470	5 Oct 95	117WA	{G12} S end of runway
AP-3471	6 Oct 95	121WA	{C5} Ammo Area A
AP-3472	6 Oct 95	124WA	{D5} Ammo Area A
AP-3473	5 Oct 95	119WA	{D12} NE of Cemetary
AP-3474	24 Oct 95	114WA	{F6} E of railyard
AP-3475	17 Oct 95	147WA	{F10} 6th & Davis
AP-3476	5 Oct 95	118WA	{F11} N of airfield

TABLE A-1
Well Sampling and Location Information
Fort Richardson Groundwater Study
Fall 1995

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New Monitoring Wells, Installed August 1994 - May 1995 (cont.)			
AP-3477	5 Oct 95	116WA	{E13} N end of runway
AP-3478	5 Oct 95	120WA	{G12} S end of runway
AP-3479	19 Oct 95	153WA	{I10} 6th & Dyea
AP-3480	6 Oct 95	123WA	{G5} SE of railyard
AP-3481	8 Oct 95	130WA	{H5} treeline N of Davis Hwy
AP-3482	8 Oct 95	134WA	{J5} Antenna Loop Road
AP-3483	17 Oct 95	129WA	{H6} Old Davis Highway
AP-3484	17 Oct 95	113WA	{H8} 2nd & Davis
AP-3485	8 Oct 95	131WA	{I6} Antenna Loop Road
AP-3530	6 Oct 95	122WA	{E6} Bldg 55955, N side
AP-3531	6 Oct 95	125WA	{E6} Bldg 55955, SE side
AP-3532	18 Oct 95	155WA, 157WA ^{QC} , 156WA ^{QA}	{G7} Bldg 740
AP-3533	17 Oct 95	128WA	{F9} Bldg 796

Key -

QC : Quality Control Duplicate

QA : Quality Assurance Duplicate

Sample Numbers have sample prefix "95FRGW-"

Table A-2
Well Physical Dimensions
Fort Richardson Groundwater Study
Fall 1995
Page 1 of 4

Well ID	Date Installation Completed	Bottom of Casing (ft bgs)	Top of Screen (ft bgs)	Casing Stickup (ft ags)	Depth to GW (ft bgs) Fall 95
Active Supply Wells					
ADFG C	29 Apr 85	unknown	48 i	na	nm
ADFG E	3 May 85	unknown	29 i	na	nm
ADFG K	unknown	unknown	34 i	na	nm
ADFG 9	unknown	120	unknown	na	nm
Well 1	9 Sep 56	162	132 i	na	37
Well 3	27 Sep 56	138	117 i	na	20
OtterLake	unknown	unknown	unknown	unknown	nm
Former Supply Wells and Piezometers					
TW-1	Mar 56	250	unknown p	2.4	22.91
A-1	2 Aug 82	78	72 p	2.0	30.27
A-6	25 Jan 83	60	unknown p	2.3	5.77
AK-2127	17 Apr 73	190	unknown p	2.8	75.87
Well B	unknown	155	unknown p	2.0	97.85
Original Monitoring Wells, Installed prior to August 1994					
AP-3233	29 Sep 93	124.8	104.8	-0.25 f	114.28
AP-3235	6 Oct 93	128.3	108.6	-0.38 f	115.54
AP-2982	21 Aug 90	24.6	14.3	2.8	14.82/14.94
AP-2985	23 Aug 90	14.3	4.0	2.3	10.55
AP-3231	26 Aug 93	21.0	10.7	2.8	16.66/16.81
AP-2974	2 Aug 90	18.6	8.3	1.9	18.84

Table A-2
Well Physical Dimensions
Fort Richardson Groundwater Study
Fall 1995
Page 2 of 4

Well ID	Date Installation Completed	Bottom of Casing (ft bgs)	Top of Screen (ft bgs)	Casing Stickup (ft ags)	Depth to GW (ft bgs) Fall 95
Landfill Wells					
AP-3010	18 Dec 90	233.5	218.5	3.8	229.70/229.53
AP-3011	11/19/90	138.0	123.0	nm	137.01
AP-3013	7 Dec 90	149.5	134.5	3.4	134.75
AP-3014	21 Dec 90	29.5	14.4	4.6	18.05/19.04
AP-3015	16 Jan 91	126.5	116.5	4.0	119.8/119.8
AP-3219	3 Dec 92	39.4	9.4	2.3	34.22
AP-3220	18 Nov 92	241.4	221.4	2.9	232.41/231.44
AP-3221	2 Nov 92	178.4	158.4	2.2	154.25
AP-3222	12/31/92	139	119	3.4	128.86
FR-1	15 Jan 85	146	136	2.8	131.11/130.96
FR-2	27 Jun 85	162	152	2.6	147.60/147.48
FR-3	9 Jul 85	160	150	1.7	147.74/147.5
New Monitoring Wells, Installed August 1994 - May 1995					
AP-3447	31 Aug 94	64.9	54.6	1.5	58.89
AP-3448	26 Aug 94	32.0	22.0	2.0	29.65
AP-3449	12 Aug 94	30.0	19.7	2.0	27.01
AP-3450	10 Aug 94	27.7	17.3	2.0	23.48
AP-3451	11 Aug 94	18.0	7.7	2.1	13.24
AP-3452	27 Aug 94	37.0	26.6	2.9	30.76
AP-3453	29 Aug 94	34.1	23.7	1.9	27.65
AP-3454	30 Aug 94	24.4	14.4	2.0	20.70
AP-3455	16 Aug 94	82.4	72.1	2.2	77.67
AP-3457	24 Aug 94	49.5	40.0	2.0	40.37
AP-3458	25 Aug 94	34.7	25.0	2.0	26.45

Table A-2
Well Physical Dimensions
Fort Richardson Groundwater Study
Fall 1995
 Page 3 of 4

Well ID	Date Installation Completed	Bottom of Casing (ft bgs)	Top of Screen (ft bgs)	Casing Stickup (ft ags)	Depth to GW (ft bgs) Fall 95
Monitoring Wells Installed August 1994 - May 1995 (cont.)					
AP-3459	25 Aug 94	15.0	5.0	2.0	10.30
AP-3470	10 Jan 95	45.1	25.5	2.6	28.27
AP-3471	26 Apr 95	105.6	75.6	2.8	91.69
AP-3472	20 Apr 95	140.7	110.7	2.4	126.82
AP-3473	16 Feb 95	192.0	162.7	2.5	176.8
AP-3474	25 Jan 95	129.7	100.1	1.9	112.70
AP-3475	9 Feb 95	170.6	140.9	2.2	152.67
AP-3476	3 Apr 95	150.0	120.3	2.5	132.87
AP-3477	21 Feb 95	169.0	139.0	3.7	147.74
AP-3478	4 Mar 95	106.8	96.6	2.4	43.5
AP-3479	3 Feb 95	77.4	67.3	2.6	18.98
AP-3480	31 Jan 95	115.1	85.0	1.9	105.50
AP-3481	28 Jan 95	94.5	64.3	1.4	79.99
AP-3482	9 Mar 95	104.1	94.0	1.5	34.3
AP-3483	10 Jan 95	114.6	104.7	2.4	92.64
AP-3484	13 Apr 95	98.6	68.7	2.6	81.6
AP-3485	13 Mar 95	106.2	96.5	2.3	51.98
AP-3530	28 Apr 95	129.6	99.7	-0.25 f	111.0
AP-3531	1 May 95	131.0	101.1	2.6	114.97
AP-3532	7 May 95	133.7	113.5	2.8	111.0
AP-3533	10 May 95	131.4	111.3	2.5	99.57

Table A-2
Well Physical Dimensions
Fort Richardson Groundwater Study
Fall 1995
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Key:

bgs: below ground surface

ags: above ground surface

¹: Depths to groundwater measured on dates well was sampled (see Table 3-1).

p: According to records, well constructed of perforated pipe rather than well screen.

i: Depth indicated is depth of water intake pipe.

f: Well installed with a flush mount wellhead.

na: Not applicable at this well.

nm: Not measured.

TABLE A-3
RBC and MCL Threshold Levels
 Page 1 of 4

Compound/Analyte	RBC, $\mu\text{g/L}$	MCL, $\mu\text{g/L}$	SMCL, $\mu\text{g/L}$
Volatile Compounds			
Acetone	3,700 ^N	--	--
Benzene	0.36 ^C x	5	--
2-Butanone	1,900 ^N	--	--
n-Butylbenzene	61 ^N	--	--
t-Butylbenzene	61 ^N	--	--
Carbon Disulfide	1000 ^N	--	--
Carbon Tetrachloride	0.16 ^C x	5	--
Chlorobenzene	39 ^N	100	--
Chloroform	0.15 ^C x	100	--
Chloromethane	1.4 ^C	--	--
1,2-Dibromoethane	0.00075 ^C x	--	--
Dibromomethane	--	100	--
1,2-Dichlorobenzene	270 ^N	600	10
1,3-Dichlorobenzene	540 ^N	--	--
1,4-Dichlorobenzene	0.44 ^C x	75	--
1,1-Dichloroethane	810 ^N	--	--
1,2-Dichloroethane	0.12 ^C x	5	--
cis-1,2-Dichloroethene	61 ^N	70	--
Dichlorodifluoromethane	390 ^N	--	--
1,3-Dichloropropane	0.16 ^C x	--	--
Ethylbenzene	1,300 ^N	700	--
Hexachlorobutadiene	0.14 ^C x	--	--
Isopropylbenzene	--	--	--
p-Isopropyltoluene	--	--	--
Methylene Chloride	4.1 ^C	5	--

TABLE A-3
RBC and MCL Threshold Levels
Page 2 of 4

Compound/Analyte	RBC, µg/L	MCL, µg/L	SMCL, µg/L
Volatile Compounds (cont)			
Naphthalene	1,500 ^N	--	--
n-Propylbenzene	--	--	--
1,1,2,2-Tetrachloroethane	0.052 ^C x	--	--
Tetrachloroethene (PCE)	1.1 ^C	5	--
Toluene	750 ^N	1,000	--
1,2,4-Trichlorobenzene	190 ^N	70	--
1,1,1-Trichloroethane	1,300 ^N	200	--
1,1,2-Trichloroethane	0.19 ^C x	5	--
Trichloroethene (TCE)	1.6 ^C	5	--
1,2,4-Trimethylbenzene	300 ^N	--	--
1,3,5-Trimethylbenzene	300 ^N	--	--
Xylenes (mixed)	12,000	10,000	--
Semivolatile Compounds			
Benzoic Acid	150,000 ^N		
bis(2-Ethylhexyl)phalate	4.8 ^C x	6	--
PAHs			
Acenaphthene	2,200 ^N	--	--
Anthracene	11,000 ^N	--	--
Benzo(a)anthracene	0.092 ^C x	0.1 ^P	--
Benzo(b)fluoranthene	0.092 ^C x	0.2 ^P	--
Benzo(k)fluoranthene	0.92 ^C	0.2 ^P	--
Benzo(a)pyrene	0.0092 ^C x	0.2	--
Chrysene	9.2 ^C	0.2 ^P	--
Dibenz(a,h)anthracene	0.0092 ^C x	0.3 ^P	--
Fluoranthene	1,500 ^N	--	--

TABLE A-3
RBC and MCL Threshold Levels
Page 3 of 4

Compound/Analyte	RBC, µg/L	MCL, µg/L	SMCL, µg/L
PAHs (cont)			
Fluorene	1,500 ^N	—	--
Indeno(1,2,3-cd)pyrene	0.092 ^C x	0.4 ^P	--
Naphthalene	1,500 ^N	—	—
Phenanthrene	—	—	—
Pyrene	1,100 ^N	—	—
Polychlorinated Biphenyls (PCBs)			
Total PCBs	0.0087 ^C x	0.5	--
Aroclor 1016	2.6 ^N	--	--
Aroclor 1254	0.73 ^N	—	—
Pesticides			
alpha-BHC (HCH)	0.011 ^C x	—	—
BHC, mixed (technical)	0.037 ^C x	--	--
Metals			
Aluminum	37,000 ^N	—	200
Antimony	15 ^N	6	--
Arsenic	11 ^N /0.045 ^C x	50	—
Barium	2,600 ^N	2,000	--
Beryllium	0.016 ^C x	4	--
Cadmium	18 ^N	5	--
Calcium	—	--	—
Chromium (III)	37,000 ^N	100	--
Cobalt	2,200 ^N	—	--
Copper	1,500 ^N	--	1,000
Iron	11000 ^N	—	300
Lead	--	15 ^A	—
Magnesium	—	—	--
Manganese	180 ^N	--	50

TABLE A-3
RBC and MCL Threshold Levels
 Page 4 of 4

Compound/Analyte	RBC, µg/L	MCL, µg/L	SMCL, µg/L
Metals (cont)			
Mercury	11 ^N	2	--
Nickel	730 ^N	100	--
Potassium	--	--	--
Selenium	180 ^N	50	
Silver	180 ^N	--	100
Sodium	--	--	250,000
Thallium	2.9 ^N	2	--
Vanadium	260 ^N	--	--
Zinc	11,000 ^N	--	5,000
Other Inorganics			
Chloride	--	--	250,000
Nitrate + Nitrite	58,000	10,000	--
Sulfate	--	--	250,000

Key:

RBC: Risk-Based Concentration, for long-term ingestion of drinking water, EPA Region III, 7 Mar 95.

MCL: Maximum Contaminant Level (drinking water)

SMCL: Secondary Maximum Contaminant Level (drinking water)

C: Carcinogen (value is for risk = 10^{-6})

N: Noncarcinogen (value is for hazard quotient (HQ) of 1.0)

A: Value is not a MCL, but an EPA "action level"

P: Value is the *Proposed* MCL (PMCL)

x: Method Reporting Limit (MRL) typical for this compound/analyte may be higher than RBC/MCL threshold limit.

TABLE A-4
Chemical Detections above Threshold Levels
Fall 1995

Page 1 of 2

Well ID	VOCs, µg/L	GRO, µg/L	DRO, mg/L	Metals (total/dlss.), µg/L
A-6	ND	ND(50)	0.2	ND
AP-2974	Carbon Tetrachloride: 0.7 Chloroform: 0.5	ND(50)	0.1	ND
AP-2982	Benzene: 37-110J 1,2-dichloroethane: 1.2J Trichloroethene: 1.6-1.9	1670-2300	0.8-1.7	Arsenic: 6-7/6-7 Manganese: 1220- 1400/1250-1400
AP-3231	Trichloroethene: 4.7	ND(50)	ND(0.1)	Beryllium: 34
AP-3233	Benzene: 36-38 1,2-dichloroethane: 3.5-4.4	1400-1500	2.0-2.1	Arsenic: 5-7/5-6 Manganese: 1490- 1600/1540-1600
AP-3235	Benzene: 0.8	54-70	0.52-0.9	Arsenic: 2/4 Manganese: 415- 440/402-420
AP-3448	ND	ND(50)	0.1	ND
AP-3452	ND	ND(50)	ND(0.1)	Arsenic: 7/ND(5) Manganese: 773/ND(5) Iron: 16,600/ND(20)
AP-3453	ND	ND(50)	0.2	Manganese: 827/ND(5) Iron: 21,200/ND(20)

TABLE A-4
Chemical Detections above Threshold Levels
Fall 1995

Page 2 of 2

Well ID	VOCs, µg/L	GRO, µg/L	DRO, mg/L	Metals (total/diss.), µg/L			
AP-3455	ND	ND(50)	LC	Manganese: 231/27			
AP-3457	ND	ND(50)	0.7	ND			
AP-3458	ND	ND(50)	1.0-1.3	Manganese: 2770- 2890/2780-3000 Thallium: 3/ND(2)			
AP-3473	ND	ND(50)	ND(0.1)	Manganese: 8430/ND(5)			
AP-3474	Chloroform: 0.7	LC	0.2	ND			
AP-3476	ND	ND(50)	0.1	ND			
AP-3532	Carbon Tetrachloride: 1.4	ND(50)	ND(0.1)	ND			
AP-3533	Carbon Tetrachloride: 0.8 Chloroform: 2	ND(50)	ND(0.1)	ND			
Otter Lake	ND	LC	0.1	ND			
Well B	ND	LC	0.2	ND			
<table border="0" style="width: 100%;"> <tr> <td style="width: 33%; vertical-align: top;"> Key: Table displays reports of concentrations above RBC or MCL, whichever is lower. Absence of well or parameter in table indicates ND. Hyphenated ranges of values indicate triplicate samples </td> <td style="width: 33%; vertical-align: top;"> ND: Not Detected (value in parentheses is the Method Reporting Limit). LC: Positive result attributed to lab contamination. </td> <td style="width: 33%; vertical-align: top;"> J: Estimated value. GRO: Gasoline Range Organics DRO: Diesel Range Organics </td> </tr> </table>					Key: Table displays reports of concentrations above RBC or MCL, whichever is lower. Absence of well or parameter in table indicates ND. Hyphenated ranges of values indicate triplicate samples	ND: Not Detected (value in parentheses is the Method Reporting Limit). LC: Positive result attributed to lab contamination.	J: Estimated value. GRO: Gasoline Range Organics DRO: Diesel Range Organics
Key: Table displays reports of concentrations above RBC or MCL, whichever is lower. Absence of well or parameter in table indicates ND. Hyphenated ranges of values indicate triplicate samples	ND: Not Detected (value in parentheses is the Method Reporting Limit). LC: Positive result attributed to lab contamination.	J: Estimated value. GRO: Gasoline Range Organics DRO: Diesel Range Organics					

TABLE A-5
Summary of Extraction and Analytical Methods
Fall 1995
 Page 1 of 2

Compounds/Analytes	Primary Laboratory		QA Laboratory	
	Extraction Method	Analytical Method	Extraction Method	Analytical Method
Volatile Organic Compounds	5030A	8260	5030	8260
Gasoline Range Organics	5030	8015 mod	5030	8015 mod
Diesel Range Organics	3510	8100 mod	3510	8100 mod
Polycyclic Aromatic Hydrocarbons	3510A	8310	3510	8310
Semivolatile Organic Compds	3510	8270	3510	8270
PCBs and Pesticides	3510	8080	3510	8080
Total Recov. Pet. Hydrocarbons	(method)	418.1	(method)	418.1
Total Organic Carbon	(method)	415.1	(method)	415.1
Chemical Oxygen Demand	(method)	410.2	(method)	410.2
Biological Oxygen Demand	(method)	405.1	ns	ns
Total Phosphate	(method)	365.3	(method)	365.2
Ammonia Nitrogen	(method)	350.3	(method)	350.1
Nitrate & Nitrite Nitrogen	(method)	353.2	(method)	353.1
Sulfate	(method)	300.0	(method)	300.0
Chloride	(method)	300.0	(method)	300.0
Alkalinity	(method)	310.1	(method)	310.1
Hardness	3010A	6010A	nr	nr
Turbidity	(method)	180.1	ns	ns
Aluminum	3010A	6010A	3010	6010
Antimony	3010A	7041	3050	7041
Arsenic	3020A	7060	(method)	7061
Barium	3010A	6010A	3010	6010
Beryllium	3010A	6010A	3010	6010
Cadmium	3010A	6010A	3010	6010
Calcium	3010A	6010A	3010	6010
Chromium	3010A	6010A	3010	6010

TABLE A-5
 Summary of Extraction and Analytical Methods
 Fall 1995
 Page 2 of 2

Compounds/Analytes	Primary Laboratory		QA Laboratory	
	Extraction Method	Analytical Method	Extraction Method	Analytical Method
Cobalt	3010A	6010A	3010	6010
Copper	3010A	6010A	3010	6010
Iron	3010A	6010A	3010	6010
Lead	3010A	7421	3020	7421
Magnesium	3010A	6010A	3010	6010
Manganese	3010A	6010A	3010	6010
Mercury	(method)	7470	(method)	7470
Nickel	3010A	6010A	3010	6010
Potassium	3010A	258.1	3010	6010
Selenium	3020A	7740	(method)	7741
Silver	3010A	6010A	3010	6010
Sodium	3010A	6010A	3010	6010
Thallium	3020A	7841	3020	7841
Vanadium	3010A	6010A	3010	6010
Zinc	3010A	6010A	3010	6010

ns: No sample provided to laboratory
 nr: Not reported
 8100 mod and 8015 mod are Alaska Department of Environmental Conservation approved modifications

Appendix B
Sampling Summary Forms
Fall 1995

Well A-1
10 Oct, 95

Sampling Point: 6-inch diameter former supply well converted to a monitoring well.

Equipment: Dedicated 4-inch single speed submersible pump; Homelight 5000-watt 240-volt generator; Teflon sample tube

Casing top/water: 30.27 ft

Casing top/bottom: 80.00 ft (from record)

Purge Volume: 947 L

Purge Rate: 18.9 L/min

Sampled By: B. Walters / J. Venner

Physical Parameters and Observations at time of Sample Collection

Temperature: 5.8 °C
pH: 7.13
Conductivity: 0.14 millimhos/cm
Redox Potential: 342 millivolts
Odor: None Noticeable
Appearance: clear

Sample Number: 95FRGW132WA

Time of Sampling: 1117 - 1125 10 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Water was discharged onto the ground.

Well A-6
10 Oct. 95

Sampling Point: 6-inch diameter former supply well converted to a monitoring well.
Equipment: Dedicated 4-inch single speed submersible pump; Homelight 5000-watt 240-volt generator; Teflon sample tube

Casing top/water: 5.77 ft
Casing top/bottom: 62.3 ft (from record)
Purge Volume: 1041 L
Purge Rate: 18.6 L/min
Sampled By: B. Walters / J. Venner

Physical Parameters and Observations at time of Sample Collection

Temperature: 8 °C
pH: 6.82
Conductivity: 0.101 millimhos/cm
Redox Potential: 316 millivolts
Odor: None Noticeable
Appearance: Dark Brown

Sample Number: 95FRGW126WA

Time of Sampling: 1245 - 1255 10 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Water was discharged onto the ground.

ADFG - 9
20 Oct. 95
Fishery Supply Well

Sampling Point: Spigot in water supply pipe in access utilidor; water running prior to and during sample collection.

Equipment: Samples collected directly from spigot.

Casing top/water: not applicable

Casing top/bottom: not applicable

Purge Volume: ~100 L

Purge Rate: 23 L/min

Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 4.7 °C
pH: 6.35
Conductivity: 0.123 millimhos/cm
Redox Potential: 133 millivolts
Odor: None Noticeable
Appearance: clean

Sample Number: 95FRGW165WA

Time of Sampling: 1034 - 1045 20 Oct. 95

Rate of Sampling: Slowest non-turbid sustainable flow

Analyses Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Discharged to floor drain in manifold building.

ADFG - C
20 Oct. 95
Fishery Supply Well

Sampling Point: Spigot in 10-in supply pipe in ADFG well manifold building; water flowing through pipe prior to sampling.

Equipment: Samples collected directly from spigot.

Casing top/water: not applicable

Casing top/bottom: not applicable

Purge Volume: purged for 8 min.

Purge Rate: spigot full open

Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature:	8.2 °C
pH:	6.47
Conductivity:	0.105 millimhos/cm
Redox Potential:	134 millivolts
Odor:	None Noticeable
Appearance:	clean

Sample Number: 95FRGW162WA

Time of Sampling: 1109 - 1116 20 Oct. 95

Rate of Sampling: Slowest non-turbid sustainable flow

Analyses Requested:

- 8310 Polyaromatic Hydrocarbons
- 8260 Volatile Organic Compounds
- 8015 Gasoline Range Organics
(modified ADEC version)
- 8100 Diesel Range Organics
(modified ADEC version)
- 23 TAL Metals, total
- 23 TAL Metals, dissolved

Disposition of Purge Water: Discharged to floor drain in manifold building.

ADFG - K
20 Oct. 95
Fishery Supply Well

Sampling Point: Spigot in 10-inch water supply pipe in ADFG well manifold building; water flowing prior to and during sample collection. Gage reading ~12 psi.

Equipment: Samples collected directly from spigot.

Casing top/water: not applicable

Casing top/bottom: not applicable

Purge Volume: purged for 18 min.

Purge Rate: spigot full open

Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 8.1 °C
pH: 6.04
Conductivity: 0.103 millimhos/cm
Redox Potential: 94 millivolts
Odor: None Noticeable
Appearance: very rusty at first, clean at sample

Sample Number: 95FRGW164WA

Time of Sampling: 1118 - 1126 20 Oct. 95

Rate of Sampling: Slowest non-turbid sustainable flow

Analyses Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Discharged to floor drain in manifold building.

ADFG - E
20 Oct. 95
Fishery Supply Well

Sampling Point: Spigot in 10-inch water supply pipe in ADFG well manifold building.
Equipment: Unable to sample due to broken pump. Pump had been offline several week.

Casing top/water: not applicable
Casing top/bottom: not applicable
Purge Volume:
Purge Rate:
Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature:	NT	°C
pH:	NT	
Conductivity:	NT	millimhos/cm
Redox Potential:	NT	millivolts
Odor:	NT	
Appearance:	very rusty at first, clean at sample	

Sample Number: No Sample Collected

Time of Sampling:

Rate of Sampling:

Analyses Requested:
None Submitted

Disposition of Purge Water: No Purge water generated.

AK-2127
19 Oct. 95

Sampling Point: 6-inch diameter former piezometer

Equipment: Dedicated 4-inch single speed submersible pump; Homelight 5000-watt 240-volt generator; Teflon sample tube

Casing top/water: 75.87 ft

Casing top/bottom: 191.0 ft (from record)

Purge Volume: 1976 L

Purge Rate: 11.2 L/min

Sampled By: B. Walters / R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 3.5 °C

pH: 7.23

Conductivity: 0.142 millimhos/cm

Redox Potential: 72 millivolts

Odor: None Noticeable

Appearance: rusty at first clean at sample

Sample Number: 95FRGW154WA

Time of Sampling: 1840 - 1851 19 Oct. 1995

Rate of Sampling: Slowest sustainable non turbulent flow

Analysis Requested:

8310 Polyaromatic Hydrocarbons

8260 Volatile Organic Compounds

8015 Gasoline Range Organics
(modified ADEC version)

8100 Diesel Range Organics
(modified ADEC version)

23 TAL Metals, total

23 TAL Metals, dissolved

Disposition of Purge Water: Water was discharged onto the ground.

AP-2974.
25 Oct. 95
Power Plant Well

Sampling Point: 2-inch Monitoring Well
Equipment: Purged and sampled with a disposable Teflon bailer.

Casing top/water: 18.84 ft
Casing top/bottom: 21.8 ft (from records)
Purge Volume: 6 L
Purge Rate: 0.28 L/min
Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 10.1 °C
pH: 6.76
Conductivity: 0.413 millimhos/cm
Redox Potential: 111 millivolts
Odor: None Noticeable
Appearance: light brown

Sample Number: 95FRGW177WA
95FRGW178WA QA
95FRGW179WA QC

Time of Sampling: 1149 - 1240 25 Oct. 95

Rate of Sampling: Less than 1 L/min

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-2982
 12 Oct. 95 & 13 Oct. 95
 Bldg 35-752

Sampling Point: 2-inch Monitoring Well

Equipment: Purged and sampled with a disposable Teflon bailer.

12 Oct. 95	13 Oct. 95
Casing top/water: 14.82 ft	14.94 ft
Casing top/bottom: 24.24 ft (from record)	24.24 ft (from records)
Purge Volume: 18 L	18 L
Purge Rate: 0.5 L/min	.64 L/min
Sampled By: B. Walters / J. Venner	B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature:	6.5 °C	6.6
pH:	6.94	7.25
Conductivity:	0.112 millimhos/cm	0.105
Redox Potential:	151 millivolts	164
Odor:	None Noticeable	None Noticeable
Appearance:	light brown	light brown

Sample Number: 95FRGW144WA
 95FRGW145WA QA
 95FRGW146WA QC

Time of Sampling: 1502 - 1530	12 Oct. 95	1135 - 1205	13 Oct. 95
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Rate of Sampling: Less than 1 L/min	Less than 1 L/min
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12 Oct. 95	13 Oct. 95
8310 Polyaromatic Hydrocarbon	8080 PCBs Triplicate
8260 Gasoline Range Organics	
8015 (modified ADEC version)	
Diesel Range Organics	
8100 (modified ADEC version)	
TAL Metals, total	
23 TAL Metals, dissolved	
23	

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-2985
13 Oct. 95
Bldg. 35-752

Sampling Point: 2-inch Monitoring Well
Equipment: Purged and sampled with a disposable Teflon bailer.

Casing top/water: 10.55 ft
Casing top/bottom: 16.3 ft (from record)
Purge Volume: 11 L
Purge Rate: 0.75 L/min
Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 8.2 °C
pH: 6.89
Conductivity: 0.075 millimhos/cm
Redox Potential: 312 millivolts
Odor: None Noticeable
Appearance: clear

Sample Number: 95FRGW143WA

Time of Sampling: 1405 - 1420 13 Oct. 95

Rate of Sampling: Less than 1 L/min

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3010
 Landfill Well
 4 Oct. 95 /11 Oct. 95

Sampling Point: 4-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

4 Oct. 95	11 Oct. 95
Casing top/water: 229.70 ft	229.53 ft
Casing top/bottom: 235.58 ft (from records)	235.58 ft (from records)
Purge Volume: 53 L	15 L
Purge Rate: 1.47 L/min	1.15 L/min
Sampled By: R. Ragle	R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 7.5 °C	Unable to collect sample.
pH: 5.93	After 15 L purged the pump
Conductivity: 0.336 millimhos/cm	was unable to pump water.
Redox Potential: 88 millivolts	
Odor: None Noticeable	
Appearance: Clean at sampling	

Sample Number: 95FRGW109WA

Time of Sampling: 1338 - 1349 4 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min)

Analysis Requested: 4 Oct. 95

- 8310 Polyaromatic Hydrocarbons
- 8260 Volatile Organic Compounds
- 8015 Gasoline Range Organics
(modified ADEC version)
- 8100 Diesel Range Organics
(modified ADEC version)
- 23 TAL Metals, total
- 23 TAL Metals, dissolved
- 8080 PCBs and Pesticides
- 418.1 Total Recoverable Petroleum Hydrocarbons
- 351.1 TKN
- 365.1 Phosphate
- 350.3 Ammonium Nitrogen
- 353.3 Nitrate/Nitrite
- 375.4 Sulfate
- 325.1 Chloride
- 310.1 Alkalinity
- 160.1 Total Dissolved Solids
- 425.1 MBAS
- 415.1 Total Organic Carbon
- 410.1 Chemical Oxygen Demand
- 405.1 Biological Oxygen Demand
- 130.1 Hardness
- 180.1 Turbidity

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis
 Unable to complete purging on 11 Oct. 95. Generator ran out of gas and was unable to get water there after.

AP-3011
 16 Oct. 95
 Landfill Well

Sampling Point: 4-inch Monitoring Well
Equipment: Purged and sampled with a disposable Teflon Bailer.

Casing top/water: 137.01 ft
 Casing top/bottom: 140 ft (from record)
 Purge Volume: 23 L
 Purge Rate: 0.17 L/min
 Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 3.2 °C
 pH: 7.47
 Conductivity: 0.561 millimhos/cm
 Redox Potential: 379 millivolts
 Odor: None Noticeable
 Appearance: clean and clear

Sample Number: 95FRGW112WA

Time of Sampling: 1535 - 1610 16 Oct. 95

Rate of Sampling: Less than 1 L/min

Analysis Requested:

8310 Polyaromatic Hydrocarbons	Corrosivity / Langier Index
8260 Volatile Organic Compounds	Fecal Coliform
8015 Gasoline Range Organics (modified ADEC version)	8151 Chlorinated Herbicides
8100 Diesel Range Organics (modified ADEC version)	9012 Cyanide
23 TAL Metals, total	8141A Organophosphorus Pesticides
23 TAL Metals, dissolved	8151 Chlorinated Herbicides
8080 PCBs and Pesticides	8270 Semivolatile Organic Compounds w/o PAHs
418.1 Total Recoverable Petroleum Hydrocarbons	
351.1 TKN	
365.1 Phosphate	
350.3 Ammonium Nitrogen	
353.3 Nitrate/Nitrite	
375.4 Sulfate	
325.1 Chloride	
310.1 Alkalinity	
160.1 Total Dissolved Solids	
425.1 MBAS	
415.1 Total Organic Carbon	
410.1 Chemical Oxygen Demand	
405.1 Biological Oxygen Demand	
130.1 Hardness	
180.1 Turbidity	

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3013
18 Oct. 95
Landfill Well

Sampling Point: 4-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 134.75 ft

Casing top/bottom: 150.00 ft (from record)

Purge Volume: 115 L

Purge Rate: 2.1 L/min (312 Hz)

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature:	4.9 °C
pH:	7.67
Conductivity:	0.226 millimhos/cm
Redox Potential:	329 millivolts
Odor:	None Noticeable
Appearance:	clean

Sample Number: 95FRGW115WA

Time of Sampling: 1535 - 1605 18 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (310 Hz)

Analysis Requested:

- 8310 Polyaromatic Hydrocarbons
- 8260 Volatile Organic Compounds
- 8015 Gasoline Range Organics
(modified ADEC version)
- 8100 Diesel Range Organics
(modified ADEC version)
- 23 TAL Metals, total
- 23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3014
Landfill Well
3 Oct. 95 / 11 Oct. 1995

Sampling Point: 4-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

3 Oct. 95	11 Oct. 95
Casing top/water: 18.05 ft	19.04 ft
Casing top/bottom: 31.1 ft (from records)	31.1 ft (from records)
Purge Volume: 115 L	90 L
Purge Rate: 2.78 L/min	1.08 L/min
Sampled By: R. Ragle	R. Ragle / M. Jemin

Physical Parameters and Observations at time of Sample Collection

Temperature:	6.2 °C	6.3 °C
pH:	5.93	7.01
Conductivity:	0.088 millimhos/cm	0.085 millimhos/cm
Redox Potential:	90 millivolts	90 millivolts
Odor:	None Noticeable	
Appearance:	1st 3L slightly cloudy, clear after that	

Sample Number: 95FRGW104WA

Time of Sampling: 1424 - 1441 3 Oct. 95 | 1148 - 1155 11 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min)

Analysis Requested: 3 Oct. 95

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved
8080 PCBs and Pesticides
418.1 Total Recoverable Petroleum Hydrocarbons
351.1 TKN
365.1 Phosphate
350.3 Ammonium Nitrogen
353.3 Nitrate/Nitrite
375.4 Sulfate
325.1 Chloride
310.1 Alkalinity
160.1 Total Dissolved Solids
425.1 MBAS
415.1 Total Organic Carbon
410.1 Chemical Oxygen Demand
405.1 Biological Oxygen Demand
130.1 Hardness
180.1 Turbidity

11 Oct. 95

Corrosivity / Langier Index
Fecal Coliform
8151 Chlorinated Herbicides
9012 Cyanide
8141A Organophosphorus Pesticides
8151 Chlorinated Herbicides
8270 Semivolatile Organic Compounds
w/o PAHs

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3015
Landfill Well
3 Oct. 95 / 11 Oct. 1995

Sampling Point: 4-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

3 Oct. 95	11 Oct. 95
Casing top/water: 119.8 ft	119.8 ft
Casing top/bottom: 130.1 ft (from records)	130.1 ft (from records)
Purge Volume: 95 L	96 L
Purge Rate: 1.61 L/min	1.13 L/min
Sampled By: R. Ragle	R. Ragle / M. Jemin

Physical Parameters and Observations at time of Sample Collection

Temperature:	6.8 °C °C	7.7 °C
pH:	6.02	7.08
Conductivity:	0.251 millimhos/cm	0.247 millimhos/cm
Redox Potential:	89 millivolts	82 millivolts
Odor:	None Noticeable	
Appearance:	Started cloudy, cleaned up quickly	

Sample Number: 95FRGW105WA

Time of Sampling: 1244 - 1310 3 Oct. 95 | 1156 -1201 11 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min)

Analyses Requested: 3 Oct. 95	11 Oct. 95
8310 Polyaromatic Hydrocarbons	Corrosivity / Langier Index
8260 Volatile Organic Compounds	Fecal Coliform
8015 Gasoline Range Organics (modified ADEC version)	8151 Chlorinated Herbicides
8100 Diesel Range Organics (modified ADEC version)	9012 Cyanide
23 TAL Metals, total	8141A Organophosphorus Pesticides
23 TAL Metals, dissolved	8151 Chlorinated Herbicides
8080 PCBs and Pesticides	8270 Semivolatile Organic Compounds w/o PAHs
418.1 Total Recoverable Petroleum Hydrocarbons	
351.1 TKN	
365.1 Phosphate	
350.3 Ammonium Nitrogen	
353.3 Nitrate/Nitrite	
375.4 Sulfate	
325.1 Chloride	
310.1 Alkalinity	
160.1 Total Dissolved Solids	
425.1 MBAS	
415.1 Total Organic Carbon	
410.1 Chemical Oxygen Demand	
405.1 Biological Oxygen Demand	
130.1 Hardness	
180.1 Turbidity	

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3219
15 Oct. 95
Landfill Well

Sampling Point: 4-inch Monitoring Well.
Equipment: Purged and sampled with disposable Teflon bailer.

Casing top/water: 34.22 ft
Casing top/bottom: 41.4 ft (from record)
Purge Volume: 55 L
Purge Rate: 0.88 L/min
Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 3.2 °C
pH: 6.5
Conductivity: 0.041 millimhos/cm
Redox Potential: 326 millivolts
Odor: None Noticeable
Appearance:

Sample Number: 95FRGW111WA

Time of Sampling: 1532 - 1548 13 Oct. 95

Rate of Sampling: Less than 1L/min

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP - 3220
15 & 17 Oct. 95
Landfill Well

Sampling Point: 4-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 232.41' / 231.44'

Casing top/bottom: 243.4'

Purge Volume: not applicable

Purge Rate: not applicable

Sampled By: R. Ragle / B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature:	NT	°C
pH:	NT	
Conductivity:	NT	millimhos/cm
Redox Potential:	NT	millivolts
Odor:	NT	
Appearance:	No water	

Sample Number: No Sample Collected

Time of Sampling:

Rate of Sampling:

Analyses Requested:

None Collected

Unable to get water out of well. All equipment was working properly.
The pump was able to lift water, but was unable to get it all the way to the surface.

Disposition of Purge Water: No IDW was generated.

AP-3221
3 Oct. 95
Landfill Well

Sampling Point: 4-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser, Homelight 5000 watt, 240 volt generator, Grundfos BM/MP1 voltage control box; Teflon sampling tube. On subsequent return to finish sampling unable to get water to the surface.

Casing top/water: 154.25 ft
Casing top/bottom: 180.00 ft (from record)
Purge Volume: 195 L
Purge Rate: .92 L/min (382 Hz)
Sampled By: B. Walters / R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 3.6 °C
pH: 7.12
Conductivity: 0.48 millimhos/cm
Redox Potential: 113 millivolts
Odor: None Noticeable
Appearance: clear

Sample Number: 95FRGW103WA

Time of Sampling: 1901 - 1912 3 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (280 Hz)

Analysis Requested: 3 Oct. 95

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved
8080 PCBs and Pesticides
418.1 Total Recoverable Petroleum Hydrocarbons
351.1 TKN
365.1 Phosphate
350.3 Ammonium Nitrogen
353.3 Nitrate/Nitrite
375.4 Sulfate
325.1 Chloride
310.1 Alkalinity
160.1 Total Dissolved Solids
425.1 MBAS
415.1 Total Organic Carbon
410.1 Chemical Oxygen Demand
405.1 Biological Oxygen Demand
130.1 Hardness
180.1 Turbidity

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3222
 15 Oct. 95
 Landfill Well

Sampling Point: 4-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tu

Casing top/water: 128.86 ft
 Casing top/bottom: 141 ft (from records)
 Purge Volume: 120 L
 Purge Rate: 1.45 L/min
 Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 9.4 °C
 pH: 6.79
 Conductivity: 0.252 millimhos/cm
 Redox Potential: 77 millivolts
 Odor: None Noticeable
 Appearance:

Sample Number: 95FRGW106WA
 95FRGW108WA MS/MSD
 95FRGW110WA MS/MSD

Time of Sampling: 1155 - 1340 15 Oct. 95

Rate of Sampling:

Analysis Requested:

8310 Polyaromatic Hydrocarbons	Corrosivity / Langier Index
8260 Volatile Organic Compounds	Fecal Coliform
8015 Gasoline Range Organics (modified ADEC version)	8151 Chlorinated Herbicides
8100 Diesel Range Organics (modified ADEC version)	9012 Cyanide
23 TAL Metals, total	8141A Organophosphorus Pesticides
23 TAL Metals, dissolved	8151 Chlorinated Herbicides
8080 PCBs and Pesticides	8270 Semivolatile Organic Coumpounds w/o PAHs
418.1 Total Recoverable Petroleum Hydrocarbons	
351.1 TKN	130.1 Hardness
365.1 Phosphate	180.1 Turbidity
350.3 Ammonium Nitrogen	
353.3 Nitrate/Nitrite	
375.4 Sulfate	
325.1 Chloride	
310.1 Alkalinity	
160.1 Total Dissolved Solids	
425.1 MBAS	
415.1 Total Organic Carbon	
410.1 Chemical Oxygen Demand	
405.1 Biological Oxygen Demand	

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3231
 12 Oct. 95
 Building 35-752

Sampling Point: 2-inch Monitoring Well
Equipment: Well was sampled with a disposable Teflon bailer.

Casing top/water:	16.66 ft	16.81 ft
Casing top/bottom:	23.75 ft (from records)	23.75 ft (from records)
Purge Volume:	19 L	15 L
Purge Rate:	.59 L/min	.79 L/min
Sampled By:	R. Ragle	R. Ragle
	12 Oct. 95	13 Oct. 95

Physical Parameters and Observations at time of Sample Collection

Temperature:	6.3 °C	6.3 °C
pH:	5.91	6.13
Conductivity:	0.079 millimhos/cm	0.08 millimhos/cm
Redox Potential:	83 millivolts	85 millivolts
Odor:	None Noticeable	None Noticeable
Appearance:	Very Silty	Cleaner than 12 Oct.95, kept bailer off of the botto

Sample Number: 95FRGW138WA

Time of Sampling: 1229 - 1242 12 Oct. 95 1438 - 1442 13 Oct. 95

Rate of Sampling:

Analysis Requested:	12 Oct. 95	13 Oct. 95
	8310 Polyaromatic Hydrocarbons	8080 PCBs
	8260 Volatile Organic Compounds	
	8015 Gasoline Range Organics (modified ADEC version)	
	8100 Diesel Range Organics (modified ADEC version)	
	23 TAL Metals, total	
	23 TAL Metals, dissolved	

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3233
23 Oct. 95
Building 987

Sampling Point: 2-inch flush mount monitoring well
Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser, Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 114.28 ft
Casing top/bottom: 125.0 ft (from records)
Purge Volume: 21 L
Purge Rate: 1.0 L/min (230 Hz)
Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 8.9 °C
pH: 7.22
Conductivity: 0.382 millimhos/cm
Redox Potential: 64 millivolts
Odor: None Noticeable
Appearance: Light rust color at start clean at sample

Sample Number: 95FRGW168WA
95FRGW169WA QA
95FRGW170WA QC

Time of Sampling: 1503 - 1524 23 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (228 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3235
23 Oct. 95
Building 987

Sampling Point: 4-inch flush mount monitoring well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 115.54 ft

Casing top/bottom: 128.0 ft (from records)

Purge Volume: 95 L

Purge Rate: 1.0 L/min (232 Hz)

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 9.7 °C

pH: 7.29

Conductivity: 0.396 millimhos/cm

Redox Potential: 80 millivolts

Odor: None Noticeable

Appearance: Light rust color at start clean at sample

Sample Number: 95FRGW171WA MS/MSD
95FRGW172WA QA MS/MSD
95FRGW173WA QC

Time of Sampling: 1328 - 1355 23 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (230 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons

8260 Volatile Organic Compounds

8015 Gasoline Range Organics
(modified ADEC version)

8100 Diesel Range Organics
(modified ADEC version)

23 TAL Metals, total

23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3447
19 Oct. 95
South Ammo Area

Sampling Point: 2-inch monitoring well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 58.89 ft

Casing top/bottom: 66.5 ft (from record)

Purge Volume: 14 L

Purge Rate: 1.0 L/min

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 11.6 °C
pH: 6.76
Conductivity: 0.116 millimhos/cm
Redox Potential: 120 millivolts
Odor: None Noticeable
Appearance: Brown clean at sample

Sample Number: 95FRGW158WA

Time of Sampling: not reported

Rate of Sampling: Slowest sustainable non turbulent flow

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3448
6 Oct. 95

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos GBMI/MP1 voltage control box; Teflon Sampling tube.

Casing top/water: 29.65 ft.

Casing top/bottom: 35.5 ft (from records)

Purge Volume: 12 L

Purge Rate: 1.0 L/min (118 Hz)

Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature:	9.4 °C
pH:	6.68
Conductivity:	0.161 millimhos/cm
Redox Potential:	65 millivolts
Odor:	None Noticeable
Appearance:	Very dirty brown, cleanby 10L.

Sample Number: 95FRGW135WA

Time of Sampling: 1442 - 1450 6 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min)

Analysis Requested:

- 8310 Polyaromatic Hydrocarbons
- 8260 Volatile Organic Compounds
- 8015 Gasoline Range Organics
(modified ADEC version)
- 8100 Diesel Range Organics
(modified ADEC version)
- 23 TAL Metals, total
- 23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3449
21 Oct. 95
Elmendorf Hospital

Sampling Point: 2-inch monitoring well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 27.01 ft

Casing top/bottom: 31.7 ft (from records)

Purge Volume: 10 L

Purge Rate: 0.5 L/min (143 Hz)

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 7.6 °C
pH: 6.54
Conductivity: 0.094 millimhos/cm
Redox Potential: 93 millivolts
Odor: None Noticeable
Appearance: clean

Sample Number: 95FRGW166WA

Time of Sampling: 1008 - 1020 21 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (141 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3450
10 Oct. 95

Sampling Point: 2-inch monitoring well
Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 23.48 ft
Casing top/bottom: 29.3 ft (from record)
Purge Volume: 13 L
Purge Rate: 1.3 L/min (138 Hz)
Sampled By: B. Walters / J. Venner

Physical Parameters and Observations at time of Sample Collection

Temperature: 6.1 °C
pH: 6.91
Conductivity: 0.093 millimhos/cm
Redox Potential: 269 millivolts
Odor: None Noticeable
Appearance: Cloudy Brown

Sample Number: 95FRGW127WA

Time of Sampling: 1502 - 1507 10 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (136 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3451
20 Oct. 95

FTR 0027922

Sampling Point: 2-inch monitoring well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser, Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 13.24 ft

Casing top/bottom: 19.3 ft (from records)

Purge Volume: 12 L

Purge Rate: 1.0 L/min (82 Hz)

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 7.1 °C
pH: 7.09
Conductivity: 0.107 millimhos/cm
Redox Potential: 123 millivolts
Odor: None Noticeable
Appearance: clean

Sample Number: 95FRGW161WA

Time of Sampling: 1200 - 1213 20 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (80 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3452
10 Oct. 95

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube. Well was purged dry 3 times.

Casing top/water: 30.76 ft

Casing top/bottom: 38.7 ft (from records)

Purge Volume: 15 L

Purge Rate: .31 L/min

Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 6.5 °C
pH: 6.72
Conductivity: 0.167 millimhos/cm
Redox Potential: 87 millivolts
Odor: None Noticeable
Appearance: very high turbidity

Sample Number: 95FRGW137WA

Time of Sampling: 1723 - 1728 10 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3453
19 Oct. 95

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 27.65 ft

Casing top/bottom: 35.8 ft (from records)

Purge Volume: 20 L

Purge Rate: .95 L/min (117 Hz)

Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 4.2 °C

pH: 6.19

Conductivity: 0.098 millimhos/cm

Redox Potential: 80 millivolts

Odor: None Noticeable

Appearance: Very dirty but clean by sample time

Sample Number: 95FRGW152WA

Time of Sampling: 1046 - 1054 19 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (115 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons

8260 Volatile Organic Compounds

8015 Gasoline Range Organics
(modified ADEC version)

8100 Diesel Range Organics
(modified ADEC version)

23 TAL Metals, total

23 TAL Metals, dissolved

Disposition of Purge Water: Containized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3454
21 Oct. 95

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 20.70 ft
Casing top/bottom: 28.3 ft (from records)
Purge Volume: 27 L
Purge Rate: 1.04 L (100 Hz)
Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 6.9 °C
pH: 6.46
Conductivity: 0.111 millimhos/cm
Redox Potential: 100 millivolts
Odor: None Noticeable
Appearance:

Sample Number: 95FRGW163WA MS/MSD
95FRGW217WA Rinsate
95FRGW218WA Rinsate

Time of Sampling: 1049 - 1105 21 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (98 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3455
8 Oct. 95
Antenna Road

Sampling Point: 2-inch Flush Mount Monitoring Well
Equipment: Purged & Sampled with a disposable Teflon Boiler.

Casing top/water: 77.67 ft.
Casing top/bottom: 84.1 ft (from records)
Purge Volume: 15 L
Purge Rate: .58 L/min (228 Hz)
Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 5.1 °C
pH: 7.43
Conductivity: 0.363 millimhos/cm
Redox Potential: 56 millivolts
Odor: None Noticeable
Appearance: Clear

Sample Number: 95FRGW133WA

Time of Sampling: 1128-1140 8 Oct, 95

Rate of Sampling: 0.5L/min

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3457
12 Oct. 95

Sampling Point: 2-inch monitoring well

Equipment: Pulled dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II) and PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube. Purged and sampled with disposable Teflon bailer. Has a very slow recharge rate.

Casing top/water: 40.37 ft

Casing top/bottom: 51.25ft (from record)

Purge Volume: 21 L

Purge Rate: 0.4 L/min

Sampled By: B. Walters / J. Venner

Physical Parameters and Observations at time of Sample Collection

Temperature: 4.4 °C
pH: 7.26
Conductivity: 0.246 millimhos/cm
Redox Potential: 318 millivolts
Odor: None Noticeable
Appearance: light brown

Sample Number: 95FRGW139WA

Time of Sampling: 1300 - 1340 12 Oct. 95

Rate of Sampling: Less than 1 L/min

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3458
13 Oct. 95

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 26.45 ft
Casing top/bottom: 38.00 ft (from records)
Purge Volume: 22 L
Purge Rate: .28 L/min
Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 12.1 °C
pH: 6.59
Conductivity: 0.298 millimhos/cm
Redox Potential: -14 millivolts
Odor: strong fuel odor
Appearance: Very clean and Clear

Sample Number: 95FRGW140WA
95FRGW141WA
95FRGW142WA

Time of Sampling: 1219 - 1306 13 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved
8080 PCBs

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3459

13 Oct. 95

Sampling Point: 2-inch monitoring well**Equipment:** Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 10.30 ft

Casing top/bottom: 16.5 ft (from record)

Purge Volume: 12 L

Purge Rate: 0.8 L/min

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature:	8.9 °C
pH:	6.9
Conductivity:	0.147 millimhos/cm
Redox Potential:	308 millivolts
Odor:	None Noticeable
Appearance:	Clear

Sample Number: 95FRGW148WA

Time of Sampling: 1532 - 1548 13 Oct. 95

Rate of Sampling: Less than .5 L/min

Analysis Requested:

- 8310 Polyaromatic Hydrocarbons
- 8260 Volatile Organic Compounds
- 8015 Gasoline Range Organics
(modified ADEC version)
- 8100 Diesel Range Organics
(modified ADEC version)
- 23 TAL Metals, total
- 23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3470
5 Oct. 95

Sampling Point: 2-inch monitoring well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser, Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 28.27 ft

Casing top/bottom: 47.20 ft (from record)

Purge Volume: 35 L

Purge Rate: 1.0 L/min (117 Hz)

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 6.3 °C

pH: 7.29

Conductivity: 0.23 millimhos/cm

Redox Potential: 294 millivolts

Odor: None Noticeable

Appearance: clear

Sample Number: 95FRGW117WA

Time of Sampling: 1401 - 1410 5 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (115 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons

8260 Volatile Organic Compounds

8015 Gasoline Range Organics
(modified ADEC version)

8100 Diesel Range Organics
(modified ADEC version)

23 TAL Metals, total

23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3471
6 Oct. 95
Ammo Area A

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BM/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 91.69 ft
Casing top/bottom: 104.6 ft
Purge Volume: 35 L
Purge Rate: 1.25 L/min (229 Hz)
Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature:	7.1 °C
pH:	7.36
Conductivity:	0.442 millimhos/cm
Redox Potential:	89 millivolts
Odor:	None Noticeable
Appearance:	Very Clean

Sample Number: 95FRGW121WA

Time of Sampling: 1130 - 1141 6 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min) (227 Hz)

Analysis Requested:

- 8310 Polyaromatic Hydrocarbons
- 8260 Volatile Organic Compounds
- 8015 Gasoline Range Organics
(modified ADEC version)
- 8100 Diesel Range Organics
(modified ADEC version)
- 23 TAL Metals, total
- 23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3472
6 Oct. 95
Ammo Area A

Sampling Point: 2-inch monitoring well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 126.82 ft

Casing top/bottom: 142.30 ft (from record)

Purge Volume: 30 L

Purge Rate: 1.0 L/min (142 Hz)

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 8.3 °C
pH: 7.31
Conductivity: 0.3 millimhos/cm
Redox Potential: 177 millivolts
Odor: None Noticeable
Appearance: clear

Sample Number: 95FRGW124WA

Time of Sampling: 1129 - 1138 6 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (140 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3473
5 Oct. 95
North Cemetary

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube. Well pumped roughly, in spurts.

Casing top/water: 176.8 ft
Casing top/bottom: 193.85 ft (from records)
Purge Volume: 35 L
Purge Rate: 1.00 L/min
Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature:	7.7 °C
pH:	7.67
Conductivity:	0.263 millimhos/cm
Redox Potential:	73 millivolts
Odor:	None Noticeable
Appearance:	Clear

Sample Number: 95FRGW119WA

Time of Sampling: 1232 - 1240 5 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min)

Analysis Requested: 5 Oct. 95

- 8310 Polyaromatic Hydrocarbons
- 8260 Volatile Organic Compounds
- 8015 Gasoline Range Organics
(modified ADEC version)
- 8100 Diesel Range Organics
(modified ADEC version)
- 23 TAL Metals, total
- 23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3474
24 Oct. 95

Sampling Point: 2-inch monitoring well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 112.70 ft

Casing top/bottom: 131.5 ft (from records)

Purge Volume: 35 L

Purge Rate: 1.1 L/min

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 10.4 °C

pH: 7.65

Conductivity: 0.294 millimhos/cm

Redox Potential: 99 millivolts

Odor: None Noticeable

Appearance: clear

Sample Number: 95FRGW114WA

Time of Sampling: 1117 - 1125 24 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow

Analysis Requested:

- 8310 Polyaromatic Hydrocarbons
- 8260 Volatile Organic Compounds
- 8015 Gasoline Range Organics
(modified ADEC version)
- 8100 Diesel Range Organics
(modified ADEC version)
- 23 TAL Metals, total
- 23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3475
17 Oct. 95
Davis and 6th Ave.

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 152.67 ft
Casing top/bottom: 172.4 ft (from records)
Purge Volume: 46 L
Purge Rate: 1.05 L/min (271 Hz)
Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature:	8.1 °C
pH:	6.88
Conductivity:	0.308 millimhos/cm
Redox Potential:	87 millivolts
Odor:	None Noticeable
Appearance:	slightly turbid

Sample Number: 95FRGW147WA

Time of Sampling: 1244 - 1258 17 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (256 Hz)

Analysis Requested:

- 8310 Polyaromatic Hydrocarbons
- 8260 Volatile Organic Compounds
- 8015 Gasoline Range Organics
(modified ADEC version)
- 8100 Diesel Range Organics
(modified ADEC version)
- 23 TAL Metals, total
- 23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3476
5 Oct. 95

Sampling Point: 2-inch monitoring well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 132.87 ft

Casing top/bottom: 151.80 ft (from record)

Purge Volume: 35 L

Purge Rate: 1.0 L/min (250 Hz)

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 2.3 °C
pH: 7.35
Conductivity: 0.45 millimhos/cm
Redox Potential: 281 millivolts
Odor: None Noticeable
Appearance: clear

Sample Number: 95FRGW118WA

Time of Sampling: 1601 - 1615 5 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (248 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3477
5 Oct. 95

Sampling Point: 2-inch monitoring well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 147.74 ft

Casing top/bottom: 170.70 ft (from record)

Purge Volume: 45 L

Purge Rate: 1.0 L/min (260 Hz)

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature:	3.9 °C
pH:	7.15
Conductivity:	0.17 millimhos/cm
Redox Potential:	253 millivolts
Odor:	None Noticeable
Appearance:	clear/cloudy and then clear when sampled

Sample Number: 95FRGW116WA

Time of Sampling: 1216 - 1230 5 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (258 Hz)

Analysis Requested:

- 8310 Polyaromatic Hydrocarbons
- 8260 Volatile Organic Compounds
- 8015 Gasoline Range Organics
(modified ADEC version)
- 8100 Diesel Range Organics
(modified ADEC version)
- 23 TAL Metals, total
- 23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3478
5 Oct. 95

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser, Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 43.5 ft

Casing top/bottom: 108.5 ft (from records)

Purge Volume: 123 L

Purge Rate: .80 L/min (184 Hz)

Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 7.3 °C
pH: 8.2
Conductivity: 0.239 millimhos/cm
Redox Potential: 55 millivolts
Odor: None Noticeable
Appearance: Clean

Sample Number: 95FRGW120WA

Time of Sampling: 1455 - 1502 5 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min) (181 Hz)

Analysis Requested: 3 Oct. 95

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3479
19 Oct. 95
Dyea and 6th

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 18.98 ft
Casing top/bottom: 79.0 ft (from records)
Purge Volume: 122 L
Purge Rate: 1.02 L/min (101Hz)
Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 5.8 °C
pH: 7.49
Conductivity: 0.181 millimhos/cm
Redox Potential: 76 millivolts
Odor: None Noticeable
Appearance: Clear

Sample Number: 95FRGW153WA

Time of Sampling: 1416 - 1425 19 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min) (99 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3480
6 Oct. 95

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser, Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 105.50 ft
Casing top/bottom: 117.1 ft (from records)
Purge Volume: 24 L
Purge Rate: 1.0 L/min (218 Hz)
Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 7.6 °C
pH: 7.51
Conductivity: 0.413 millimhos/cm
Redox Potential: 50 millivolts
Odor: None Noticeable
Appearance: Very Clean

Sample Number: 95FRGW123WA

Time of Sampling: 1447 - 1458 6 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min) (216 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissoived.

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3481
8 Oct. 95

Sampling Point: 2-inch monitoring well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 79.99 ft

Casing top/bottom: 96.0 ft (from record)

Purge Volume: 40 L

Purge Rate: 1.0 L/min (256 Hz)

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature:	10.6 °C
pH:	7.09
Conductivity:	0.13 millimhos/cm
Redox Potential:	189 millivolts
Odor:	None Noticeable
Appearance:	clear

Sample Number: 95FRGW130WA

Time of Sampling: 1135 - 1145 8 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (254 Hz)

Analysis Requested:

- 8310 Polyaromatic Hydrocarbons
- 8260 Volatile Organic Compounds
- 8015 Gasoline Range Organics
(modified ADEC version)
- 8100 Diesel Range Organics
(modified ADEC version)
- 23 TAL Metals, total
- 23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3482
6 Oct. 95

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homeight 4000 watt, 240 volt, 8 hp generator, Grundfos GBMI/MP1 voltage control box; Teflon Sampling tube.

Casing top/water: 34.3 ft.

Casing top/bottom: 105 ft (from records)

Purge Volume: 125 L

Purge Rate: 1.0 L/min (129 Hz)

Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 6.2 °C
pH: 7.99
Conductivity: 0.195 millimhos/cm
Redox Potential: 64 millivolts
Odor: None Noticeable
Appearance: Very Clean

Sample Number: 95FRGW134WA

Time of Sampling: 1358 - 1405 6 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3483
17 Oct. 95

Sampling Point: 2-inch monitoring well
Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 92.64 ft
Casing top/bottom: 117.00 ft (from record)
Purge Volume: 45 L
Purge Rate: 1.0 L/min (283 Hz)
Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 9.7 °C
pH: 7.64
Conductivity: 0.218 millimhos/cm
Redox Potential: 304 millivolts
Odor: None Noticeable
Appearance: started cloudy clear when sample

Sample Number: 95FRGW129WA

Time of Sampling: 1525 - 1540 17 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (269 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3484
17 Oct. 95

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser, Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 81.6 ft

Casing top/bottom: 100.0 ft (from records)

Purge Volume: 40 L

Purge Rate: 1.11 L/min (201 Hz)

Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 10 °C

pH: 7.53

Conductivity: 0.341 millimhos/cm

Redox Potential: 83 millivolts

Odor: None Noticeable

Appearance: Not Reported

Sample Number: 95FRGW113WA

Time of Sampling: 1446 - 1454 17 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min) (197 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons

8260 Volatile Organic Compounds

8015 Gasoline Range Organics
(modified ADEC version)

8100 Diesel Range Organics
(modified ADEC version)

23 TAL Metals, total

23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3485
8 Oct. 95

Sampling Point: 2-inch monitoring well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 51.98 ft

Casing top/bottom: 108.20 ft (from record)

Purge Volume: 110 L

Purge Rate: 1.0 L/min (201 Hz)

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 8.2 °C
pH: 7.74
Conductivity: 0.18 millimhos/cm
Redox Potential: 298 millivolts
Odor: None Noticeable
Appearance: clear

Sample Number: 95FRGW131WA

Time of Sampling: 1423 - 1445 8 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (199 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3530
6 Oct. 95
Bldg. 55-955

Sampling Point: 2-inch Flush Mount Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 111.0 ft
Casing top/bottom: 122 ft (from records)
Purge Volume: 22 L
Purge Rate: .88 L/min (228 Hz)
Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 8.9 °C
pH: 7.53
Conductivity: 0.414 millimhos/cm
Redox Potential: 84 millivolts
Odor: None Noticeable
Appearance: Very Clean

Sample Number: 95FRGW122WA

Time of Sampling: 1307 - 1315 6 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min) (224 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3531
6 Oct. 95
Bldg. 55-955

Sampling Point: 2-inch monitoring well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser, Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 114.97 ft

Casing top/bottom: 122.00 ft (from record)

Purge Volume: 15 L

Purge Rate: 1.0 L/min (229 Hz)

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 8.3 °C
pH: 7.39
Conductivity: 0.27 millimhos/cm
Redox Potential: 167 millivolts
Odor: None Noticeable
Appearance: clear

Sample Number: 95FRGW125WA

Time of Sampling: 1307 - 1320 6 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (227 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3532
18 Oct. 95
Bldg. 740

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 111.0 ft

Casing top/bottom: 135.0 ft (from records)

Purge Volume: 48 L

Purge Rate: 1.04 L/min (229 Hz)

Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 9.2 °C
pH: 6.99
Conductivity: 0.28 millimhos/cm
Redox Potential: 56 millivolts
Odor: None Noticeable
Appearance:

Sample Number: 95FRGW155WA MS/MSD
95FRGW156WA MS/MSD
95FRGW157WA

Time of Sampling: 1235 - 1308 18 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (227 Hz)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

AP-3533
17 Oct. 95
Bldg. 796

Sampling Point: 2-inch monitoring well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

Casing top/water: 99.57 ft

Casing top/bottom: 133.00 ft (from record)

Purge Volume: 61 L

Purge Rate: 1.0 L/min (310 Hz)

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature:	15.7 °C
pH:	7.34
Conductivity:	0.359 millimhos/cm
Redox Potential:	223 millivolts
Odor:	None Noticeable
Appearance:	clear

Sample Number: 95FRGW128WA

Time of Sampling: 1352 - 1404 16 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (308 Hz)

Analysis Requested:

- 8310 Polyaromatic Hydrocarbons
- 8260 Volatile Organic Compounds
- 8015 Gasoline Range Organics
(modified ADEC version)
- 8100 Diesel Range Organics
(modified ADEC version)
- 23 TAL Metals, total
- 23 TAL Metals, dissolved

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

FR-1
3 Oct. 95 & 11 Oct. 95
Landfill Well

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt, generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

3 Oct. 95	11 Oct. 95
Casing top/water: 131.11 ft	130.96 ft
Casing top/bottom: 149.00 ft (from record)	149.00 ft (from record)
Purge Volume: 35 L	35 L
Purge Rate: 1.0 L/min	1.0 L/min
Sampled By: B. Walters / M. Jemin	B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature:	4.7 °C	10.7
pH:	7.06	7.22
Conductivity:	0.24 millimhos/cm	0.265
Redox Potential:	224 millivolts	327
Odor:	None Noticeable	None Noticeable
Appearance:	clear	clear

Sample Number: 95FRGW102WA

Time of Sampling: 1443 - 1500 3 Oct. 95 1247 - 1258 11 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (240Hz, 319Hz)

Analysis Requested: 3 Oct. 95

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved
8080 PCBs and Pesticides
418.1 Total Recoverable Petroleum Hydrocarbons
351.1 TKN
365.1 Phosphate
350.3 Ammonium Nitrogen
353.3 Nitrate/Nitrite
375.4 Sulfate
325.1 Chloride
310.1 Alkalinity
160.1 Total Dissolved Solids
425.1 MBAS
415.1 Total Organic Carbon
410.1 Chemical Oxygen Demand
405.1 Biological Oxygen Demand
130.1 Hardness
180.1 Turbidity

11 Oct. 95

Corrosivity / Langier Index
Fecal Coliform
8151 Chlorinated Herbicides
9012 Cyanide
8141A Organophosphorus Pesticides
8151 Chlorinated Herbicides
8270 Semivolatile Organic Compounds
w/o PAHs

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

FR-2
3 Oct. 95 & 11 Oct. 95
Landfill Well

Sampling Point: 2-inch Monitoring Well

Equipment: Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 5000 watt, 240 volt, generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

3 Oct. 95	11 Oct. 95
Casing top/water: 147.60 ft	147.48 ft
Casing top/bottom: 167.0 ft (from record)	167.0 ft (from record)
Purge Volume: 45 L	40 L
Purge Rate: 1.32 L/min	1.0 L/min
Sampled By: B. Walters / M. Jemin	B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature:	5.3 °C	10.3
pH:	7.01	7.21
Conductivity:	0.26 millimhos/cm	0.296
Redox Potential:	298 millivolts	213
Odor:	None Noticeable	None Noticeable
Appearance:	clear	clear

Sample Number: 95FRGW101WA

Time of Sampling: 1230 - 1255 3 Oct. 95 | 1057 - 1110 11 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (158Hz, 338Hz)

Analysis Requested: 3 Oct. 95	11 Oct. 95	
8310 Polyaromatic Hydrocarbons		Corrosivity Langier Index
8260 Volatile Organic Compounds		Fecal Coliform
8015 Gasoline Range Organics (modified ADEC version)		Chlorinated Herbicides
8100 Diesel Range Organics (modified ADEC version)		Cyanide
23 TAL Metals, total		Organophosphorus Pesticides
23 TAL Metals, dissolved		
8080 PCBs and Pesticides		
418.1 Total Recoverable Petroleum Hydrocarbons		
351.1 TKN		
365.1 Phosphate		
350.3 Ammonium Nitrogen		
353.3 Nitrate/Nitrite		
375.4 Sulfate		
325.1 Chloride		
310.1 Alkalinity		
160.1 Total Dissolved Solids		
425.1 MBAS		
415.1 Total Organic Carbon		
410.1 Chemical Oxygen Demand		
405.1 Biological Oxygen Demand		
130.1 Hardness		
180.1 Turbidity		

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

FR-3

4 Oct. 95 & 16 Oct. 95

Sampling Point: 2-inch Monitoring Well**Equipment:** Dedicated 2-inch stainless steel submersible pump (Grundfos RediFlow II); PVC riser; Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Teflon sampling tube.

4 Oct. 95	16 Oct. 95
Casing top/water: 147.74 ft	147.5
Casing top/bottom: 171.70 ft (from records)	171.7 ft (from records)
Purge Volume: 45 L	52 L
Purge Rate: 1.0 L/min	.86 L/min
Sampled By: B. Walters	R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature:	5.7 °C	10
pH:	7.31	7.76
Conductivity:	0.25 millimhos/cm	0.253
Redox Potential:	182 millivolts	64
Odor:	None Noticeable	None Noticeable
Appearance:	slightly milky	slightly milky

Sample Number: 95FRGW107WA

Time of Sampling: 1402 - 1425 4 Oct. 95 | 1508 - 1516 16 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow (270 Hz)

Analysis Requested: 4 Oct. 95	16 Oct. 95
8310 Polyaromatic Hydrocarbons	Corrosivity Langier Index
8260 Volatile Organic Compounds	Fecal Coliform
8015 Gasoline Range Organics (modified ADEC version)	Chlorinated Herbicides
8100 Diesel Range Organics (modified ADEC version)	Cyanide
23 TAL Metals, total	Organophosphorus Pesticides
23 TAL Metals, dissolved	
8310 Polyaromatic Hydrocarbons	
8080 PCBs and Pesticides	
418.1 Total Recoverable Petroleum Hydrocarbons	
351.1 TKN	
365.1 Phosphate	
350.3 Ammonium Nitrogen	
353.3 Nitrate/Nitrite	
375.4 Sulfate	
325.1 Chloride	
310.1 Alkalinity	
160.1 Total Dissolved Solids	
425.1 MBAS	
415.1 Total Organic Carbon	
410.1 Chemical Oxygen Demand	
405.1 Biological Oxygen Demand	
130.1 Hardness	
180.1 Turbidity	

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

Otter Lake
27 Oct. 95
Otter Lake Lodge Supply Well

Sampling Point: Collected from spigot in crawl space, upline from chlorinator. Chlorinator turned off.

Equipment: Samples collected directly from spigot.

Purge Volume: Sink faucet in restroom allowed to run for 22 min prior to sampling to draw water through system; spigot at sampling point flushed for 20 minutes to clear lines.

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 4.7 °C
pH: 7.15
Conductivity: 0.215 millimhos/cm
Redox Potential: 112 millivolts
Odor: None Noticeable
Appearance: clear

Sample Number: 95FRGW167WA

Time of Sampling: 1011 - 1023 27 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Purge water from spigot discharged to sink drain, water from spigot discharged down floor drain

TW-1
10 Oct. 95

Sampling Point: 6-inch Monitoring Well

Equipment: Dedicated 6-inch Grundfos pump was removed and well was purged with portable submersible stainless steel pump. (Grundfos Reel-Eze) with Homelight 4000 watt, 240 volt, 8 hp generator, Grundfos BMI/MP1 voltage control box; Sampled with a disposable Teflon bailer.

Casing top/water: 22.91 ft
Casing top/bottom: 252.4 ft (from records)
Purge Volume: 1200 L
Purge Rate: 5.71 L/min (255 Hz)
Sampled By: R. Ragle

Physical Parameters and Observations at time of Sample Collection

Temperature: 4.6 °C
pH: 7.67
Conductivity: 0.275 millimhos/cm
Redox Potential: 15 millivolts
Odor: None Noticeable
Appearance: dirty cleaned up after 750 L

Sample Number: 95FRGW136WA

Time of Sampling: 1406 - 1417 10 Oct. 95

Rate of Sampling: slowest unbroken flow (less than 1L/min)

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Water discharged onto ground.

Disposition of Purge Water: Containerized and turned in to DPW at Bldg. 45-125, pending results of analysis

Well 1**20 Oct. 95****Post Supply Well - Bldg 35-610**

Sampling Point: Spigot in water main just downline from well head. Well in operation prior to and during visit, flow rate 600 gal/min.

Equipment: Samples collected directly from spigot, no chlorination equipment at this well.

Casing top/water: 37 ft (from DPW records)

Casing top/bottom: 162 ft (from DPW records)

Purge Volume: 13,630 L

Purge Rate: 2271 L/min

Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 4.8 °C

pH: 7.37

Conductivity: 0.143 millimhos/cm

Redox Potential: 113 millivolts

Odor: None Noticeable

Appearance: clean

Sample Number: 95FRGW160WA

Time of Sampling: 1059 - 1114 20 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow

Analysis Requested:

8310 Polyaromatic Hydrocarbons

8260 Volatile Organic Compounds

8015 Gasoline Range Organics
(modified ADEC version)

8100 Diesel Range Organics
(modified ADEC version)

23 TAL Metals, total

23 TAL Metals, dissolved

Disposition of Purge Water: Disposed of down floor drain with permission of maintenance personnel.

Well 3
20 Oct. 95
Post Supply Well - Bldg 35-630

Sampling Point: Spigot in water main just downline from well head. Well not in operation prior to visit; pump started at 1022, allowed to run at 1200 gal/min (normal operating rate) for 14 min.
Equipment: Samples collected directly from spigot, no chlorination equipment at this well.

Casing top/water: 20 ft (from DPW records)
Casing top/bottom: 138 ft (from DPW records)
Purge Volume: 63,600 L
Purge Rate: 4542 L/min
Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 4.8 °C
pH: 7.21
Conductivity: 0.143 millimhos/cm
Redox Potential: 120 millivolts
Odor: None Noticeable
Appearance: clean

Sample Number: 95FRGW159WA

Time of Sampling: 1036 - 1043 20 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Disposed of down floor drain with permission of maintenance personnel.

Well B
24 Oct. 95

Sampling Point: 6-inch diameter former supply well converted to monitoring well; well is located in an open concrete shed.

Equipment: Well contains a 4-inch diameter single speed submersible pump; Homelight 5000-watt 240-volt generator; Teflon sample hose.

Casing top/water: 97.85 ft
Casing top/bottom: 140.0 ft (from records)
Purge Volume: 757 L
Purge Rate: 11.6 L/min
Sampled By: B. Walters

Physical Parameters and Observations at time of Sample Collection

Temperature: 3.8 °C
pH: 7.86
Conductivity: 0.207 millimhos/cm
Redox Potential: 103 millivolts
Odor: None Noticeable
Appearance: clear

Sample Number: 95FRGW174WA

Time of Sampling: 1325 - 1340 24 Oct. 95

Rate of Sampling: Slowest sustainable non turbulent flow

Analysis Requested:

8310 Polyaromatic Hydrocarbons
8260 Volatile Organic Compounds
8015 Gasoline Range Organics
(modified ADEC version)
8100 Diesel Range Organics
(modified ADEC version)
23 TAL Metals, total
23 TAL Metals, dissolved

Disposition of Purge Water: Discharged to ground; most escapes through drainhole in shed floor.

Appendix C

**Chemical Data Tables
Fall 1994**

Table 1

Page 1 of 60

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	A-1	A-6	ADFG-9	ADFG-C
DATE OF SAMPLING:	10/10/95	10/10/95	10/20/95	10/20/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	132WA	126WA	165WA	162WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506410-005	K9506410-003	K9506697-009	K9506697-007
DATE RECEIVED:	10/12/95	10/12/95	10/24/95	10/24/95
DATE TESTED:	10/20/95	10/20/95	11/03/95	11/03/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2,4-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2-Butanone	ND (20)	ND (20)	ND (20)	ND (20)
2-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
2-Hexanone	ND (20)	ND (20)	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (20)	ND (20)	ND (20)	ND (20)

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	A-1	A-6	ADFG-9	ADFG-C
DATE OF SAMPLING:	10/10/95	10/10/95	10/20/95	10/20/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	132WA	126WA	165WA	162WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506410-005	K9506410-003	K9506697-009	K9506697-007
DATE RECEIVED:	10/12/95	10/12/95	10/24/95	10/24/95
DATE TESTED:	10/20/95	10/20/95	11/03/95	11/03/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	1 J,B	2 J,B	2 J,B	2 J,B
Benzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon disulfide	0.3 J,B	ND (0.5)	ND (0.5)	ND (0.5)
Carbon tetrachloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloromethane	0.2 J	ND (0.5)	ND (0.5)	ND (0.5)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (2)	ND (2)	ND (2)
Isopropylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
Methylene chloride	ND (1)	ND (1)	0.1 J,B	0.1 J,B
Naphthalene	ND (2)	ND (2)	ND (2)	ND (2)
Styrene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

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LOCATION:	A-1	A-6	ADFG-9	ADFG-C
DATE OF SAMPLING:	10/10/95	10/10/95	10/20/95	10/20/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	132WA	126WA	165WA	162WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506410-005	K9506410-003	K9506697-009	K9506697-007
DATE RECEIVED:	10/12/95	10/12/95	10/24/95	10/24/95
DATE TESTED:	10/20/95	10/20/95	11/03/95	11/03/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	NT	NT	NT
n-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	NT	NT	NT	NT
sec-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
TIC's:	2	2	0	0
Total TIC Concentration	7	11	0	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

LOCATION:	ADFG-K	AK-2127
DATE OF SAMPLING:	10/20/95	10/19/95
TYPE OF SAMPLE:	Water	Water
FIELD SAMPLE #: 95FRGW	164WA	154WA
TESTING LABORATORY:	CAS	CAS
LABORATORY SAMPLE #:	K9506697-008	K9506697-005
DATE RECEIVED:	10/24/95	10/24/95
DATE TESTED:	11/03/95	11/02/95
CONCENTRATION UNITS:	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ND (0.5)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (2)
1,2,4-Trimethylbenzene	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (0.5)
2-Butanone	ND (20)	ND (20)
2-Chlorotoluene	ND (2)	ND (2)
2-Hexanone	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (20)	ND (20)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

LOCATION:	ADFG-K	AK-2127
DATE OF SAMPLING:	10/20/95	10/19/95
TYPE OF SAMPLE:	Water	Water
FIELD SAMPLE #: 95FRGW	164WA	154WA
TESTING LABORATORY:	CAS	CAS
LABORATORY SAMPLE #:	K9506697-008	K9506697-005
DATE RECEIVED:	10/24/95	10/24/95
DATE TESTED:	11/03/95	11/02/95
CONCENTRATION UNITS:	ug/L	ug/L
Acetone	2 J,B	2 J,B
Benzene	ND (0.5)	ND (0.5)
Bromobenzene	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (0.5)
Bromoform	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (0.5)
Carbon disulfide	ND (0.5)	0.2 J
Carbon tetrachloride	ND (0.5)	ND (0.5)
Chlorobenzene	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (0.5)
Chloroform	ND (0.5)	0.1 J
Chloromethane	ND (0.5)	ND (0.5)
Dibromochloromethane	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (0.5)
Ethylbenzene	ND (0.5)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (2)
Isopropylbenzene	ND (2)	ND (2)
Methylene chloride	0.1 J,B	0.2 J,B
Naphthalene	ND (2)	ND (2)
Styrene	ND (0.5)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (0.5)
Toluene	ND (0.5)	ND (0.5)
Trichloroethene	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (0.5)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

LOCATION:	ADFG-K	AK-2127
DATE OF SAMPLING:	10/20/95	10/19/95
TYPE OF SAMPLE:	Water	Water
FIELD SAMPLE #: 95FRGW	164WA	154WA
TESTING LABORATORY:	CAS	CAS
LABORATORY SAMPLE #:	K9506697-008	K9506697-005
DATE RECEIVED:	10/24/95	10/24/95
DATE TESTED:	11/03/95	11/02/95
CONCENTRATION UNITS:	ug/L	ug/L
Xylenes	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	NT
n-Butylbenzene	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (2)
o-Xylene	NT	NT
sec-Butylbenzene	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (0.5)
TIC's:	0	0
Total TIC Concentration	0	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

		QA Dup	QC Dup
LOCATION:	AP-2974	AP-2974	AP-2974
DATE OF SAMPLING:	10/25/95	10/25/95	10/25/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	177W	178WA	179W
TESTING LABORATORY:	CAS	NET	CAS
LABORATORY SAMPLE #:	K9506786-001	254454	K9506786-002
DATE RECEIVED:	10/27/95	10/28/95	10/27/95
DATE TESTED:	11/07/95	10/30/95	11/07/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (1)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (1)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (1)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (1)	ND (0.5)
1,1-Dichloroethane	ND (0.5)	ND (1)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (1)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (1)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (1)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (1)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (1)	ND (2)
1,2,4-Trimethylbenzene	ND (2)	ND (1)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (1)	ND (2)
1,2-Dibromoethane	ND (2)	ND (1)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (1)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (1)	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (1)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (1)	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (1)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (1)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (1)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (1)	ND (0.5)
2-Butanone	ND (20)	ND (2)	ND (20)
2-Chlorotoluene	ND (2)	ND (1)	ND (2)
2-Hexanone	ND (20)	NT	ND (20)
4-Chlorotoluene	ND (2)	ND (1)	ND (2)
4-Isopropyltoluene	ND (2)	ND (1)	ND (2)
4-Methyl-2-pentanone	ND (20)	NT	ND (20)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

		QA Dup	QC Dup
LOCATION:	AP-2974	AP-2974	AP-2974
DATE OF SAMPLING:	10/25/95	10/25/95	10/25/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	177W	178WA	179W
TESTING LABORATORY:	CAS	NET	CAS
LABORATORY SAMPLE #:	K9506786-001	254454	K9506786-002
DATE RECEIVED:	10/27/95	10/28/95	10/27/95
DATE TESTED:	11/07/95	10/30/95	11/07/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Acetone	2 J,B	ND (8)	2 J,B
Benzene	ND (0.5)	ND (1)	ND (0.5)
Bromobenzene	ND (0.5)	ND (1)	ND (0.5)
Bromochloromethane	0.1 J	ND (1)	0.1 J
Bromodichloromethane	ND (0.5)	ND (1)	ND (0.5)
Bromoform	ND (0.5)	ND (1)	ND (0.5)
Bromomethane	ND (0.5)	ND (1)	ND (0.5)
Carbon disulfide	ND (0.5)	NT	ND (0.5)
Carbon tetrachloride	0.7	ND (1)	0.7
Chlorobenzene	ND (0.5)	ND (1)	ND (0.5)
Chloroethane	ND (0.5)	ND (1)	ND (0.5)
Chloroform	0.5 J	ND (1)	0.5
Chloromethane	ND (0.5)	ND (1)	ND (0.5)
Dibromochloromethane	ND (0.5)	ND (1)	ND (0.5)
Dibromomethane	ND (0.5)	ND (1)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (1)	ND (0.5)
Ethylbenzene	ND (0.5)	ND (1)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (1)	ND (2)
Isopropylbenzene	ND (2)	ND (1)	ND (2)
Methylene chloride	ND (20)	ND (1)	ND (20)
Naphthalene	ND (2)	ND (1)	ND (2)
Styrene	ND (0.5)	ND (1)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (1)	ND (0.5)
Toluene	ND (0.5)	ND (1)	ND (0.5)
Trichloroethene	ND (0.5)	ND (1)	ND (0.5)
Trichlorofluoromethane	0.1 J	ND (1)	0.1 J
Vinyl chloride	ND (0.5)	ND (1)	ND (0.5)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

		QA Dup	QC Dup
LOCATION:	AP-2974	AP-2974	AP-2974
DATE OF SAMPLING:	10/25/95	10/25/95	10/25/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	177W	178WA	179W
TESTING LABORATORY:	CAS	NET	CAS
LABORATORY SAMPLE #:	K9506786-001	254454	K9506786-002
DATE RECEIVED:	10/27/95	10/28/95	10/27/95
DATE TESTED:	11/07/95	10/30/95	11/07/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Xylenes	ND (0.5)	NT	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (1)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (1)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	ND (1)	NT
n-Butylbenzene	ND (2)	ND (1)	ND (2)
n-Propylbenzene	ND (2)	ND (4)	ND (2)
o-Xylene	NT	ND (1)	NT
sec-Butylbenzene	ND (2)	ND (1)	ND (2)
tert-Butylbenzene	ND (2)	ND (1)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (1)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (1)	ND (0.5)
TIC's:	2	1	1
Total TIC Concentration	3	5.1	1

CAS: Columbia Analytical Services, Inc. Kelso, WA.

NET: NET Inc., Santa Rosa, CA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-2982	AP-2982	AP-2982	AP-2985
DATE OF SAMPLING:	10/13/95	10/13/95	10/13/95	10/13/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	144WA	145WA	146WA	143WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506552-011	253999	K9506552-012	K9506552-008
DATE RECEIVED:	10/18/95	10/19/95	10/18/95	10/18/95
DATE TESTED:	10/27/95	10/25/95	10/27/95	10/27/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	16 J	11	17 J	ND (0.5)
1,1-Dichloroethane	0.6 J	ND (1.0)	0.6 J	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2,4-Trimethylbenzene	180 D,J	82.0 D	150 D,J	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	1.2 J	ND (1.0)	1.2 J	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	16 J	14	20 J	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
2-Butanone	ND (20)	ND (2.0)	ND (20)	ND (20)
2-Chlorotoluene	ND (2)	ND (1.0)	ND (2)	ND (2)
2-Hexanone	ND (20)	NT	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (1.0)	ND (2)	ND (2)
4-Isopropyltoluene	1.5 J,B	3.3	2 J	ND (2)
4-Methyl-2-pentanone	ND (20)	NT	ND (20)	ND (20)

Table 1

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-2982	AP-2982	AP-2982	AP-2985
DATE OF SAMPLING:	10/13/95	10/13/95	10/13/95	10/13/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	144WA	145WA	146WA	143WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506552-011	253999	K9506552-012	K9506552-008
DATE RECEIVED:	10/18/95	10/19/95	10/18/95	10/18/95
DATE TESTED:	10/27/95	10/25/95	10/27/95	10/27/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	4 J,B	ND (8)	5 J,B	3 J,B
Benzene	110 D,J	37	90 D,J	ND (0.5)
Bromobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromoform	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Carbon disulfide	0.2 J	NT	ND (0.5)	ND (0.5)
Carbon tetrachloride	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Chlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Chloroform	ND (0.5)	ND (1.0)	ND (0.5)	0.3 J
Chloromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Dibromochloromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Ethylbenzene	340 D,J	140.0 D	300 D,J	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (1.0)	ND (2)	ND (2)
Isopropylbenzene	13 J	8.7	15 J	ND (2)
Methylene chloride	ND (1)	ND (1.0)	ND (1)	ND (1)
Naphthalene	87 D,J	32	80 D,J	ND (2)
Styrene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Tetrachloroethene	0.5 J	ND (1.0)	0.5 J	ND (0.5)
Toluene	440 D,J	130.0 D	370 D,J	ND (0.5)
Trichloroethene	1.9 J	1.6	1.9 J	0.6
Trichlorofluoromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)

Table 1

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-2982	AP-2982	AP-2982	AP-2985
DATE OF SAMPLING:	10/13/95	10/13/95	10/13/95	10/13/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	144WA	145WA	146WA	143WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506552-011	253999	K9506552-012	K9506552-008
DATE RECEIVED:	10/18/95	10/19/95	10/18/95	10/18/95
DATE TESTED:	10/27/95	10/25/95	10/27/95	10/27/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	1200 D,J	NT	1100 J	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	330	NT	NT
n-Butylbenzene	ND (2)	2.5	ND (2)	ND (2)
n-Propylbenzene	18 J	12	20 J	ND (2)
o-Xylene	NT	200	NT	NT
sec-Butylbenzene	ND (2)	1.4	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
TIC's:	10	10	10	0
Total TIC Concentration	93	196.5	93	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

NET: NET Inc., Santa Rosa, CA.

D: Analytes analyzed at a secondary dilution.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3010	AP-3011	AP-3013	AP-3014
DATE OF SAMPLING:	10/04/95	10/16/95	10/18/95	10/03/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	109WA	112WA	115WA	104WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500773-8	K9506619-009	K9506619-001	A9500773-4
DATE RECEIVED:	10/05/95	10/20/95	10/20/95	10/05/95
DATE TESTED:	10/06/95	10/29/95	11/01/95	10/05/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (2)	ND (0.5)	ND (0.5)	ND (2)
1,1,2,2-Tetrachloroethane	ND (2)	ND (0.5)	ND (0.5)	ND (2)
1,1,2-Trichloroethane	ND (3)	ND (0.5)	ND (0.5)	ND (3)
1,1,1-Trichloroethane	ND (2)	ND (0.5)	ND (0.5)	ND (2)
1,1-Dichloroethane	ND (2)	ND (0.5)	ND (0.5)	ND (2)
1,1-Dichloroethene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
1,1-Dichloropropene	NT	ND (0.5)	ND (0.5)	NT
1,2,3-Trichlorobenzene	ND (5)	ND (2)	ND (2)	ND (5)
1,2,3-Trichloropropane	ND (5)	ND (0.5)	ND (0.5)	ND (5)
1,2,4-Trichlorobenzene	ND (5)	ND (2)	ND (2)	ND (5)
1,2,4-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
1,2-Dichloroethane	ND (2)	ND (0.5)	ND (0.5)	ND (2)
1,2-Dichloropropane	ND (2)	ND (0.5)	ND (0.5)	ND (2)
1,3,5-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
1,3-Dichloropropane	ND (2)	ND (0.5)	ND (0.5)	ND (2)
1,4-Dichlorobenzene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
2,2-Dichloropropane	ND (4)	ND (0.5)	ND (0.5)	ND (4)
2-Butanone	ND (100)	ND (20)	ND (20)	ND (100)
2-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
2-Hexanone	ND (40)	ND (20)	ND (20)	ND (40)
4-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (40)	ND (20)	ND (20)	ND (40)

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3010	AP-3011	AP-3013	AP-3014
DATE OF SAMPLING:	10/04/95	10/16/95	10/18/95	10/03/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	109WA	112WA	115WA	104WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500773-8	K9506619-009	K9506619-001	A9500773-4
DATE RECEIVED:	10/05/95	10/20/95	10/20/95	10/05/95
DATE TESTED:	10/06/95	10/29/95	11/01/95	10/05/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	ND (120)	8 J,B	2 J,B	ND (120)
Benzene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Bromobenzene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Bromochloromethane	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Bromodichloromethane	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Bromoform	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Bromomethane	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Carbon disulfide	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Carbon tetrachloride	ND (3)	ND (0.5)	ND (0.5)	ND (3)
Chlorobenzene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Chloroethane	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Chloroform	ND (2)	ND (0.5)	0.2 J	ND (2)
Chloromethane	ND (2)	0.3 J	0.2 J	ND (2)
Dibromochloromethane	ND (3)	ND (0.5)	ND (0.5)	ND (3)
Dibromomethane	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Dichlorodifluoromethane	ND (3)	ND (0.5)	ND (0.5)	ND (3)
Ethylbenzene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Hexachlorobutadiene	ND (5)	ND (2)	ND (2)	ND (5)
Isopropylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
Methylene chloride	ND (5)	0.1 J,B	0.2 J,B	ND (5)
Naphthalene	ND (10)	ND (2)	ND (2)	ND (10)
Styrene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Tetrachloroethene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Toluene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Trichloroethene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Trichlorofluoromethane	ND (2)	ND (0.5)	ND (0.5)	ND (2)
Vinyl chloride	ND (2)	ND (0.5)	ND (0.5)	ND (2)

Table 1

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3010	AP-3011	AP-3013	AP-3014
DATE OF SAMPLING:	10/04/95	10/16/95	10/18/95	10/03/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	109WA	112WA	115WA	104WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500773-8	K9506619-009	K9506619-001	A9500773-4
DATE RECEIVED:	10/05/95	10/20/95	10/20/95	10/05/95
DATE TESTED:	10/06/95	10/29/95	11/01/95	10/05/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	ND (2)	ND (0.5)	ND (0.5)	ND (2)
cis-1,2-Dichloroethene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
cis-1,3-Dichloropropene	ND (3)	ND (0.5)	ND (0.5)	ND (3)
m,p-Xylene (Sum of Isomers)	NT	NT	NT	NT
n-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	NT	NT	NT	NT
sec-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (2)	ND (0.5)	ND (0.5)	ND (2)
trans-1,3-Dichloropropene	ND (3)	ND (0.5)	ND (0.5)	ND (3)
TIC's:	0	0	2	0
Total TIC Concentration	0	0	3	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3015	AP-3219	AP-3221
DATE OF SAMPLING:	10/03/95	10/15/95	10/03/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	105WA	111WA	103WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500773-5	K9506552-003	A9500773-3
DATE RECEIVED:	10/05/95	10/18/95	10/05/95
DATE TESTED:	10/05/95	10/29/95	10/05/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (2)	ND (0.5)	ND (2)
1,1,2,2-Tetrachloroethane	ND (2)	ND (0.5)	ND (2)
1,1,2-Trichloroethane	ND (3)	ND (0.5)	ND (3)
1,1,1-Trichloroethane	ND (2)	ND (0.5)	ND (2)
1,1-Dichloroethane	ND (2)	ND (0.5)	ND (2)
1,1-Dichloroethene	ND (2)	ND (0.5)	ND (2)
1,1-Dichloropropene	NT	ND (0.5)	NT
1,2,3-Trichlorobenzene	ND (5)	ND (2)	ND (5)
1,2,3-Trichloropropane	ND (5)	ND (0.5)	ND (5)
1,2,4-Trichlorobenzene	ND (5)	ND (2)	ND (5)
1,2,4-Trimethylbenzene	ND (2)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (2)	ND (0.5)	ND (2)
1,2-Dichloroethane	ND (2)	ND (0.5)	ND (2)
1,2-Dichloropropane	ND (2)	ND (0.5)	ND (2)
1,3,5-Trimethylbenzene	ND (2)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (2)	ND (0.5)	ND (2)
1,3-Dichloropropane	ND (2)	ND (0.5)	ND (2)
1,4-Dichlorobenzene	ND (2)	ND (0.5)	ND (2)
2,2-Dichloropropane	ND (4)	ND (0.5)	ND (4)
2-Butanone	ND (100)	ND (20)	ND (100)
2-Chlorotoluene	ND (2)	ND (2)	ND (2)
2-Hexanone	ND (40)	ND (20)	ND (40)
4-Chlorotoluene	ND (2)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (40)	ND (20)	ND (40)

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3015	AP-3219	AP-3221
DATE OF SAMPLING:	10/03/95	10/15/95	10/03/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	105WA	111WA	103WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500773-5	K9506552-003	A9500773-3
DATE RECEIVED:	10/05/95	10/18/95	10/05/95
DATE TESTED:	10/05/95	10/29/95	10/05/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Acetone	ND (120)	7 J,B	ND (120)
Benzene	ND (2)	ND (0.5)	ND (2)
Bromobenzene	ND (2)	ND (0.5)	ND (2)
Bromochloromethane	ND (2)	ND (0.5)	ND (2)
Bromodichloromethane	ND (2)	ND (0.5)	ND (2)
Bromoform	ND (2)	ND (0.5)	ND (2)
Bromomethane	ND (2)	ND (0.5)	ND (2)
Carbon disulfide	ND (2)	ND (0.5)	ND (2)
Carbon tetrachloride	ND (3)	ND (0.5)	ND (3)
Chlorobenzene	ND (2)	ND (0.5)	ND (2)
Chloroethane	ND (2)	ND (0.5)	ND (2)
Chloroform	ND (2)	ND (0.5)	ND (2)
Chloromethane	ND (2)	1	ND (2)
Dibromochloromethane	ND (3)	ND (0.5)	ND (3)
Dibromomethane	ND (2)	ND (0.5)	ND (2)
Dichlorodifluoromethane	ND (3)	ND (0.5)	3
Ethylbenzene	ND (2)	ND (0.5)	ND (2)
Hexachlorobutadiene	ND (5)	ND (2)	ND (5)
Isopropylbenzene	ND (2)	ND (2)	ND (2)
Methylene chloride	ND (5)	0.2 J,B	ND (5)
Naphthalene	ND (10)	ND (2)	ND (10)
Styrene	ND (2)	ND (0.5)	ND (2)
Tetrachloroethene	ND (2)	ND (0.5)	ND (2)
Toluene	ND (2)	ND (0.5)	ND (2)
Trichloroethene	ND (2)	ND (0.5)	ND (2)
Trichlorofluoromethane	ND (2)	ND (0.5)	ND (2)
Vinyl chloride	ND (2)	ND (0.5)	ND (2)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

LOCATION:	AP-3015	AP-3219	AP-3221
DATE OF SAMPLING:	10/03/95	10/15/95	10/03/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	105WA	111WA	103WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500773-5	K9506552-003	A9500773-3
DATE RECEIVED:	10/05/95	10/18/95	10/05/95
DATE TESTED:	10/05/95	10/29/95	10/05/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Xylenes	ND (2)	ND (0.5)	ND (2)
cis-1,2-Dichloroethene	ND (2)	ND (0.5)	ND (2)
cis-1,3-Dichloropropene	ND (3)	ND (0.5)	ND (3)
m,p-Xylene (Sum of Isomers)	NT	NT	NT
n-Butylbenzene	ND (2)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (2)	ND (2)
o-Xylene	NT	NT	NT
sec-Butylbenzene	ND (2)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (2)	ND (0.5)	ND (2)
trans-1,3-Dichloropropene	ND (3)	ND (0.5)	ND (3)
TIC's:	0	1	0
Total TIC Concentration	0	1	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-3222	AP-3222	AP-3222	AP-3231
DATE OF SAMPLING:	10/15/95	10/15/95	10/15/95	10/13/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	106WA	108WA	110WA	138WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506552-001	254000	K9506552-002	K9506552-004
DATE RECEIVED:	10/18/95	10/19/95	10/18/95	10/18/95
DATE TESTED:	10/29/95	10/25/95	10/29/95	10/27/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2,4-Trimethylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
2-Butanone	ND (20)	ND (2)	ND (20)	ND (20)
2-Chlorotoluene	ND (2)	ND (1.0)	ND (2)	ND (2)
2-Hexanone	ND (20)	NT	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (1.0)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (1.0)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (20)	NT	ND (20)	ND (20)

Table 1

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-3222	AP-3222	AP-3222	AP-3231
DATE OF SAMPLING:	10/15/95	10/15/95	10/15/95	10/13/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	106WA	108WA	110WA	138WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506552-001	254000	K9506552-002	K9506552-004
DATE RECEIVED:	10/18/95	10/19/95	10/18/95	10/18/95
DATE TESTED:	10/29/95	10/25/95	10/29/95	10/27/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	8 J,B	ND (8)	5 J,B	4 J,B
Benzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromoform	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Carbon disulfide	ND (0.5)	NT	ND (0.5)	ND (0.5)
Carbon tetrachloride	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Chlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Chloroform	0.3 J	ND (1.0)	0.3 J	0.4 J
Chloromethane	1.2	ND (1.0)	0.3 J	0.4 J
Dibromochloromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	0.8	ND (1.0)	1.1	ND (0.5)
Ethylbenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (1.0)	ND (2)	ND (2)
Isopropylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
Methylene chloride	0.1 J,B	ND (1.0)	0.2 J,B	ND (1)
Naphthalene	ND (2)	ND (1.0)	ND (2)	ND (2)
Styrene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Toluene	0.2 J	ND (1.0)	0.2 J	ND (0.5)
Trichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	4.7
Trichlorofluoromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-3222	AP-3222	AP-3222	AP-3231
DATE OF SAMPLING:	10/15/95	10/15/95	10/15/95	10/13/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	106WA	108WA	110WA	138WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506552-001	254000	K9506552-002	K9506552-004
DATE RECEIVED:	10/18/95	10/19/95	10/18/95	10/18/95
DATE TESTED:	10/29/95	10/25/95	10/29/95	10/27/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	ND (0.5)	NT	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	ND (1.0)	NT	NT
n-Butylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (4.0)	ND (2)	ND (2)
o-Xylene	NT	ND (1.0)	NT	NT
sec-Butylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
TIC's:	1	0	1	3
Total TIC Concentration	1	0	1	5

CAS: Columbia Analytical Services, Inc. Kelso, WA.

NET: NET Inc., Santa Rosa, CA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

		QA Dup	QC Dup
LOCATION:	AP-3233	AP-3233	AP-3233
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	168WA	169WA	170WA
TESTING LABORATORY:	CAS	NET	CAS
LABORATORY SAMPLE #:	K9506717-002	254420	K9506717-003
DATE RECEIVED:	10/25/95	10/27/95	10/25/95
DATE TESTED:	11/04/95	10/30/95	11/04/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (1)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (1)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (1)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (1)	ND (0.5)
1,1-Dichloroethane	ND (0.5)	ND (1)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (1)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (1)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (1)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (1)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (1)	ND (2)
1,2,4-Trimethylbenzene	94 D,B	86.0 D	79 D,B
1,2-Dibromo-3-chloropropane	ND (2)	ND (1)	ND (2)
1,2-Dibromoethane	ND (2)	ND (1)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (1)	ND (0.5)
1,2-Dichloroethane	3.5	4.4	3.6
1,2-Dichloropropane	ND (0.5)	ND (1)	ND (0.5)
1,3,5-Trimethylbenzene	54 D,B	47.0 D	46 D,B
1,3-Dichlorobenzene	ND (0.5)	ND (1)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (1)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (1)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (1)	ND (0.5)
2-Butanone	2 J	ND (2)	3 J
2-Chlorotoluene	ND (2)	ND (1)	ND (2)
2-Hexanone	ND (20)	NT	ND (20)
4-Chlorotoluene	ND (2)	ND (1)	ND (2)
4-Isopropyltoluene	3.4 B	8.5	3 B
4-Methyl-2-pentanone	ND (20)	NT	ND (20)

Table 1

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

		QA Dup	QC Dup
LOCATION:	AP-3233	AP-3233	AP-3233
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	168WA	169WA	170WA
TESTING LABORATORY:	CAS	NET	CAS
LABORATORY SAMPLE #:	K9506717-002	254420	K9506717-003
DATE RECEIVED:	10/25/95	10/27/95	10/25/95
DATE TESTED:	11/04/95	10/30/95	11/04/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Acetone	4 J,B	14.0	20 J,B
Benzene	36	38.0 EH	37
Bromobenzene	ND (0.5)	ND (1)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (1)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (1)	ND (0.5)
Bromoform	ND (0.5)	ND (1)	ND (0.5)
Bromomethane	ND (0.5)	ND (1)	ND (0.5)
Carbon disulfide	0.5	NT	1.4
Carbon tetrachloride	ND (0.5)	ND (1)	ND (0.5)
Chlorobenzene	ND (0.5)	ND (1)	ND (0.5)
Chloroethane	ND (0.5)	ND (1)	ND (0.5)
Chloroform	ND (0.5)	ND (1)	ND (0.5)
Chloromethane	ND (0.5)	ND (1)	0.4 J
Dibromochloromethane	ND (0.5)	ND (1)	ND (0.5)
Dibromomethane	ND (0.5)	ND (1)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (1)	ND (0.5)
Ethylbenzene	11	11.0	11
Hexachlorobutadiene	ND (2)	ND (1)	ND (2)
Isopropylbenzene	4.4	3.9	4
Methylene chloride	ND (20)	ND (1)	ND (20)
Naphthalene	22 B	20.0	21 B
Styrene	ND (0.5)	ND (1)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (1)	ND (0.5)
Toluene	1.9	1.9	1.9
Trichloroethene	ND (0.5)	ND (1)	ND (0.5)
Trichlorofluoromethane	ND (0.5)	ND (1)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (1)	ND (0.5)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

		QA Dup	QC Dup
LOCATION:	AP-3233	AP-3233	AP-3233
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	168WA	169WA	170WA
TESTING LABORATORY:	CAS	NET	CAS
LABORATORY SAMPLE #:	K9506717-002	254420	K9506717-003
DATE RECEIVED:	10/25/95	10/27/95	10/25/95
DATE TESTED:	11/04/95	10/30/95	11/04/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Xylenes	72	NT	71
cis-1,2-Dichloroethene	ND (0.5)	ND (1)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (1)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	79.0	NT
n-Butylbenzene	ND (2)	ND (1)	ND (2)
n-Propylbenzene	5.1	4.2	5
o-Xylene	NT	ND (1)	NT
sec-Butylbenzene	ND (2)	1.9	ND (2)
tert-Butylbenzene	ND (2)	ND (1)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (1)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (1)	ND (0.5)
TIC's:	10	10	10
Total TIC Concentration	343	333.0	347

CAS: Columbia Analytical Services, Inc. Kelso, WA.

NET: NET Inc., Santa Rosa, CA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

D: Compound quantitated at a 5X dilution factor.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-3235	AP-3235	AP-3235	AP-3447
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95	10/19/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	171WA	172WA	173WA	158WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506717-004	254421	K9506717-005	K9506697-006
DATE RECEIVED:	10/25/95	10/27/95	10/25/95	10/24/95
DATE TESTED:	11/04/95	10/30/95	11/04/95	11/02/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2,4-Trimethylbenzene	0.8 J,B	ND (1.0)	0.2 J,B	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (1.0)	0.4 J	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	0.5 J,B	ND (1.0)	0.2 J,B	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
2-Butanone	0.9 J	ND (2.0)	0.9 J	ND (20)
2-Chlorotoluene	ND (2)	ND (1.0)	ND (2)	ND (2)
2-Hexanone	ND (20)	NT	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (1.0)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (1.0)	0.2 J,B	ND (2)
4-Methyl-2-pentanone	ND (20)	NT	ND (20)	ND (20)

Table 1

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-3235	AP-3235	AP-3235	AP-3447
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95	10/19/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	171WA	172WA	173WA	158WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506717-004	254421	K9506717-005	K9506697-006
DATE RECEIVED:	10/25/95	10/27/95	10/25/95	10/24/95
DATE TESTED:	11/04/95	10/30/95	11/04/95	11/02/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	3 J,B	ND (8.0)	4 J,B	2.9 J,B
Benzene	0.8	ND (1.0)	0.8	ND (0.5)
Bromobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromoform	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Carbon disulfide	ND (0.5)	NT	0.7	ND (0.5)
Carbon tetrachloride	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Chlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Chloroform	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Chloromethane	ND (0.5)	ND (1.0)	0.6	ND (0.5)
Dibromochloromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (1.0)	ND (2)	ND (2)
Isopropylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
Methylene chloride	ND (20)	ND (1.0)	ND (20)	0.2 J,B
Naphthalene	1 J,B	1.6	ND (2)	ND (2)
Styrene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Toluene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Trichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-3235	AP-3235	AP-3235	AP-3447
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95	10/19/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	171WA	172WA	173WA	158WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506717-004	254421	K9506717-005	K9506697-006
DATE RECEIVED:	10/25/95	10/27/95	10/25/95	10/24/95
DATE TESTED:	11/04/95	10/30/95	11/04/95	11/02/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	0.4 J	NT	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	ND (1.0)	NT	NT
n-Butylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (4.0)	ND (2)	ND (2)
o-Xylene	NT	ND (1.0)	NT	NT
sec-Butylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
TIC's:	10	10	10	0
Total TIC Concentration	37	21.9	34	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

NET: NET Inc., Santa Rosa, CA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3448	AP-3449	AP-3450	AP-3451
DATE OF SAMPLING:	10/08/95	10/21/95	10/10/95	10/20/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	135WA	166WA	127WA	161WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506361-012	K9506697-014	K9506410-004	K9506697-012
DATE RECEIVED:	10/10/95	10/24/95	10/12/95	10/24/95
DATE TESTED:	10/19/95	11/04/95	10/20/95	11/03/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2,4-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2-Butanone	ND (20)	ND (20)	ND (20)	ND (20)
2-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
2-Hexanone	ND (20)	ND (20)	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (20)	ND (20)	ND (20)	ND (20)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

LOCATION:	AP-3448	AP-3449	AP-3450	AP-3451
DATE OF SAMPLING:	10/08/95	10/21/95	10/10/95	10/20/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	135WA	166WA	127WA	161WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506361-012	K9506697-014	K9506410-004	K9506697-012
DATE RECEIVED:	10/10/95	10/24/95	10/12/95	10/24/95
DATE TESTED:	10/19/95	11/04/95	10/20/95	11/03/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	2 J,B	2 J,B	1 J,B	2 J,B
Benzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon disulfide	0.2 J	ND (0.5)	ND (0.5)	ND (0.5)
Carbon tetrachloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (2)	ND (2)	ND (2)
Isopropylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
Methylene chloride	0.3 J,B	ND (1)	ND (1)	0.1 J,B
Naphthalene	ND (2)	ND (2)	ND (2)	ND (2)
Styrene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3448	AP-3449	AP-3450	AP-3451
DATE OF SAMPLING:	10/08/95	10/21/95	10/10/95	10/20/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	135WA	166WA	127WA	161WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506361-012	K9506697-014	K9506410-004	K9506697-012
DATE RECEIVED:	10/10/95	10/24/95	10/12/95	10/24/95
DATE TESTED:	10/19/95	11/04/95	10/20/95	11/03/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	NT	NT	NT
n-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	NT	NT	NT	NT
sec-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
TIC's:	0	0	0	0
Total TIC Concentration	0	0	0	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3452	AP-3453	AP-3454	AP-3455
DATE OF SAMPLING:	10/10/95	10/19/95	10/21/95	10/08/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	137WA	152WA	163WA	133WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506410-007	K9506697-003	K9506697-013	K9506361-010
DATE RECEIVED:	10/12/95	10/24/95	10/24/95	10/10/95
DATE TESTED:	10/20/95	11/02/95	11/03/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2,4-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2-Butanone	ND (20)	ND (20)	ND (20)	ND (20)
2-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
2-Hexanone	ND (20)	ND (20)	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (20)	ND (20)	ND (20)	ND (20)

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3452	AP-3453	AP-3454	AP-3455
DATE OF SAMPLING:	10/10/95	10/19/95	10/21/95	10/08/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	137WA	152WA	163WA	133WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506410-007	K9506697-003	K9506697-013	K9506361-010
DATE RECEIVED:	10/12/95	10/24/95	10/24/95	10/10/95
DATE TESTED:	10/20/95	11/02/95	11/03/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	2 J,B	2 J,B	3 J,B	3 J,B
Benzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon disulfide	ND (0.5)	ND (0.5)	0.6	ND (0.5)
Carbon tetrachloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloromethane	ND (0.5)	ND (0.5)	0.3 J	ND (0.5)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (2)	ND (2)	ND (2)
Isopropylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
Methylene chloride	ND (1)	0.2 J,B	0.1 J,B	0.3 J,B
Naphthalene	ND (2)	ND (2)	ND (2)	ND (2)
Styrene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ND (0.5)	ND (0.5)	ND (0.5)	1.2
Trichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

Table 1
Ft. Richardson Groundwater Study (Fall 1995)
Volatile Organic Compounds
Method 8260
October, 1995

LOCATION:	AP-3452	AP-3453	AP-3454	AP-3455
DATE OF SAMPLING:	10/10/95	10/19/95	10/21/95	10/08/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	137WA	152WA	163WA	133WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506410-007	K9506697-003	K9506697-013	K9506361-010
DATE RECEIVED:	10/12/95	10/24/95	10/24/95	10/10/95
DATE TESTED:	10/20/95	11/02/95	11/03/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	NT	NT	NT
n-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	NT	NT	NT	NT
sec-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
TIC's:	0	0	0	1
Total TIC Concentration	0	0	0	1

CAS: Columbia Analytical Services, Inc. Kelso, WA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

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Volatile Organic Compounds

Method 8260

October, 1995

			QC Dup	QA Dup
LOCATION:	AP-3457	AP-3458	AP-3458	AP-3458
DATE OF SAMPLING:	10/12/95	10/13/95	10/13/95	10/13/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	139WA	140WA	141WA	142WA
TESTING LABORATORY:	CAS	CAS	CAS	NET
LABORATORY SAMPLE #:	K9506552-005	K9506552-006	K9506552-007	253998
DATE RECEIVED:	10/18/95	10/18/95	10/18/95	10/19/95
DATE TESTED:	10/27/95	10/27/95	10/27/95	10/25/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
1,1,2-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
1,1,1-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
1,1-Dichloroethane	ND (0.5)	0.4 J	0.5 J	ND (1.0)
1,1-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
1,1-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
1,2,3-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (1.0)
1,2,3-Trichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
1,2,4-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (1.0)
1,2,4-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (1.0)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)	ND (2)	ND (1.0)
1,2-Dibromoethane	ND (2)	ND (2)	ND (2)	ND (1.0)
1,2-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
1,2-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
1,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
1,3,5-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (1.0)
1,3-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
1,3-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
1,4-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
2,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
2-Butanone	ND (20)	0.4 J	ND (20)	ND (2.0)
2-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (1.0)
2-Hexanone	ND (20)	ND (20)	ND (20)	NT
4-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (1.0)
4-Isopropyltoluene	ND (2)	0.7 J,B	0.7 J,B	ND (1.0)
4-Methyl-2-pentanone	ND (20)	ND (20)	ND (20)	NT

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 Volatile Organic Compounds
 Method 8260
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			QC Dup	QA Dup
LOCATION:	AP-3457	AP-3458	AP-3458	AP-3458
DATE OF SAMPLING:	10/12/95	10/13/95	10/13/95	10/13/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	139WA	140WA	141WA	142WA
TESTING LABORATORY:	CAS	CAS	CAS	NET
LABORATORY SAMPLE #:	K9506552-005	K9506552-006	K9506552-007	253998
DATE RECEIVED:	10/18/95	10/18/95	10/18/95	10/19/95
DATE TESTED:	10/27/95	10/27/95	10/27/95	10/25/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	2 J,B	3 J,B	3 J,B	ND (8.0)
Benzene	ND (0.5)	0.2 J	0.2 J	ND (1.0)
Bromobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Bromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Bromoform	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Bromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Carbon disulfide	ND (0.5)	ND (0.5)	ND (0.5)	NT
Carbon tetrachloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Chlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Chloroethane	ND (0.5)	0.4 J	ND (0.5)	ND (1.0)
Chloroform	0.9 J	ND (0.5)	ND (0.5)	ND (1.0)
Chloromethane	0.2 J	0.3 J	0.3 J	ND (1.0)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Dibromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Dichlorodifluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Ethylbenzene	ND (0.5)	0.3 J	0.3 J	ND (1.0)
Hexachlorobutadiene	ND (2)	ND (2)	ND (2)	ND (1.0)
Isopropylbenzene	ND (2)	1 J	1 J	ND (1.0)
Methylene chloride	ND (1)	ND (1)	ND (1)	ND (1.0)
Naphthalene	ND (2)	ND (2)	ND (2)	ND (1.0)
Styrene	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Tetrachloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Toluene	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Trichloroethene	ND (0.5)	1.3	1.4	1.3
Trichlorofluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
Vinyl chloride	ND (0.5)	0.4 J	0.3 J	ND (1.0)

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Volatile Organic Compounds

Method 8260

October, 1995

			QC Dup	QA Dup
LOCATION:	AP-3457	AP-3458	AP-3458	AP-3458
DATE OF SAMPLING:	10/12/95	10/13/95	10/13/95	10/13/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	139WA	140WA	141WA	142WA
TESTING LABORATORY:	CAS	CAS	CAS	NET
LABORATORY SAMPLE #:	K9506552-005	K9506552-006	K9506552-007	253998
DATE RECEIVED:	10/18/95	10/18/95	10/18/95	10/19/95
DATE TESTED:	10/27/95	10/27/95	10/27/95	10/25/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	ND (0.5)	ND (0.5)	ND (0.5)	NT
cis-1,2-Dichloroethene	ND (0.5)	12	13	9.7
cis-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
m,p-Xylene (Sum of Isomers)	NT	NT	NT	ND (1.0)
n-Butylbenzene	ND (2)	ND (2)	ND (2)	1.1
n-Propylbenzene	ND (2)	0.3 J	0.3 J	ND (4.0)
o-Xylene	NT	NT	NT	ND (1.0)
sec-Butylbenzene	ND (2)	2 J,B	2 J,B	1.6
tert-Butylbenzene	ND (2)	0.2 J	0.2 J	ND (1.0)
trans-1,2-Dichloroethene	ND (0.5)	ND (0.5)	0.1 J	ND (1.0)
trans-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)
TIC's:	2	0	0	10
Total TIC Concentration	3	0	0	144.8

CAS: Columbia Analytical Services, Inc. Kelso, WA.

NET: NET Inc., Santa Rosa, CA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3459	AP-3470	AP-3471	AP-3472
DATE OF SAMPLING:	10/13/95	10/05/95	10/06/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	148WA	117WA	121WA	124WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506552-009	K9506342-002	K9506361-001	K9506361-004
DATE RECEIVED:	10/18/95	10/10/95	10/10/95	10/10/95
DATE TESTED:	10/27/95	10/18/95	10/19/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	0.1 J
1,1-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2,4-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2-Butanone	ND (20)	ND (20)	ND (20)	ND (20)
2-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
2-Hexanone	ND (20)	ND (20)	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (20)	ND (20)	ND (20)	ND (20)

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3459	AP-3470	AP-3471	AP-3472
DATE OF SAMPLING:	10/13/95	10/05/95	10/06/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	148WA	117WA	121WA	124WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506552-009	K9506342-002	K9506361-001	K9506361-004
DATE RECEIVED:	10/18/95	10/10/95	10/10/95	10/10/95
DATE TESTED:	10/27/95	10/18/95	10/19/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	2 J,B	1 J,B	2 J,B	2 J,B
Benzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon disulfide	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon tetrachloride	ND (0.5)	ND (0.5)	ND (0.5)	0.2 J
Chlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ND (0.5)	ND (0.5)	ND (0.5)	0.1 J
Chloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (2)	ND (2)	ND (2)
Isopropylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
Methylene chloride	ND (1)	ND (1)	0.2 J,B	0.2 J,B
Naphthalene	ND (2)	ND (2)	ND (2)	ND (2)
Styrene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3459	AP-3470	AP-3471	AP-3472
DATE OF SAMPLING:	10/13/95	10/05/95	10/06/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	148WA	117WA	121WA	124WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506552-009	K9506342-002	K9506361-001	K9506361-004
DATE RECEIVED:	10/18/95	10/10/95	10/10/95	10/10/95
DATE TESTED:	10/27/95	10/18/95	10/19/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	NT	NT	NT
n-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	NT	NT	NT	NT
sec-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
TIC's:	0	0	0	0
Total TIC Concentration	0	0	0	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3473	AP-3474	AP-3475	AP-3476
DATE OF SAMPLING:	10/05/95	10/24/95	10/17/95	10/05/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	119WA	114W	147WA	118WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506342-004	K9506786-004	K9506619-006	K9506342-003
DATE RECEIVED:	10/10/95	10/27/95	10/20/95	10/10/95
DATE TESTED:	10/18/95	11/07/95	10/31/95	10/18/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (2)	ND (4)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (2)	ND (4)	ND (2)
1,2,4-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (0.5)	0.2 J	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2-Butanone	ND (20)	ND (20)	ND (20)	ND (20)
2-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
2-Hexanone	ND (20)	ND (20)	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (20)	ND (20)	ND (20)	ND (20)

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3473	AP-3474	AP-3475	AP-3476
DATE OF SAMPLING:	10/05/95	10/24/95	10/17/95	10/05/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	119WA	114W	147WA	118WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506342-004	K9506786-004	K9506619-006	K9506342-003
DATE RECEIVED:	10/10/95	10/27/95	10/20/95	10/10/95
DATE TESTED:	10/18/95	11/07/95	10/31/95	10/18/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	1 J,B	2 J,B	4 J	5 J,B
Benzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	0.1 J	ND (0.5)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon disulfide	ND (0.5)	ND (0.5)	0.9	ND (0.5)
Carbon tetrachloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ND (0.5)	0.7	ND (0.5)	ND (0.5)
Chloromethane	ND (0.5)	0.2 J	0.3 J	ND (0.5)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (2)	ND (2)	ND (2)
Isopropylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
Methylene chloride	ND (1)	ND (20)	0.2 J,B	0.2 J,B
Naphthalene	ND (2)	ND (2)	ND (2)	ND (2)
Styrene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ND (0.5)	ND (0.5)	0.1 J	ND (0.5)
Trichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

Table 1

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3473	AP-3474	AP-3475	AP-3476
DATE OF SAMPLING:	10/05/95	10/24/95	10/17/95	10/05/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	119WA	114W	147WA	118WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506342-004	K9506786-004	K9506619-006	K9506342-003
DATE RECEIVED:	10/10/95	10/27/95	10/20/95	10/10/95
DATE TESTED:	10/18/95	11/07/95	10/31/95	10/18/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	NT	NT	NT
n-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	NT	NT	NT	NT
sec-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
TIC's:	0	0	0	0
Total TIC Concentration	0	0	0	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

LOCATION:	AP-3477	AP-3478	AP-3479	AP-3480
DATE OF SAMPLING:	10/05/95	10/05/95	10/19/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	116WA	120WA	153WA	123WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506342-001	K9506342-005	K9506697-004	K9506361-003
DATE RECEIVED:	10/10/95	10/10/95	10/24/95	10/10/95
DATE TESTED:	10/18/95	10/18/95	11/02/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2,4-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2-Butanone	ND (20)	ND (20)	ND (20)	ND (20)
2-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
2-Hexanone	ND (20)	ND (20)	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (20)	ND (20)	ND (20)	ND (20)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

LOCATION:	AP-3477	AP-3478	AP-3479	AP-3480
DATE OF SAMPLING:	10/05/95	10/05/95	10/19/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	116WA	120WA	153WA	123WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506342-001	K9506342-005	K9506697-004	K9506361-003
DATE RECEIVED:	10/10/95	10/10/95	10/24/95	10/10/95
DATE TESTED:	10/18/95	10/18/95	11/02/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	5 J,B	1	3 J,B	2 J,B
Benzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon disulfide	ND (0.5)	0.5 J	ND (0.5)	ND (0.5)
Carbon tetrachloride	ND (0.5)	ND (0.5)	ND (0.5)	0.4 J
Chlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ND (0.5)	ND (0.5)	ND (0.5)	0.4 J
Chloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (2)	ND (2)	ND (2)
Isopropylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
Methylene chloride	0.1 J,B	ND (1)	0.2 J,B	0.2 J,B
Naphthalene	ND (2)	ND (2)	ND (2)	ND (2)
Styrene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3477	AP-3478	AP-3479	AP-3480
DATE OF SAMPLING:	10/05/95	10/05/95	10/19/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	116WA	120WA	153WA	123WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506342-001	K9506342-005	K9506697-004	K9506361-003
DATE RECEIVED:	10/10/95	10/10/95	10/24/95	10/10/95
DATE TESTED:	10/18/95	10/18/95	11/02/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	NT	NT	NT
n-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	NT	NT	NT	NT
sec-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
TIC's:	0	0	0	0
Total TIC Concentration	0	0	0	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

LOCATION:	AP-3481	AP-3482	AP-3483	AP-3484
DATE OF SAMPLING:	10/08/95	10/08/95	10/17/95	10/17/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	130WA	134WA	129WA	113WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506361-008	K9506361-011	K9506619-007	K9506619-005
DATE RECEIVED:	10/10/95	10/10/95	10/20/95	10/20/95
DATE TESTED:	10/19/95	10/19/95	10/31/95	10/31/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (2)	ND (4)	ND (4)
1,2,3-Trichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (2)	ND (4)	ND (4)
1,2,4-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (0.5)	0.2 J	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2-Butanone	ND (20)	ND (20)	ND (20)	ND (20)
2-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
2-Hexanone	ND (20)	ND (20)	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (20)	ND (20)	ND (20)	ND (20)

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3481	AP-3482	AP-3483	AP-3484
DATE OF SAMPLING:	10/08/95	10/08/95	10/17/95	10/17/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	130WA	134WA	129WA	113WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506361-008	K9506361-011	K9506619-007	K9506619-005
DATE RECEIVED:	10/10/95	10/10/95	10/20/95	10/20/95
DATE TESTED:	10/19/95	10/19/95	10/31/95	10/31/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	2 J,B	2 J,B	3 J	2 J
Benzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon disulfide	ND (0.5)	ND (0.5)	0.6	ND (0.5)
Carbon tetrachloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloromethane	ND (0.5)	ND (0.5)	0.5 J	0.4 J
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (2)	ND (2)	ND (2)
Isopropylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
Methylene chloride	0.4 J,B	0.3 J,B	ND (1)	ND (1)
Naphthalene	ND (2)	ND (2)	ND (2)	ND (2)
Styrene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethene	ND (0.5)	ND (0.5)	0.2 J	ND (0.5)
Trichlorofluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	AP-3481	AP-3482	AP-3483	AP-3484
DATE OF SAMPLING:	10/08/95	10/08/95	10/17/95	10/17/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	130WA	134WA	129WA	113WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506361-008	K9506361-011	K9506619-007	K9506619-005
DATE RECEIVED:	10/10/95	10/10/95	10/20/95	10/20/95
DATE TESTED:	10/19/95	10/19/95	10/31/95	10/31/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	NT	NT	NT
n-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	NT	NT	NT	NT
sec-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
TIC's:	0	0	0	0
Total TIC Concentration	0	0	0	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

LOCATION:	AP-3485	AP-3530	AP-3531
DATE OF SAMPLING:	10/08/95	10/06/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	131WA	122WA	125WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506361-009	K9506361-002	K9506361-005
DATE RECEIVED:	10/10/95	10/10/95	10/10/95
DATE TESTED:	10/20/95	10/19/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (2)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (2)	ND (2)
1,2,4-Trimethylbenzene	ND (2)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)
2-Butanone	ND (20)	ND (20)	ND (20)
2-Chlorotoluene	ND (2)	ND (2)	ND (2)
2-Hexanone	ND (20)	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (20)	ND (20)	ND (20)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

LOCATION:	AP-3485	AP-3530	AP-3531
DATE OF SAMPLING:	10/08/95	10/06/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	131WA	122WA	125WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506361-009	K9506361-002	K9506361-005
DATE RECEIVED:	10/10/95	10/10/95	10/10/95
DATE TESTED:	10/20/95	10/19/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Acetone	0.9 J,B	2 J,B	2 J,B
Benzene	ND (0.5)	ND (0.5)	ND (0.5)
Bromobenzene	ND (0.5)	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (0.5)	ND (0.5)
Carbon disulfide	ND (0.5)	ND (0.5)	ND (0.5)
Carbon tetrachloride	ND (0.5)	ND (0.5)	ND (0.5)
Chlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ND (0.5)	0.2 J	0.1 J
Chloromethane	ND (0.5)	ND (0.5)	ND (0.5)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (0.5)	ND (0.5)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (2)	ND (2)
Isopropylbenzene	ND (2)	ND (2)	ND (2)
Methylene chloride	0.3 J,B	0.2 J,B	0.2 J,B
Naphthalene	ND (2)	ND (2)	ND (2)
Styrene	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethene	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ND (0.5)	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (0.5)	ND (0.5)

Table 1
Ft. Richardson Groundwater Study (Fall 1995)
Volatile Organic Compounds
Method 8260
October, 1995

LOCATION:	AP-3485	AP-3530	AP-3531
DATE OF SAMPLING:	10/08/95	10/06/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	131WA	122WA	125WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506361-009	K9506361-002	K9506361-005
DATE RECEIVED:	10/10/95	10/10/95	10/10/95
DATE TESTED:	10/20/95	10/19/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Xylenes	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	NT	NT
n-Butylbenzene	ND (2)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (2)	ND (2)
o-Xylene	NT	NT	NT
sec-Butylbenzene	ND (2)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)
TIC's:	0	1	1
Total TIC Concentration	0	1	1

CAS: Columbia Analytical Services, Inc. Kelso, WA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-3532	AP-3532	AP-3532	AP-3533
DATE OF SAMPLING:	10/18/95	10/18/95	10/18/95	10/17/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	155WA	156WA	157WA	128WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506619-003	254216	K9506619-004	K9506619-008
DATE RECEIVED:	10/20/95	10/21/95	10/20/95	10/20/95
DATE TESTED:	11/01/95	10/30/95	11/01/95	10/31/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (1.0)	0.1 J	0.2 J
1,1-Dichloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (1.0)	ND (2)	ND (4) CI
1,2,3-Trichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (1.0)	ND (2)	ND (4) CI
1,2,4-Trimethylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (1.0)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
2-Butanone	ND (20)	ND (2.0)	ND (20)	ND (20)
2-Chlorotoluene	ND (2)	ND (1.0)	ND (2)	ND (2)
2-Hexanone	ND (20)	NT	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (1.0)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (1.0)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (20)	NT	ND (20)	ND (20)

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-3532	AP-3532	AP-3532	AP-3533
DATE OF SAMPLING:	10/18/95	10/18/95	10/18/95	10/17/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	155WA	156WA	157WA	128WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506619-003	254216	K9506619-004	K9506619-008
DATE RECEIVED:	10/20/95	10/21/95	10/20/95	10/20/95
DATE TESTED:	11/01/95	10/30/95	11/01/95	10/31/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	2 J,B	ND (8.0)	3 J,B	2 J
Benzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromodichloromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromoform	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Carbon disulfide	ND (0.5)	NT	ND (0.5)	0.3 J
Carbon tetrachloride	1.4	1.4	1.4	0.8
Chlorobenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Chloroform	0.2 J	ND (1.0)	0.2 J	2
Chloromethane	ND (0.5)	ND (1.0)	ND (0.5)	0.3 J
Dibromochloromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (1.0)	ND (2)	ND (2)
Isopropylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
Methylene chloride	0.4 J,B	ND (1.0)	0.4 J,B	0.2 J,B
Naphthalene	ND (2)	ND (1.0)	ND (2)	ND (2)
Styrene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Toluene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Trichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	0.4 J
Trichlorofluoromethane	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-3532	AP-3532	AP-3532	AP-3533
DATE OF SAMPLING:	10/18/95	10/18/95	10/18/95	10/17/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	155WA	156WA	157WA	128WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506619-003	254216	K9506619-004	K9506619-008
DATE RECEIVED:	10/20/95	10/21/95	10/20/95	10/20/95
DATE TESTED:	11/01/95	10/30/95	11/01/95	10/31/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	ND (0.5)	NT	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	ND (1.0)	NT	NT
n-Butylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (4.0)	ND (2)	ND (2)
o-Xylene	NT	ND (1.0)	NT	NT
sec-Butylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (1.0)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
TIC's:	0	0	0	0
Total TIC Concentration	0	0	0	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

NET: NET Inc., Santa Rosa, CA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	FR-1	FR-2	FR-3	Otter Lake
DATE OF SAMPLING:	10/03/95	10/03/95	10/04/95	10/27/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	102WA	101WA	107WA	167WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500773-2	A9500773-1	A9500773-7	K9506812-001
DATE RECEIVED:	10/05/95	10/05/95	10/05/95	10/28/95
DATE TESTED:	10/05/95	10/05/95	10/05/95	11/07/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (2)	ND (2)	ND (2)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (2)	ND (2)	ND (2)	ND (0.5)
1,1,2-Trichloroethane	ND (3)	ND (3)	ND (3)	ND (0.5)
1,1,1-Trichloroethane	ND (2)	ND (2)	ND (2)	ND (0.5)
1,1-Dichloroethane	ND (2)	ND (2)	ND (2)	ND (0.5)
1,1-Dichloroethene	ND (2)	ND (2)	ND (2)	ND (0.5)
1,1-Dichloropropene	NT	NT	NT	ND (0.5)
1,2,3-Trichlorobenzene	ND (5)	ND (5)	ND (5)	ND (2)
1,2,3-Trichloropropane	ND (5)	ND (5)	ND (5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (5)	ND (5)	ND (5)	ND (2)
1,2,4-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (2)	ND (2)	ND (2)	ND (0.5)
1,2-Dichloroethane	ND (2)	ND (2)	ND (2)	ND (0.5)
1,2-Dichloropropane	ND (2)	ND (2)	ND (2)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (2)	ND (2)	ND (2)	ND (0.5)
1,3-Dichloropropane	ND (2)	ND (2)	ND (2)	ND (0.5)
1,4-Dichlorobenzene	ND (2)	ND (2)	ND (2)	ND (0.5)
2,2-Dichloropropane	ND (4)	ND (4)	ND (4)	ND (0.5)
2-Butanone	ND (100)	ND (100)	ND (100)	ND (20)
2-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
2-Hexanone	ND (40)	ND (40)	ND (40)	ND (20)
4-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (40)	ND (40)	ND (40)	ND (20)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

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LOCATION:	FR-1	FR-2	FR-3	Otter Lake
DATE OF SAMPLING:	10/03/95	10/03/95	10/04/95	10/27/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	102WA	101WA	107WA	167WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500773-2	A9500773-1	A9500773-7	K9506812-001
DATE RECEIVED:	10/05/95	10/05/95	10/05/95	10/28/95
DATE TESTED:	10/05/95	10/05/95	10/05/95	11/07/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	ND (120)	ND (120)	ND (120)	2 J,B
Benzene	ND (2)	ND (2)	ND (2)	ND (0.5)
Bromobenzene	ND (2)	ND (2)	ND (2)	ND (0.5)
Bromochloromethane	ND (2)	ND (2)	ND (2)	0.2 J
Bromodichloromethane	ND (2)	ND (2)	ND (2)	ND (0.5)
Bromoform	ND (2)	ND (2)	ND (2)	ND (0.5)
Bromomethane	ND (2)	ND (2)	ND (2)	ND (0.5)
Carbon disulfide	ND (2)	ND (2)	ND (2)	ND (0.5)
Carbon tetrachloride	ND (3)	ND (3)	ND (3)	ND (0.5)
Chlorobenzene	ND (2)	ND (2)	ND (2)	ND (0.5)
Chloroethane	ND (2)	ND (2)	ND (2)	ND (0.5)
Chloroform	ND (2)	ND (2)	ND (2)	ND (0.5)
Chloromethane	ND (2)	ND (2)	ND (2)	0.5
Dibromochloromethane	ND (3)	ND (3)	ND (3)	ND (0.5)
Dibromomethane	ND (2)	ND (2)	ND (2)	ND (0.5)
Dichlorodifluoromethane	ND (3)	ND (3)	5	ND (0.5)
Ethylbenzene	ND (2)	ND (2)	ND (2)	ND (0.5)
Hexachlorobutadiene	ND (5)	ND (5)	ND (5)	ND (2)
Isopropylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
Methylene chloride	ND (5)	ND (5)	ND (5)	0.1 J,B
Naphthalene	ND (10)	ND (10)	ND (10)	ND (2)
Styrene	ND (2)	ND (2)	ND (2)	ND (0.5)
Tetrachloroethene	ND (2)	ND (2)	ND (2)	ND (0.5)
Toluene	ND (2)	ND (2)	ND (2)	ND (0.5)
Trichloroethene	ND (2)	ND (2)	ND (2)	ND (0.5)
Trichlorofluoromethane	ND (2)	ND (2)	ND (2)	ND (0.5)
Vinyl chloride	ND (2)	ND (2)	ND (2)	ND (0.5)

Table 1

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Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	FR-1	FR-2	FR-3	Otter Lake
DATE OF SAMPLING:	10/03/95	10/03/95	10/04/95	10/27/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	102WA	101WA	107WA	167WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500773-2	A9500773-1	A9500773-7	K9506812-001
DATE RECEIVED:	10/05/95	10/05/95	10/05/95	10/28/95
DATE TESTED:	10/05/95	10/05/95	10/05/95	11/07/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	ND (2)	ND (2)	ND (2)	ND (0.5)
cis-1,2-Dichloroethene	ND (2)	ND (2)	ND (2)	ND (0.5)
cis-1,3-Dichloropropene	ND (3)	ND (3)	ND (3)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	NT	NT	NT
n-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	NT	NT	NT	NT
sec-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (2)	ND (2)	ND (2)	ND (0.5)
trans-1,3-Dichloropropene	ND (3)	ND (3)	ND (3)	ND (0.5)
TIC's:	0	0	0	0
Total TIC Concentration	0	0	0	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 1

Ft. Richardson Groundwater Study (Fall 1995)

Volatile Organic Compounds

Method 8260

October, 1995

LOCATION:	TW-1	Well 1	Well 3	Well B
DATE OF SAMPLING:	10/10/95	10/20/95	10/20/95	10/24/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	136WA	160WA	159WA	174W
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506410-006	K9506697-011	K9506697-010	K9506786-003
DATE RECEIVED:	10/12/95	10/24/95	10/24/95	10/27/95
DATE TESTED:	10/20/95	11/03/95	11/03/95	11/07/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,1,1,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,3-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2,3-Trichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2,4-Trichlorobenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2,4-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromo-3-chloropropane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dibromoethane	ND (2)	ND (2)	ND (2)	ND (2)
1,2-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
1,3-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2,2-Dichloropropane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
2-Butanone	ND (20)	ND (20)	ND (20)	ND (20)
2-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
2-Hexanone	ND (20)	ND (20)	ND (20)	ND (20)
4-Chlorotoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Isopropyltoluene	ND (2)	ND (2)	ND (2)	ND (2)
4-Methyl-2-pentanone	ND (20)	ND (20)	ND (20)	ND (20)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

LOCATION:	TW-1	Well 1	Well 3	Well B
DATE OF SAMPLING:	10/10/95	10/20/95	10/20/95	10/24/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	136WA	160WA	159WA	174W
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506410-006	K9506697-011	K9506697-010	K9506786-003
DATE RECEIVED:	10/12/95	10/24/95	10/24/95	10/27/95
DATE TESTED:	10/20/95	11/03/95	11/03/95	11/07/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acetone	2 J,B	2 J,B	2 J,B	2 J,B
Benzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	0.1 J
Bromodichloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromofom	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon disulfide	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon tetrachloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chlorobenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromochloromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromomethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Hexachlorobutadiene	ND (2)	ND (2)	ND (2)	ND (2)
Isopropylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
Methylene chloride	ND (1)	0.1 J,B	0.1 J,B	ND (20)
Naphthalene	ND (2)	ND (2)	ND (2)	ND (2)
Styrene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

Table 1
 Ft. Richardson Groundwater Study (Fall 1995)
 Volatile Organic Compounds
 Method 8260
 October, 1995

LOCATION:	TW-1	Well 1	Well 3	Well B
DATE OF SAMPLING:	10/10/95	10/20/95	10/20/95	10/24/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	136WA	160WA	159WA	174W
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506410-006	K9506697-011	K9506697-010	K9506786-003
DATE RECEIVED:	10/12/95	10/24/95	10/24/95	10/27/95
DATE TESTED:	10/20/95	11/03/95	11/03/95	11/07/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Xylenes	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m,p-Xylene (Sum of Isomers)	NT	NT	NT	NT
n-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
n-Propylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
o-Xylene	NT	NT	NT	NT
sec-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
tert-Butylbenzene	ND (2)	ND (2)	ND (2)	ND (2)
trans-1,2-Dichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
TIC's:	0	0	0	0
Total TIC Concentration	0	0	0	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

TIC: Tentatively Identified Compounds.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 2
Ft. Richardson Groundwater Study (Fall 1995)
Gasoline Range Organics
Method 8015, Modified (ADEC Version)
October 1995

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LOCATION:	A-1	A-6	ADFG-9	ADFG-C	ADFG-K
DATE OF SAMPLING:	10/10/95	10/10/95	10/19/95	10/19/95	10/19/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	132WA	126WA	165WA	162WA	164WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500798-5	A9500798-3	A9500850-9	A9500850-7	A9500850-8
DATE RECEIVED:	10/11/95	10/11/95	10/23/95	10/23/95	10/23/95
DATE TESTED:	10/11/95	10/13/95	10/24/95	10/24/95	10/24/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
Ft. Richardson Groundwater Study (Fall 1995)
Gasoline Range Organics
Method 8015, Modified (ADEC Version)
October 1995

			QA Dup	QC Dup
LOCATION:	AK-2127	AP-2974	AP-2974	AP-2974
DATE OF SAMPLING:	10/19/95	10/24/95	10/25/95	10/24/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	154WA	177WA	178WA	179WA
TESTING LABORATORY:	CAS	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500850-5	A9500865-1	254454	A9500865-2
DATE RECEIVED:	10/23/95	10/26/95	10/28/95	10/26/95
DATE TESTED:	10/24/95	10/28/95	11/01/95	10/28/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	ND (50)	7 J,B	ND (50)	9 J,B

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
Ft. Richardson Groundwater Study (Fall 1995)
Gasoline Range Organics
Method 8015, Modified (ADEC Version)
October 1995

		QA Dup	QC Dup		
LOCATION:	AP-2982	AP-2982	AP-2982	AP-2985	AP-3010
DATE OF SAMPLING:	10/15/95	10/13/95	10/15/95	10/15/95	10/03/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	144WA	145WA	146WA	143WA	109WA
TESTING LABORATORY:	CAS	NET	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500815-9	253999	A9500815-10	A9500815-8	A9500773-8
DATE RECEIVED:	10/16/95	10/19/95	10/16/95	10/16/95	10/05/95
DATE TESTED:	10/17/95	10/26/95	10/17/95	10/20/95	10/06/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	2300	2200.0	1670	ND (50)	ND (50)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
 Ft. Richardson Groundwater Study (Fall 1995)
 Gasoline Range Organics
 Method 8015, Modified (ADEC Version)
 October 1995

LOCATION:	AP-3011	AP-3013	AP-3014	AP-3015	AP-3219
DATE OF SAMPLING:	10/18/95	10/18/95	10/03/95	10/03/95	10/15/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	112WA	115WA	104WA	105WA	111WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500829-9	A9500829-1	A9500773-4	A9500773-5	A9500815-3
DATE RECEIVED:	10/19/95	10/19/95	10/05/95	10/05/95	10/16/95
DATE TESTED:	10/19/95	10/19/95	10/06/95	10/06/95	10/17/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
 Ft. Richardson Groundwater Study (Fall 1995)
 Gasoline Range Organics
 Method 8015, Modified (ADEC Version)
 October 1995

	QA Dup	QC Dup			
LOCATION:	AP-3221	AP-3222	AP-3222	AP-3222	AP-3231
DATE OF SAMPLING:	10/03/95	10/15/95	10/15/95	10/15/95	10/15/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	103WA	106WA	108WA	110WA	138WA
TESTING LABORATORY:	CAS	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	A9500773-3	A9500815-1	254000	A9500815-2	A9500815-4
DATE RECEIVED:	10/05/95	10/16/95	10/19/95	10/16/95	10/16/95
DATE TESTED:	10/06/95	10/17/95	10/26/95	10/17/95	10/17/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
Ft. Richardson Groundwater Study (Fall 1995)
Gasoline Range Organics
Method 8015, Modified (ADEC Version)
October 1995

		QA Dup	QC Dup
LOCATION:	AP-3233	AP-3233	AP-3233
DATE OF SAMPLING:	10/21/95	10/23/95	10/21/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	168WA	169WA	170WA
TESTING LABORATORY:	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500853-2	254420	A9500853-3
DATE RECEIVED:	10/24/95	10/27/95	10/24/95
DATE TESTED:	10/25/95	11/01/95	10/25/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Gasoline Range Organics	1400	1500.0	1430

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2

Ft. Richardson Groundwater Study (Fall 1995)
 Gasoline Range Organics
 Method 8015, Modified (ADEC Version)
 October 1995

		QA Dup	QC Dup		
LOCATION:	AP-3235	AP-3235	AP-3235	AP-3447	AP-3448
DATE OF SAMPLING:	10/21/95	10/23/95	10/21/95	10/19/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	171WA	172WA	173WA	158WA	135WA
TESTING LABORATORY:	CAS	NET	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500853-4	254421	A9500853-5	A9500850-6	A9500789-12
DATE RECEIVED:	10/24/95	10/27/95	10/24/95	10/23/95	10/09/95
DATE TESTED:	10/25/95	11/01/95	10/30/95	10/24/95	10/11/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	57	70.0	54	ND (50)	ND (50)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
 Ft. Richardson Groundwater Study (Fall 1995)
 Gasoline Range Organics
 Method 8015, Modified (ADEC Version)
 October 1995

LOCATION:	AP-3449	AP-3450	AP-3451	AP-3452	AP-3453
DATE OF SAMPLING:	10/19/95	10/10/95	10/19/95	10/10/95	10/19/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	166WA	127WA	161WA	137WA	152WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500850-14	A9500798-4	A9500850-12	A9500798-7	A9500850-3
DATE RECEIVED:	10/23/95	10/11/95	10/23/95	10/11/95	10/23/95
DATE TESTED:	10/25/95	10/11/95	10/25/95	10/11/95	10/24/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
Ft. Richardson Groundwater Study (Fall 1995)
Gasoline Range Organics
Method 8015, Modified (ADEC Version)
October 1995

LOCATION:	AP-3454	AP-3455	AP-3457
DATE OF SAMPLING:	10/16/95	10/06/95	10/15/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	163WA	133WA	139WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500850-13	A9500789-10	A9500815-5
DATE RECEIVED:	10/23/95	10/09/95	10/16/95
DATE TESTED:	10/25/95	10/11/95	10/17/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Gasoline Range Organics	ND (50)	ND (50)	ND (50)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
 Ft. Richardson Groundwater Study (Fall 1995)
 Gasoline Range Organics
 Method 8015, Modified (ADEC Version)
 October 1995

		QC Dup	QA Dup		
LOCATION:	AP-3458	AP-3458	AP-3458	AP-3459	AP-3470
DATE OF SAMPLING:	10/13/95	10/13/95	10/13/95	10/15/95	10/05/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	140WA	141WA	142WA	148WA	117WA
TESTING LABORATORY:	CAS	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	A9500815-6	A9500815-7	253998	A9500815-11	A9500777-2
DATE RECEIVED:	10/16/95	10/16/95	10/19/95	10/16/95	10/06/95
DATE TESTED:	10/17/95	10/17/95	10/26/95	10/17/95	10/06/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
Ft. Richardson Groundwater Study (Fall 1995)
Gasoline Range Organics
Method 8015, Modified (ADEC Version)
October 1995

LOCATION:	AP-3471	AP-3472	AP-3473	AP-3474	AP-3475
DATE OF SAMPLING:	10/06/95	10/06/95	10/05/95	10/24/95	10/18/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	121WA	124WA	119WA	114WA	147WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500789-1	A9500789-4	A9500777-4	A9500865-4	A9500829-6
DATE RECEIVED:	10/09/95	10/09/95	10/06/95	10/26/95	10/19/95
DATE TESTED:	10/11/95	10/11/95	10/06/95	10/28/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	ND (50)	ND (50)	ND (50)	8 J,B	ND (50)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
 Ft. Richardson Groundwater Study (Fall 1995)
 Gasoline Range Organics
 Method 8015, Modified (ADEC Version)
 October 1995

LOCATION:	AP-3476	AP-3477	AP-3478	AP-3479	AP-3480
DATE OF SAMPLING:	10/05/95	10/05/95	10/05/95	10/19/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	118WA	116WA	120WA	153WA	123WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500777-3	A9500777-1	A9500777-5	A9500850-4	A9500789-3
DATE RECEIVED:	10/06/95	10/06/95	10/06/95	10/23/95	10/09/95
DATE TESTED:	10/06/95	10/06/95	10/06/95	10/24/95	10/11/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
 Ft. Richardson Groundwater Study (Fall 1995)
 Gasoline Range Organics
 Method 8015, Modified (ADEC Version)
 October 1995

LOCATION:	AP-3481	AP-3482	AP-3483	AP-3484	AP-3485
DATE OF SAMPLING:	10/06/95	10/06/95	10/18/95	10/18/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	130WA	134WA	129WA	113WA	131WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500789-8	A9500789-11	A9500829-7	A9500829-5	A9500789-9
DATE RECEIVED:	10/09/95	10/09/95	10/19/95	10/19/95	10/09/95
DATE TESTED:	10/11/95	10/11/95	10/19/95	10/19/95	10/11/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
 Ft. Richardson Groundwater Study (Fall 1995)
 Gasoline Range Organics
 Method 8015, Modified (ADEC Version)
 October 1995

				QA Dup	QC Dup
LOCATION:	AP-3530	AP-3531	AP-3532	AP-3532	AP-3532
DATE OF SAMPLING:	10/06/95	10/06/95	10/18/95	10/18/95	10/18/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	122WA	125WA	155WA	156WA	157WA
TESTING LABORATORY:	CAS	CAS	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500789-2	A9500789-5	A9500829-3	254217	A9500829-4
DATE RECEIVED:	10/09/95	10/09/95	10/19/95	10/21/95	10/19/95
DATE TESTED:	10/11/95	10/11/95	10/19/95	10/30/95	10/19/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

J: Reported value or MRL is considered an estimate.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
 Ft. Richardson Groundwater Study (Fall 1995)
 Gasoline Range Organics
 Method 8015, Modified (ADEC Version)
 October 1995

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LOCATION:	AP-3533	FR-1	FR-2	FR-3	OTTER LAKE
DATE OF SAMPLING:	10/18/95	10/03/95	10/03/95	10/03/95	10/27/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	128WA	102WA	101WA	107WA	167WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500829-8	A9500773-2	A9500773-1	A9500773-7	A9500873-1
DATE RECEIVED:	10/19/95	10/05/95	10/05/95	10/05/95	10/27/95
DATE TESTED:	10/19/95	10/06/95	10/05/95	10/06/95	10/28/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	ND (50)	ND (50)	ND (50)	ND (50)	8 J,B

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 2
 Ft. Richardson Groundwater Study (Fall 1995)
 Gasoline Range Organics
 Method 8015, Modified (ADEC Version)
 October 1995

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LOCATION:	TW-1	Well 1	Well 3	Well B
DATE OF SAMPLING:	10/10/95	10/19/95	10/19/95	10/24/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	136WA	160WA	159WA	174WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500798-6	A9500850-11	A9500850-10	A9500865-3
DATE RECEIVED:	10/11/95	10/23/95	10/23/95	10/26/95
DATE TESTED:	10/11/95	10/25/95	11/07/95	10/28/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Gasoline Range Organics	ND (50)	ND (50)	ND (50) U	9 J,B

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

U: Sample analyzed after holding time expired.

J: Reported value or MRL is considered an estimate.

B: Analyte present in the blank and the sample.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3

Ft. Richardson Groundwater Study (Fall 1995)
 Diesel Range Organics
 Method 8100, -Modified (ADEC Version)
 October, 1995

LOCATION:	A-1	A-6	ADFG-9	ADFG-C	ADFG-K
DATE OF SAMPLING:	10/10/95	10/10/95	10/20/95	10/20/95	10/20/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	132WA	126WA	165WA	162WA	164WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500798-5	A9500798-3	A9500850-9	A9500850-7	A9500850-8
DATE RECEIVED:	10/11/95	10/11/95	10/23/95	10/23/95	10/23/95
DATE TESTED:	10/16/95	10/16/95	10/29/95	10/29/95	10/29/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	ND (0.1)	0.2 *	ND (0.1)	ND (0.1) J	ND (0.1)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

*: Unknown Hydrocarbon with a single peak.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
 Ft. Richardson Groundwater Study (Fall 1995)
 Diesel Range Organics
 Method 8100, Modified (ADEC Version)
 October, 1995

			QA Dup	QC Dup
LOCATION:	AK-2127	AP-2974	AP-2974	AP-2974
DATE OF SAMPLING:	10/19/95	10/25/95	10/25/95	10/25/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	154WA	177WA	178WA	179WA
TESTING LABORATORY:	CAS	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500832-3	A9500865-1	254454	A9500865-2
DATE RECEIVED:	10/20/95	10/26/95	10/28/95	10/26/95
DATE TESTED:	10/26/95	11/01/95	10/30/95	11/02/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	ND (0.1) X	0.1	ND (0.01)	0.1

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

X: Data is rejected due to extraction error.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
 Ft. Richardson Groundwater Study (Fall 1995)
 Diesel Range Organics
 Method 8100, Modified (ADEC Version)
 October, 1995

		QC Dup	QA Dup		
LOCATION:	AP-2982	AP-2982	AP-2982	AP-2985	AP-3010
DATE OF SAMPLING:	10/12/95	10/12/95	10/12/95	10/13/95	10/04/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	144WA	145WA	146WA	143WA	109WA
TESTING LABORATORY:	CAS	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	A9500804-3	A9500804-4	253683	A9500815-8	A9500773-8
DATE RECEIVED:	10/13/95	10/13/95	10/17/95	10/16/95	10/05/95
DATE TESTED:	10/19/95	10/20/95	10/19/95	10/20/95	10/11/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	1.7 **	0.8 **	1.3	ND (0.1)	ND (0.1)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

** : Unknown Hydrocarbon with several peaks.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
 Ft. Richardson Groundwater Study (Fall 1995)
 Diesel Range Organics
 Method 8100, Modified (ADEC Version)
 October, 1995

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LOCATION:	AP-3011	AP-3013	AP-3014	AP-3015	AP-3219
DATE OF SAMPLING:	10/16/95	10/18/95	10/03/95	10/03/95	10/15/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	112WA	115WA	104WA	105WA	111WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500820-1	A9500829-1	A9500767-4	A9500767-5	A9500815-3
DATE RECEIVED:	10/17/95	10/19/95	10/04/95	10/04/95	10/16/95
DATE TESTED:	10/20/95	10/24/95	10/11/95	10/11/95	10/20/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
Ft. Richardson Groundwater Study (Fall 1995)
Diesel Range Organics
Method 8100, Modified (ADEC Version)
October, 1995

			QA Dup	QC Dup	
LOCATION:	AP-3221	AP-3222	AP-3222	AP-3222	AP-3231
DATE OF SAMPLING:	10/03/95	10/15/95	10/15/95	10/15/95	10/12/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #:	95FRGW 103WA	106WA	108WA	110WA	138WA
TESTING LABORATORY:	CAS	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	A9500767-3	A9500815-1	254000	A9500815-2	A9500804-1
DATE RECEIVED:	10/04/95	10/16/95	10/19/95	10/16/95	10/13/95
DATE TESTED:	10/11/95	10/20/95	10/24/95	10/20/95	10/19/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
 Ft. Richardson Groundwater Study (Fall 1995)
 Diesel Range Organics
 Method 8100, Modified (ADEC Version)
 October, 1995

		QA Dup	QC Dup
LOCATION:	AP-3233	AP-3233	AP-3233
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	168WA	169WA	170WA
TESTING LABORATORY:	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500853-2	254420	A9500853-3
DATE RECEIVED:	10/24/95	10/27/95	10/24/95
DATE TESTED:	11/02/95	11/02/95	11/02/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L
Diesel Range Organics	2.0 A	2.0	2.1 A

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

A: Hydrocarbon response is diesel range but does not resemble diesel.

Table 3
 Ft. Richardson Groundwater Study (Fall 1995)
 Diesel Range Organics
 Method 8100, Modified (ADEC Version)
 October, 1995

		QA Dup	QC Dup		
LOCATION:	AP-3235	AP-3235	AP-3235	AP-3447	AP-3448
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95	10/19/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	171WA	172WA	173WA	158WA	135WA
TESTING LABORATORY:	CAS	NET	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500853-4	254421	A9500853-5	A9500832-4	A9500789-12
DATE RECEIVED:	10/24/95	10/27/95	10/24/95	10/20/95	10/09/95
DATE TESTED:	11/02/95	11/02/95	11/02/95	10/26/95	10/29/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	0.9 A	0.52	0.9 A	ND (0.1) J	0.1

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

A: Hydrocarbon response is diesel range but does not resemble diesel.

J: Reported value or MRL is considered an estimate.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
 Ft. Richardson Groundwater Study (Fall 1995)
 Diesel Range Organics
 Method 8100, Modified (ADEC Version)
 October, 1995

LOCATION:	AP-3449	AP-3450	AP-3451	AP-3452	AP-3453
DATE OF SAMPLING:	10/21/95	10/10/95	10/20/95	10/10/95	10/19/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	166WA	127WA	161WA	137WA	152WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500850-14	A9500798-4	A9500850-12	A9500798-7	A9500832-1
DATE RECEIVED:	10/23/95	10/11/95	10/23/95	10/11/95	10/20/95
DATE TESTED:	10/29/95	10/16/95	10/29/95	10/16/95	10/26/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	0.2

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
 Ft. Richardson Groundwater Study (Fall 1995)
 Diesel Range Organics
 Method 8100, Modified (ADEC Version)
 October, 1995

LOCATION:	AP-3454	AP-3455	AP-3457
DATE OF SAMPLING:	10/20/95	10/06/95	10/12/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	163WA	133WA	139WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500850-13	A9500789-10	A9500804-2
DATE RECEIVED:	10/23/95	10/09/95	10/13/95
DATE TESTED:	10/29/95	10/29/95	10/19/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L
Diesel Range Organics	ND (0.1)	0.9 B	0.7 **

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

** : Unknown Hydrocarbon with several peaks.

B: Analyte found in the method blank.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
 Ft. Richardson Groundwater Study (Fall 1995)
 Diesel Range Organics
 Method 8100, Modified (ADEC Version)
 October, 1995

		QC Dup	QA Dup		
LOCATION:	AP-3458	AP-3458	AP-3458	AP-3459	AP-3470
DATE OF SAMPLING:	10/13/95	10/13/95	10/13/95	10/13/95	10/05/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	140WA	141WA	142WA	148WA	117WA
TESTING LABORATORY:	CAS	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	A9500815-6	A9500815-7	253998	A9500815-11	A9500777-2
DATE RECEIVED:	10/16/95	10/16/95	10/19/95	10/16/95	10/06/95
DATE TESTED:	10/20/95	10/20/95	10/24/95	10/20/95	10/11/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	1.0 A	1.0 A	1.3	ND (0.1)	ND (0.1)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

A: Hydrocarbon response is diesel range but does not resemble diesel.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
 Ft. Richardson Groundwater Study (Fall 1995)
 Diesel Range Organics
 Method 8100, Modified (ADEC Version)
 October, 1995

LOCATION:	AP-3471	AP-3472	AP-3473	AP-3474	AP-3475
DATE OF SAMPLING:	10/06/95	10/06/95	10/05/95	10/24/95	10/17/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	121WA	124WA	119WA	114WA	147WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500789-1	A9500789-4	A9500777-4	A9500857-1	A9500827-4
DATE RECEIVED:	10/09/95	10/09/95	10/06/95	10/25/95	10/17/95
DATE TESTED:	10/28/95	10/29/95	10/11/95	11/02/95	10/24/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	0.1 B	0.1 J,B	ND (0.1)	0.2	ND (0.1)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

B: Analyte found in the method blank.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
Ft. Richardson Groundwater Study (Fall 1995)
Diesel Range Organics
Method 8100, Modified (ADEC Version)
October, 1995

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LOCATION:	AP-3476	AP-3477	AP-3478	AP-3479	AP-3480
DATE OF SAMPLING:	10/05/95	10/05/95	10/05/95	10/19/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	118WA	116WA	120WA	153WA	123WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500777-3	A9500777-1	A9500777-5	A9500832-2	A9500789-3
DATE RECEIVED:	10/06/95	10/06/95	10/06/95	10/20/95	10/09/95
DATE TESTED:	10/11/95	10/11/95	10/11/95	10/26/95	10/28/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	0.1	ND (0.1)	ND (0.1)	ND (0.1) J	0.1 B

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

B: Analyte found in the method blank.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
Ft. Richardson Groundwater Study (Fall 1995)
Diesel Range Organics
Method 8100, Modified (ADEC Version)
October, 1995

LOCATION:	AP-3481	AP-3482	AP-3483	AP-3484	AP-3485
DATE OF SAMPLING:	10/06/95	10/06/95	10/17/95	10/17/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	130WA	134WA	129WA	113WA	131WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500789-8	A9500789-11	A9500827-3	A9500827-1	A9500789-9
DATE RECEIVED:	10/09/95	10/09/95	10/17/95	10/17/95	10/09/95
DATE TESTED:	10/29/95	10/29/95	10/24/95	10/24/95	10/29/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	ND (0.1) J	0.1 B	ND (0.1) J	ND (0.1)	0.1 B

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

B: Analyte found in the method blank.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
 Ft. Richardson Groundwater Study (Fall 1995)
 Diesel Range Organics
 Method 8100, Modified (ADEC Version)
 October, 1995

	AP-3530	AP-3531	AP-3532	QA Dup AP-3532	QC Dup AP-3532
LOCATION:	AP-3530	AP-3531	AP-3532	AP-3532	AP-3532
DATE OF SAMPLING:	10/06/95	10/06/95	10/18/95	10/18/95	10/18/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	122WA	125WA	155WA	156WA	157WA
TESTING LABORATORY:	CAS	CAS	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500789-2	A9500789-5	A9500829-3	254216	A9500829-4
DATE RECEIVED:	10/09/95	10/09/95	10/19/95	10/21/95	10/19/95
DATE TESTED:	10/28/95	10/13/95	10/24/95	10/26/95	10/24/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	0.1 B	ND (0.1) J	ND (0.1)	ND (0.1)	ND (0.1) J

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

J: Reported value or MRL is considered an estimate.

B: Analyte found in the method blank.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
 Ft. Richardson Groundwater Study (Fall 1995)
 Diesel Range Organics
 Method 8100, Modified (ADEC Version)
 October, 1995

LOCATION:	AP-3533	FR-1	FR-2	FR-3	Otter Lake
DATE OF SAMPLING:	10/17/95	10/03/95	10/03/95	10/04/95	10/27/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #:	95FRGW 128WA	102WA	101WA	107WA	167WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500827-2	A9500767-2	A9500767-1	A9500773-7	A9500873-1
DATE RECEIVED:	10/17/95	10/04/95	10/04/95	10/05/95	10/27/95
DATE TESTED:	10/24/95	10/11/95	10/11/95	10/11/95	11/01/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	0.1

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 3
 Ft. Richardson Groundwater Study (Fall 1995)
 Diesel Range Organics
 Method 8100, Modified (ADEC Version)
 October, 1995

LOCATION:	TW-1	Well 1	Well 3	Well B
DATE OF SAMPLING:	10/10/95	10/20/95	10/20/95	10/24/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #:	95FRGW 136WA	160WA	159WA	174WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500798-6	A9500850-11	A9500850-10	A9500857-2
DATE RECEIVED:	10/11/95	10/23/95	10/23/95	10/25/95
DATE TESTED:	10/16/95	10/29/95	10/29/95	11/02/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L
Diesel Range Organics	ND (0.1)	ND (0.1)	ND (0.1)	0.2

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

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LOCATION:	A-1	A-6	ADFG-9	ADFG-C
DATE OF SAMPLING:	10/10/95	10/10/95	10/20/95	10/20/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	132WA	126WA	165WA	162WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506410-005	K9506410-003	K9506697-009	K9506697-007
DATE RECEIVED:	10/12/95	10/12/95	10/24/95	10/24/95
DATE TESTED:	10/18/95	10/18/95	11/06/95	11/06/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Pyrene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

LOCATION:	ADFG-K	AK-2127
DATE OF SAMPLING:	10/20/95	10/19/95
TYPE OF SAMPLE:	Water	Water
FIELD SAMPLE #:	95FRGW 164WA	154WA
TESTING LABORATORY:	CAS	CAS
LABORATORY SAMPLE #:	K9506697-008	K9506642-003
DATE RECEIVED:	10/24/95	10/21/95
DATE TESTED:	11/06/95	11/04/95
CONCENTRATION UNITS:	ug/L	ug/L

Acenaphthene	ND (0.5) J	ND (0.5)
Acenaphthylene	ND (0.5) J	ND (0.5)
Anthracene	ND (0.1) J	ND (0.1)
Benzo(a)anthracene	ND (0.1) J	ND (0.1)
Benzo(a)pyrene	ND (0.1) J	ND (0.1)
Benzo(b)fluoranthene	ND (0.2) J	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2) J	ND (0.2)
Benzo(k)fluoranthene	ND (0.1) J	ND (0.1)
Chrysene	ND (0.1) J	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1) J	ND (0.1)
Fluoranthene	ND (0.2) J	ND (0.2)
Fluorene	ND (0.2) J	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1) J	ND (0.1)
Naphthalene	ND (0.5) J	ND (0.5)
Phenanthrene	ND (0.1) J	ND (0.1)
Pyrene	ND (0.2) J	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

J: Estimated Value

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

		QA Dup	QC Dup
LOCATION:	AP-2974	AP-2974	AP-2974
DATE OF SAMPLING:	10/25/95	10/25/95	10/25/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	177WA	178WA	179WA
TESTING LABORATORY:	CAS	NET	CAS
LABORATORY SAMPLE #:	K9506786-001	254454	K9506786-002
DATE RECEIVED:	10/27/95	10/28/95	10/27/95
DATE TESTED:	11/07/95	11/08/95	11/07/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (8.0)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (1.0)	ND (0.5)
Anthracene	ND (0.1)	ND (0.08)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.3)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.1)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.4)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.2)	ND (0.1)
Chrysene	ND (0.1)	ND (0.08)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.8)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.4)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.2)	ND (0.1)
Naphthalene	ND (0.5)	ND (2.0)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.08)	ND (0.1)
Pyrene	ND (0.2)	ND (0.8)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

NET: NET Inc., Santa Rosa, CA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

	QA Dup	QC Dup		
LOCATION:	AP-2982	AP-2982	AP-2982	AP-2985
DATE OF SAMPLING:	10/12/95	10/12/95	10/12/95	10/13/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	144WA	145WA	146WA	143WA
TESTING LABORATORY:	CAS	CAS	NET	CAS
LABORATORY SAMPLE #:	K9506486-003	K9506486-004	253683	K9506552-008
DATE RECEIVED:	10/14/95	10/14/95	10/17/95	10/18/95
DATE TESTED:	10/22/95	10/22/95	10/25/95	11/04/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	0.3 J	0.3 J	ND (8.0)	ND (0.5)
Acenaphthylene	ND (2) DF,DT	ND (3) DF,DT	ND (1.0)	ND (0.5)
Anthracene	ND (0.1)	ND (0.1)	ND (0.08)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.3)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.1)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.4)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.2)	ND (0.1)
Chrysene	ND (0.1)	ND (0.1)	ND (0.08)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.8)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.4)	ND (0.2)
Fluorene	ND (0.2) DT	0.07 J	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.2)	ND (0.1)
Naphthalene	16	14	ND (2.0)	ND (0.5)
Phenanthrene	0.2	0.2	ND (0.08)	ND (0.1)
Pyrene	ND (0.2)	ND (0.2)	ND (0.8)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

NET: NET Inc., Santa Rosa, CA.

DF: Reporting limit elevated due to matrix interferences.

DT: Method detection limit elevated.

J: Estimated Value

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

LOCATION:	AP-3010	AP-3011	AP-3013	AP-3014
DATE OF SAMPLING:	10/04/95	10/16/95	10/18/95	10/03/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #:	95FRGW 109WA	112WA	115WA	104WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506285-002	K9506558-001	K9506619-001	K9506246-004
DATE RECEIVED:	10/06/95	10/18/95	10/20/95	10/05/95
DATE TESTED:	10/10/95	11/04/95	11/04/95	10/17/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (1)	ND (1)	ND (0.5)	ND (0.5)
Acenaphthylene	ND (1)	ND (1)	ND (0.5)	ND (0.5)
Anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Naphthalene	ND (1)	ND (0.1)	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Pyrene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

LOCATION:	AP-3015	AP-3219	AP-3221
DATE OF SAMPLING:	10/03/95	10/15/95	10/03/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	105WA	111WA	103WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506246-005	K9506552-003	K9506246-003
DATE RECEIVED:	10/05/95	10/18/95	10/05/95
DATE TESTED:	10/17/95	11/03/95	10/17/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (0.5)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (0.5)	ND (0.5)
Anthracene	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.1)	ND (0.1)
Pyrene	ND (0.2)	ND (0.2)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

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		QA Dup	QC Dup	
LOCATION:	AP-3222	AP-3222	AP-3222	AP-3231
DATE OF SAMPLING:	10/15/95	10/15/95	10/15/95	10/12/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	106WA	108WA	110WA	138WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506552-001	254000	K9506552-002	K9506486-001
DATE RECEIVED:	10/18/95	10/19/95	10/18/95	10/14/95
DATE TESTED:	11/03/95	10/26/95	11/03/95	10/22/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (8) J,U	ND (0.5)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (1) J,U	ND (0.5)	ND (0.5)
Anthracene	ND (0.1)	ND (0.08) J,U	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1) J,U	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.3) J,U	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.1) J,U	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.4) J,U	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.2) J,U	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.08) J,U	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.8) J,U	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.4) J,U	ND (0.2)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2) J,U	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.2) J,U	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (2) J,U	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.08) J,U	ND (0.1)	ND (0.1)
Pyrene	ND (0.2)	ND (0.8) J,U	ND (0.2)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

NET: NET Inc., Santa Rosa, CA.

J: Estimated Value

U: Sample was analyzed beyond recommended holding time.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

		QA Dup	QC Dup
LOCATION:	AP-3233	AP-3233	AP-3233
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #:	95FRGW 168WA	169WA	170WA
TESTING LABORATORY:	CAS	NET	CAS
LABORATORY SAMPLE #:	K9506717-002	254420	K9506717-003
DATE RECEIVED:	10/25/95	10/27/95	10/25/95
DATE TESTED:	11/07/95	11/07/95	11/07/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Acenaphthene	0.9	ND (8)	1.1
Acenaphthylene	8.5	ND (1)	10
Anthracene	ND (0.1)	ND (0.08)	0.006 J
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.3)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.1)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.4)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.2)	ND (0.1)
Chrysene	ND (0.1)	ND (0.08)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.8)	ND (0.1)
Fluoranthene	0.008 J	ND (0.4)	0.009 J
Fluorene	0.8	ND (0.2)	0.9
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.2)	ND (0.1)
Naphthalene	8.4	ND (2)	9.7
Phenanthrene	0.7	ND (0.08)	0.7
Pyrene	ND (0.2) DT	ND (0.8)	ND (0.2) DT

CAS: Columbia Analytical Services, Inc. Kelso WA.

NET: NET Inc., Santa Rosa, CA.

DT: Method detection limit elevated.

J: Estimated Value

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-3235	AP-3235	AP-3235	AP-3447
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95	10/19/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	171WA	172WA	173WA	158WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506717-004	254421	K9506717-005	K9506642-004
DATE RECEIVED:	10/25/95	10/27/95	10/25/95	10/21/95
DATE TESTED:	11/07/95	11/07/95	11/07/95	11/05/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	0.08 J	ND (8.0)	ND (0.5)	ND (0.5)
Acenaphthylene	1.4	ND (1.0)	0.9	ND (0.5)
Anthracene	ND (0.1)	ND (0.08)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.3)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.1)	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.4)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.2)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.08)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.8)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2) DT	ND (0.4)	ND (0.2) DT	ND (0.2)
Fluorene	0.08 J	ND (0.2)	0.09 J	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.2)	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (2.0)	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1) DT	ND (0.08)	ND (0.1) DT	ND (0.1)
Pyrene	0.009	ND (0.8)	0.009 J	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

NET: NET Inc., Santa Rosa, CA.

DT: Method detection limit elevated.

J: Estimated Value

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

LOCATION:	AP-3448	AP-3449	AP-3450	AP-3451
DATE OF SAMPLING:	10/08/95	10/21/95	10/10/95	10/20/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	135WA	166WA	127WA	161WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506361-012	K9506697-014	K9506410-004	K9506697-012
DATE RECEIVED:	10/10/95	10/24/95	10/12/95	10/24/95
DATE TESTED:	10/14/95	11/07/95	10/18/95	11/07/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Pyrene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

LOCATION:	AP-3452	AP-3453	AP-3454	AP-3455
DATE OF SAMPLING:	10/10/95	10/19/95	10/21/95	10/08/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	137WA	152WA	163WA	133WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506410-007	K9506642-001	K9506697-013	K9506361-010
DATE RECEIVED:	10/12/95	10/21/95	10/24/95	10/10/95
DATE TESTED:	10/18/95	11/04/95	11/07/95	10/14/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Pyrene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

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	AP-3457	AP-3458	QC Dup AP-3458	QA Dup AP-3458
LOCATION:	AP-3457	AP-3458	AP-3458	AP-3458
DATE OF SAMPLING:	10/12/95	10/13/95	10/13/95	10/13/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	139WA	140WA	141WA	142WA
TESTING LABORATORY:	CAS	CAS	CAS	NET
LABORATORY SAMPLE #:	K9506486-002	K9506552-006	K9506552-007	253998
DATE RECEIVED:	10/14/95	10/18/95	10/18/95	10/19/95
DATE TESTED:	10/22/95	11/04/95	11/04/95	10/26/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (0.5) DT	ND (0.5) DT	ND (8.0)
Acenaphthylene	ND (0.5)	ND (0.5) DF,DT	ND (0.5) DF,DT	ND (1.0)
Anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.08)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.3)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.1)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.4)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.2)
Chrysene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.08)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.8)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.4)
Fluorene	ND (0.2)	0.5	0.5	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.2)
Naphthalene	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
Phenanthrene	ND (0.1)	ND (0.1) DT	ND (0.1) DT	ND (0.08)
Pyrene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.8)

CAS: Columbia Analytical Services, Inc. Kelso WA.

NET: NET Inc., Santa Rosa, CA.

DF: Reporting limit elevated due to matrix interferences.

DT: Method detection limit elevated.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4

Ft. Richardson Groundwater Study (Fall 1995)

Polyaromatic Hydrocarbons

Method 8310

October, 1995

LOCATION:	AP-3459	AP-3470	AP-3471	AP-3472
DATE OF SAMPLING:	10/13/95	10/05/95	10/06/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	148WA	117WA	121WA	124WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506552-009	K9506309-002	K9506361-001	K9506361-004
DATE RECEIVED:	10/18/95	10/07/95	10/10/95	10/10/95
DATE TESTED:	11/04/95	10/18/95	10/14/95	10/14/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Pyrene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

LOCATION:	AP-3473	AP-3474	AP-3475	AP-3476
DATE OF SAMPLING:	10/05/95	10/24/95	10/17/95	10/05/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	119WA	114WA	147WA	118WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506309-004	K9506749-001	K9506632-004	K9506309-003
DATE RECEIVED:	10/07/95	10/26/95	10/20/95	10/07/95
DATE TESTED:	10/18/95	11/07/95	10/29/95	10/18/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Pyrene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

LOCATION:	AP-3477	AP-3478	AP-3479	AP-3480
DATE OF SAMPLING:	10/05/95	10/05/95	10/19/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	116WA	120WA	153WA	123WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506309-001	K9506309-005	K9506642-002	K9506361-003
DATE RECEIVED:	10/07/95	10/07/95	10/21/95	10/06/95
DATE TESTED:	10/18/95	10/18/95	11/04/95	10/14/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Pyrene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

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LOCATION:	AP-3481	AP-3482	AP-3483	AP-3484
DATE OF SAMPLING:	10/08/95	10/08/95	10/17/95	10/17/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	130WA	134WA	129WA	113WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506361-008	K9506361-011	K9506632-003	K9506632-001
DATE RECEIVED:	10/10/95	10/10/95	10/20/95	10/20/95
DATE TESTED:	10/14/95	10/14/95	10/28/95	10/28/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Pyrene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

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LOCATION:	AP-3485	AP-3530	AP-3531
DATE OF SAMPLING:	10/08/95	10/06/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #:	95FRGW 131WA	122WA	125WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506361-009	K9506361-002	K9506361-005
DATE RECEIVED:	10/10/95	10/10/95	10/10/95
DATE TESTED:	10/14/95	10/14/95	10/14/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (0.5)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (0.5)	ND (0.5)
Anthracene	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.1)	ND (0.1)
Pyrene	ND (0.2)	ND (0.2)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

		QA Dup	QC Dup	
LOCATION:	AP-3532	AP-3532	AP-3532	AP-3533
DATE OF SAMPLING:	10/18/95	10/18/95	10/18/95	10/17/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	155WA	156WA	157WA	128WA
TESTING LABORATORY:	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	K9506619-003	254216	K9506619-004	K9506632-002
DATE RECEIVED:	10/20/95	10/21/95	10/20/95	10/20/95
DATE TESTED:	11/04/95	10/27/95	11/04/95	10/28/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (8.0)	ND (0.5)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (1.0)	ND (0.5)	ND (0.5)
Anthracene	ND (0.1)	ND (0.08)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.3)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.1)	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.4)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.2)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.08)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.8)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.4)	ND (0.2)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.2)	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (2.0)	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.08)	ND (0.1)	ND (0.1)
Pyrene	ND (0.2)	ND (0.8)	ND (0.2)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

NET: NET Inc., Santa Rosa, CA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

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LOCATION:	FR-1	FR-2	FR-3	Otter Lake
DATE OF SAMPLING:	10/03/95	10/03/95	10/04/95	10/27/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	101WA	102WA	107WA	167WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506246-001	K9506246-002	K9506285-001	K9506812-001
DATE RECEIVED:	10/05/95	10/05/95	10/06/95	10/28/95
DATE TESTED:	10/17/95	10/17/95	10/10/95	11/06/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)
Anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2) DT
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	0.03 J
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Pyrene	ND (0.2) DT	ND (0.2)	ND (0.2)	0.03 J

CAS: Columbia Analytical Services, Inc. Kelso WA.

DT: Method detection limit elevated.

J: Estimated Value

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 4
 Ft. Richardson Groundwater Study (Fall 1995)
 Polyaromatic Hydrocarbons
 Method 8310
 October, 1995

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LOCATION:	TW-1	Well 1	Well 3	Well B
DATE OF SAMPLING:	10/10/95	10/20/95	10/20/95	10/24/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	136WA	160WA	159WA	174WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506410-006	K9506697-011	K9506697-010	K9506749-002
DATE RECEIVED:	10/12/95	10/24/95	10/24/95	10/26/95
DATE TESTED:	10/18/95	11/06/95	11/06/95	11/07/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Acenaphthylene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(g,h,i)perylene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo(k)fluoranthene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chrysene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Dibenzo(a,h)anthracene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Fluoranthene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Fluorene	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Indeno(1,2,3-cd)pyrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Naphthalene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Phenanthrene	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Pyrene	ND (0.2) DT	ND (0.2)	ND (0.2)	ND (0.2)

CAS: Columbia Analytical Services, Inc. Kelso WA.

DT: Method detection limit elevated.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

Page 1 of 16

LOCATION:	A-1	A-6	ADFG-9	ADFG-C	ADFG-K
DATE OF SAMPLING:	10/10/95	10/10/95	10/20/95	10/20/95	10/20/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	132WA	126WA	165WA	162WA	164WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500798-5	A9500798-3	A9500850-9	A9500850-7	A9500850-8
DATE RECEIVED:	10/11/95	10/11/95	10/23/95	10/23/95	10/23/95
DATE TESTED:	10/20-27/95	10/20-27/95	10/30-11/15/95	10/30-11/15/95	10/30-11/15/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	100	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	ND (5)	7	4 J	7	7
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	31300	19500	28800	25300	25400
Chromium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Iron	170	1370	ND (20)	ND (20)	250
Lead	ND (2)	ND (2)	3	1 J	ND (2)
Magnesium	4610	3230	4730	3880	4010
Manganese	ND (5)	16	ND (5)	ND (5)	4 J
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)
Potassium	ND (1000)	ND (1000)	400 J	400 J	300 J
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	2300	2500	2200	2400	2200
Thallium	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Zinc	ND (10)	10	ND (10)	ND (10)	ND (10)
Turbidity	NT	NT	NT	NT	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value is considered an estimate.

Turbidity units in NTU (Nephelometric Turbidity Units)

NT: Not Tested.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

	AK-2127	AP-2974	QA Dup AP-2974	QC Dup AP-2974
LOCATION:	AK-2127	AP-2974	AP-2974	AP-2974
DATE OF SAMPLING:	10/19/95	10/25/95	10/25/95	10/25/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	154WA	177WA	178WA	179WA
TESTING LABORATORY:	CAS	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500832-3	A9500865-1	254454	A9500865-2
DATE RECEIVED:	10/20/95	10/26/95	10/26/95	10/26/95
DATE TESTED:	10/29-11/14/95	11/08-20/95	10/31-11/07/95	11/08-20/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	2900 B	2300	3100
Antimony	ND (5)	ND (5)	ND (100)	ND (5)
Arsenic	ND (5)	2 J	ND (5)	3 J
Barium	7	85	70	88
Beryllium	ND (5)	ND (5)	ND (20)	ND (5)
Cadmium	ND (5)	ND (5)	ND (20)	ND (5)
Calcium	30500	61800	57000	58000
Chromium	ND (10)	8 J	ND (20)	6 J
Cobalt	ND (10)	ND (10)	ND (50)	ND (10)
Copper	ND (10)	7 J	ND (20)	6 J
Iron	290	3350	3400	3340
Lead	ND (2)	2 J	ND (2)	2
Magnesium	7320	14400	15000	13700
Manganese	5 J	120	120	115
Mercury	ND (0.5)	ND (0.5)	ND (0.2)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (50)	ND (30)
Potassium	800 J	3000	2000	3000
Selenium	2 J	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (20)	ND (5)
Sodium	3700	18300	19000	17800
Thallium	ND (2)	ND (2)	ND (200)	ND (2)
Vanadium	ND (10)	ND (10)	ND (50)	ND (10)
Zinc	10	8 J	ND (50)	9 J
Turbidity	NT	NT	NT	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa, CA.

J: Reported value is considered an estimate.

Turbidity units in NTU (Nephelometric Turbidity Units)

NT: Not Tested.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

	QC Dup	QA Dup			
LOCATION:	AP-2982	AP-2982	AP-2982	AP-2985	AP-3010
DATE OF SAMPLING:	10/12/95	10/12/95	10/12/95	10/13/95	10/04/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	144WA	145WA	146WA	143WA	109WA
TESTING LABORATORY:	CAS	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	A9500804-3	A9500804-4	253683	A9500815-8T	A9500773-8
DATE RECEIVED:	10/13/95	10/13/95	10/17/95	10/16/95	10/05/95
DATE TESTED:	10/19-31/95	10/19-31/95	10/21-27/95	10/19-11/01/95	10/16-27/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	2600	2600	2600	5300	200
Antimony	ND (5)	ND (5)	ND (100)	ND (5)	ND (100)
Arsenic	7	7	6	ND (5)	ND (5)
Barium	25	27	20	40	10
Beryllium	ND (5)	ND (5)	ND (20)	ND (5)	ND (20)
Cadmium	ND (5)	ND (5)	ND (20)	ND (5)	ND (20)
Calcium	16200	16600	17000	10700	65300
Chromium	ND (10)	ND (10)	ND (20)	5 J	ND (20)
Cobalt	ND (10)	ND (10)	ND (50)	ND (10)	ND (50)
Copper	10	10	ND (20)	12	ND (20)
Iron	4680	4810	5200	5990	520
Lead	4	3	ND (2)	5	4
Magnesium	3730	3800	4100	3220	22200
Manganese	1220	1320	1400	186	18
Mercury	ND (0.5)	ND (0.5)	ND (0.2)	ND (0.5)	ND (0.2)
Nickel	ND (30)	ND (30)	ND (50)	6 J	ND (50)
Potassium	ND (1000)	ND (1000)	ND (2000)	800 J	1000
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (20)	ND (5)	ND (20)
Sodium	7400	7500	8000	8800	3200
Thallium	ND (2)	ND (2)	ND (200)	ND (2)	ND (200)
Vanadium	ND (10)	ND (10)	ND (50)	14	ND (50)
Zinc	20	30	ND (50)	22	ND (50)
Turbidity	NT	NT	NT	NT	6.8

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa, CA.

J: Reported value is considered an estimate.

Turbidity units in NTU (Nephelometric Turbidity Units)

NT: Not Tested.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

LOCATION:	AP-3011	AP-3013	AP-3014	AP-3015	AP-3219
DATE OF SAMPLING:	10/16/95	10/18/95	10/03/95	10/03/95	10/15/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	112WA	115WA	104WA	105WA	111WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500820-1	A9500829-1	A9500767-4	A9500767-5	A9500815-3T
DATE RECEIVED:	10/17/95	10/19/95	10/04/95	10/04/95	10/16/95
DATE TESTED:	10/19-31/95	10/23-11/01/95	10/20-25/95	10/10-25/95	10/19-11/01/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	400	ND (100)	ND (100)	3500	2300
Antimony	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	20	7	6	63	24
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	137000	53700	15200	62000	7840
Chromium	ND (10)	ND (10)	ND (10)	10	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)	9 J
Iron	820	ND (20)	120	1620	4160
Lead	7	ND (2)	ND (2)	7	ND (2)
Magnesium	27100	8020	4750	8830	3040
Manganese	12	ND (5)	15	64	138
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	ND (30)	10 J
Potassium	ND (1000)	ND (1000)	1000	1000	500 J
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	4200	3000	2560	3590	1300
Thallium	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	ND (10)	15
Zinc	ND (10)	ND (10)	ND (10)	20	12
Turbidity	11.5	ND (0.5)	1.7	76	60

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

Turbidity units in NTU (Nephelometric Turbidity Units)

J: Reported value is considered an estimate.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

Page 5 of 16

			QA Dup	QC Dup	
LOCATION:	AP-3221	AP-3222	AP-3222	AP-3222	AP-3231
DATE OF SAMPLING:	10/03/95	10/15/95	10/15/95	10/15/95	10/12/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	103WA	106WA	108WA	110WA	138WA
TESTING LABORATORY:	CAS	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	A9500767-3	A9500815-1T	254000	A9500815-2T	A9500804-1
DATE RECEIVED:	10/04/95	10/16/95	10/17/95	10/16/95	10/13/95
DATE TESTED:	10/10-25/95	10/19-11/01/95	10/23-31/95	10/19-11/01/95	10/19-31/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	4000	ND (100)	ND (200)	ND (100)	18800
Antimony	ND (5)	ND (5)	ND (100)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	8
Barium	68	10	ND (20)	6	178
Beryllium	ND (5)	ND (5)	ND (20)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (20)	ND (5)	ND (5)
Calcium	117000	53600	51000 BA	54200	14200
Chromium	30	8 J	ND (20)	ND (10)	30
Cobalt	ND (10)	ND (10)	ND (50)	ND (10)	20
Copper	ND (10)	ND (10)	ND (20)	ND (10)	70
Iron	6390	ND (20)	ND (100)	12 J	24500
Lead	ND (2)	ND (2)	ND (2)	ND (2)	14
Magnesium	21600	8520	8600	8560	8080
Manganese	118	ND (5)	ND (20)	ND (5)	909
Mercury	ND (0.5)	ND (0.5)	ND (0.2)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (50)	ND (30)	40
Potassium	2000	ND (1000)	ND (2000)	ND (1000)	2000
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (20)	ND (5)	ND (5)
Sodium	4980	2900	3200	3000	8500
Thallium	ND (2)	ND (2)	ND (200)	ND (2)	ND (2)
Vanadium	ND (10)	3 J	ND (50)	ND (10)	30
Zinc	20	ND (10)	ND (50)	ND (10)	80
Turbidity	160	ND (0.5)	0.1	ND (0.5)	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa, CA.

Turbidity units in NTU (Nephelometric Turbidity Units)

J: Reported value is considered an estimate.

BA: Relative percent difference out of control.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

		QA Dup	QC Dup
LOCATION:	AP-3233	AP-3233	AP-3233
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	168WA	169WA	170WA
TESTING LABORATORY:	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500853-2	254420	A9500853-3
DATE RECEIVED:	10/24/95	10/26/95	10/24/95
DATE TESTED:	11/02-15/95	10/31-11/07/95	11/02-15/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (200)	ND (100)
Antimony	ND (5)	ND (100)	ND (5)
Arsenic	7	ND (5)	5
Barium	18	ND (20)	18
Beryllium	ND (5)	ND (20)	ND (5)
Cadmium	ND (5)	ND (20)	ND (5)
Calcium	88700	89000	91200
Chromium	ND (10)	ND (20)	ND (10)
Cobalt	ND (10)	ND (50)	ND (10)
Copper	ND (10)	ND (20)	ND (10)
Iron	1890	1900	1910
Lead	ND (2)	ND (2)	ND (2)
Magnesium	11700	13000	11900
Manganese	1540	1600	1580
Mercury	ND (0.5)	ND (0.2)	ND (0.5)
Nickel	ND (30)	ND (50)	ND (30)
Potassium	900 J	ND (2000)	900 J
Selenium	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (20)	ND (5)
Sodium	3300	3700	3300
Thallium	ND (2)	ND (200)	ND (2)
Vanadium	ND (10)	ND (50)	10
Zinc	ND (10)	ND (50)	ND (10)
Turbidity	NT	NT	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa, CA.

Turbidity units in NTU (Nephelometric Turbidity Units)

J: Reported value is considered an estimate.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

		QA Dup	QC Dup		
LOCATION:	AP-3235	AP-3235	AP-3235	AP-3447	AP-3448
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95	10/19/95	10/08/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	171WA	172WA	173WA	158WA	135WA
TESTING LABORATORY:	CAS	NET	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500853-4	254421	A9500853-5	A9500832-4	A9500789-12
DATE RECEIVED:	10/24/95	10/26/95	10/24/95	10/20/95	10/09/95
DATE TESTED:	11/02-15/95	10/31-11/07/95	11/02-15/95	10/27-11/14/95	10/11-30/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (200)	ND (100)	200	300
Antimony	ND (5)	ND (100)	ND (5)	ND (5)	ND (5)
Arsenic	2	ND (5)	ND (5)	ND (5)	ND (5)
Barium	23	20	23	6	9
Beryllium	ND (5)	ND (20)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (20)	ND (5)	ND (5)	ND (5)
Calcium	94300	94000	93200	19900	21100
Chromium	ND (10)	ND (20)	ND (10)	40	ND (10)
Cobalt	ND (10)	ND (50)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (20)	ND (10)	ND (10)	ND (10)
Iron	110	100	100	470	420
Lead	ND (2)	ND (2)	1 J	ND (2)	ND (2)
Magnesium	11300	12000	11100	2950	3410
Manganese	421	440	415	41	20
Mercury	ND (0.5)	ND (0.2)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (50)	ND (30)	40	ND (30)
Potassium	1000	ND (2000)	1000	ND (1000)	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)	2 J	ND (5)
Silver	ND (5)	ND (20) BC	ND (5)	ND (5)	ND (5)
Sodium	3400	4000	3300	2100	2600
Thallium	ND (2)	ND (200)	ND (2)	ND (2)	ND (2)
Vanadium	10	ND (50)	20	ND (10)	ND (10)
Zinc	ND (10)	ND (50)	ND (10)	ND (10)	ND (10)
Turbidity	NT	NT	NT	NT	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa, CA.

Turbidity units in NTU (Nephelometric Turbidity Units)

J: Reported value is considered an estimate.

BC: Matrix spike out of control, lab control sample within limits.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

LOCATION:	AP-3449	AP-3450	AP-3451	AP-3452	AP-3453
DATE OF SAMPLING:	10/21/95	10/10/95	10/20/95	10/10/95	10/19/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	166WA	127WA	161WA	137WA	152WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500850-14	A9500798-4	A9500850-12	A9500798-7	A9500832-1
DATE RECEIVED:	10/23/95	10/11/95	10/23/95	10/11/95	10/20/95
DATE TESTED:	10/30-11/15/95	10/20-27/95	10/30-11/15/95	10/20-27/95	10/27-11/14/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	70 J	400	100	13000	13800
Antimony	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	7	8
Barium	5 J	8	6	135	132
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	18500	17900	23400	23700	23700
Chromium	ND (10)	ND (10)	ND (10)	40	40
Cobalt	ND (10)	ND (10)	ND (10)	10	10
Copper	ND (10)	ND (10)	ND (10)	30	50
Iron	80	640	170	16600	21200
Lead	ND (2)	ND (2)	ND (2)	5	6
Magnesium	3220	3380	3620	7900	8860
Manganese	5	18	11	773	827
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	40	50
Potassium	400 J	ND (1000)	500 J	2000	3000
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	2200	2200	2400	2800	2500
Thallium	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	30	40
Zinc	ND (10)	ND (10)	ND (10)	50	70
Turbidity	NT	NT	NT	NT	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

Turbidity units in NTU (Nephelometric Turbidity Units)

J: Reported value is considered an estimate.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

LOCATION:	AP-3454	AP-3455	A-3457
DATE OF SAMPLING:	10/20/95	10/08/95	10/12/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	163WA	133WA	139WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500850-13	A9500789-10	A9500804-2
DATE RECEIVED:	10/23/95	10/09/95	10/13/95
DATE TESTED:	10/30-11/15/95	10/11-30/95	10/19-31/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Aluminum	60 J	5500	2500
Antimony	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)
Barium	7	56	26
Beryllium	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)
Calcium	22900	54600	52200
Chromium	ND (10)	10	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)
Copper	ND (10)	20	20
Iron	50	8210	2980
Lead	ND (2)	4	6
Magnesium	3750	9970	11400
Manganese	ND (5)	231	89
Mercury	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)
Potassium	500 J	2000	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)
Sodium	3100	3200	6800
Thallium	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)
Zinc	ND (10)	30	20
Turbidity	NT	NT	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

Turbidity units in NTU (Nephelometric Turbidity Units)

J: Reported value is considered an estimate.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
Ft. Richardson Groundwater Study (Fall 1995)
23 TAL Metals (Total) & Turbidity
April - July, 1995

	AP-3458	QC Dup AP-3458	QA Dup AP-3458	AP-3459	AP-3470
LOCATION:	AP-3458	AP-3458	AP-3458	AP-3459	AP-3470
DATE OF SAMPLING:	10/13/95	10/13/95	10/13/95	10/13/95	10/05/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	140WA	141WA	142WA	148WA	117WA
TESTING LABORATORY:	CAS	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	A9500815-6T	A9500815-7T	253998	A9500815-11T	A9500777-2
DATE RECEIVED:	10/16/95	10/16/95	10/17/95	10/16/95	10/06/95
DATE TESTED:	10/19-11/01/95	10/23-11/01/95	10/23-11/02/95	10/19-11/01/95	10/16-27/96
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	70 J	70 J	ND (200)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (100)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	13	12	ND (20)	16	ND (5)
Beryllium	ND (5)	ND (5)	ND (20)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (20)	ND (5)	ND (5)
Calcium	47400	45100	44000	27800	45500
Chromium	5 J	ND (10)	ND (20)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (50)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (20)	ND (10)	ND (10)
Iron	3760	3620	3600	18 J	ND (20)
Lead	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Magnesium	9840	9480	9800	5270	6990
Manganese	2890	2770	2800	ND (5)	ND (5)
Mercury	ND (0.5)	ND (0.5)	ND (0.2)	ND (0.5)	ND (0.5)
Nickel	10 J	8 J	ND (50)	ND (30)	ND (30)
Potassium	2000	800 J	ND (2000)	ND (1000)	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (20)	ND (5)	ND (5)
Sodium	5510	5400	5800	4000	2500
Thallium	3	ND (2)	ND (200)	ND (2)	ND (2)
Vanadium	11	3 J	ND (50)	4 J	ND (10)
Zinc	6 J	6 J	ND (50)	ND (10)	ND (10)
Turbidity	NT	NT	NT	NT	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa, CA.

Turbidity units in NTU (Nephelometric Turbidity Units)

J: Reported value is considered an estimate.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

LOCATION:	AP-3471	AP-3472	AP-3473	AP-3474	AP-3475
DATE OF SAMPLING:	10/06/95	10/06/95	10/05/95	10/24/95	10/17/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	121WA	124WA	119WA	114WA	147WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500789-1	A9500789-4	A9500777-4	A9500857-1	A9500827-4
DATE RECEIVED:	10/09/95	10/09/95	10/06/95	10/25/95	10/17/95
DATE TESTED:	10/11-30/95	10/11-30/95	10/16-27/96	11/02-15/95	10/23-11/01/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	9	8	ND (5)	7	10
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	66200	65200	34300	61100	6600
Chromium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (10)	6 J
Copper	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Iron	30	90	100	ND (20)	1210
Lead	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Magnesium	10300	10200	ND (5)	8710	10600
Manganese	ND (5)	9	8430	ND (5)	ND (5)
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	ND (30)	6 J
Potassium	ND (1000)	ND (1000)	ND (1000)	900 J	1000
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	2900	2900	3000	3100	3400
Thallium	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	10	ND (10)
Zinc	ND (10)	ND (10)	ND (10)	10	2 J
Turbidity	NT	NT	NT	NT	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

Turbidity units in NTU (Nephelometric Turbidity Units)

J: Reported value is considered an estimate.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

LOCATION:	AP-3476	AP-3477	AP-3478	AP-3479	AP-3480
DATE OF SAMPLING:	10/05/95	10/05/95	10/05/95	10/19/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #:	95FRGW 118WA	116WA	120WA	153WA	123WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500777-3	A9500777-1	A9500777-5	A9500832-2	A9500789-3
DATE RECEIVED:	10/06/95	10/06/95	10/06/95	10/20/95	10/09/95
DATE TESTED:	10/16-27/95	10/16-27/95	10/16-27/95	10/27-11/14/95	10/11-30/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	11	6	23	7	7
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	105000	36700	30300	39600	62400
Chromium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Iron	60	120	20	20 J	50
Lead	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Magnesium	15100	5470	7210	7800	8760
Manganese	9	5	106	29	7
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)
Potassium	1000	ND (1000)	2000	1000	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)	2 J	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	4100	2400	3300	3600	2800
Thallium	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Zinc	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Turbidity	NT	NT	NT	NT	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

Turbidity units in NTU (Nephelometric Turbidity Units)

J: Reported value is considered an estimate.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

LOCATION:	AP-3481	AP-3482	AP-3483	AP-3484	AP-3485
DATE OF SAMPLING:	10/08/95	10/08/95	10/17/95	10/17/95	10/08/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	130WA	134WA	129WA	113WA	131WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500789-8	A9500789-11	A9500827-3	A9500827-1	A9500789-9
DATE RECEIVED:	10/09/95	10/09/95	10/17/95	10/17/95	10/09/95
DATE TESTED:	10/11-30/95	10/11-30/95	10/23-11/01/95	10/23-11/01/95	10/11-30/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	300	40 J	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	ND (5)	ND (5)	7	9	ND (5)
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	23900	28100	45100	67900	38400
Chromium	ND (10)	ND (10)	10	4 J	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	7 J	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Iron	ND (20)	ND (20)	560	50	ND (20)
Lead	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Magnesium	3670	3990	6840	9040	5570
Manganese	ND (5)	ND (5)	16	12	ND (5)
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	8 J	8 J	ND (30)
Potassium	ND (1000)	ND (1000)	ND (1000)	2000	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	2300	2200	2700	5100	2600
Thallium	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	13	ND (10)
Zinc	ND (10)	ND (10)	ND (10)	5 J	ND (10)
Turbidity	NT	NT	NT	NT	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

Turbidity units in NTU (Nephelometric Turbidity Units)

J: Reported value is considered an estimate.

NT: Not Tested:

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

	AP-3530	AP-3531	AP-3532	QA Dup AP-3532	QC Dup AP-3532
LOCATION:	AP-3530	AP-3531	AP-3532	AP-3532	AP-3532
DATE OF SAMPLING:	10/06/95	10/06/95	10/18/95	10/18/95	10/18/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	122WA	125WA	155WA	156WA	157WA
TESTING LABORATORY:	CAS	CAS	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500789-2	A9500789-5	A9500829-3	254216	A9500829-4
DATE RECEIVED:	10/09/95	10/09/95	10/19/95	10/19/95	10/19/95
DATE TESTED:	10/11-30/95	10/11-30/95	10/23-11/01/95	10/31-11/06/95	10/23-11/01/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)	ND (200)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (100)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	8	8	6	ND (20)	6
Beryllium	ND (5)	ND (5)	ND (5)	ND (20)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (20)	ND (5)
Calcium	59800	62000	58800	59000	55800
Chromium	ND (10)	ND (10)	ND (10)	ND (20)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (50)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (20)	ND (10)
Iron	90	80	ND (20)	ND (100)	20
Lead	ND (2)	7	ND (2)	ND (2)	ND (2)
Magnesium	8290	8620	8530	9000	8120
Manganese	7	7	ND (5)	ND (20)	ND (5)
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.2)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	ND (50)	ND (30)
Potassium	ND (1000)	ND (1000)	ND (1000)	ND (2000)	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (20)	ND (5)
Sodium	2900	3100	3200	3500	3200
Thallium	ND (2)	ND (2)	ND (2)	ND (200)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	ND (50)	ND (10)
Zinc	ND (10)	ND (10)	ND (10)	ND (50)	ND (10)
Turbidity	NT	NT	NT	NT	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa, CA.

Turbidity units in NTU (Nephelometric Turbidity Units)

J: Reported value is considered an estimate.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals (Total) & Turbidity
 April - July, 1995

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LOCATION:	AP-3533	FR-1	FR-2	FR-3	Otter Lake
DATE OF SAMPLING:	10/17/95	10/03/95	10/03/95	10/04/95	10/27/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	128WA	102WA	101WA	107WA	167WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500827-2	A9500767-2	A9500767-1	A9500773-7	A9500873-1
DATE RECEIVED:	10/17/95	10/04/95	10/04/95	10/05/95	10/27/95
DATE TESTED:	10/23-11/01/95	10/10-25/95	10/10-25/95	10/16-25/95	11/8-20/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	70 J	ND (100)	ND (100)	2100	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	2 J
Barium	17	6	ND (5)	24	8
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	60200	53400	15400	53900	56600
Chromium	22	ND (10)	ND (10)	10	ND (10)
Cobalt	6 J	ND (10)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Iron	250	20	ND (20)	3420	18 J
Lead	ND (2)	ND (2)	ND (2)	ND (2)	1 J
Magnesium	8790	7470	4790	10800	7140
Manganese	92	ND (5)	ND (5)	67	2 J
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	30	ND (30)	ND (30)	ND (30)	ND (30)
Potassium	2000	ND (1000)	ND (1000)	1000	700 J
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	4400	2780	2600	2100	2200
Thallium	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Zinc	4 J	ND (10)	ND (10)	50	50
Turbidity	NT	NT	NT	NT	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

Turbidity units in NTU (Nephelometric Turbidity Units)

J: Reported value is considered an estimate.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 5
Ft. Richardson Groundwater Study (Fall 1995)
23 TAL Metals (Total) & Turbidity
April - July, 1995

LOCATION:	TW-1	Well 1	Well 3	Well B
DATE OF SAMPLING:	10/10/95	10/20/95	10/20/95	10/24/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #:	95FRGW 136WA	160WA	159WA	174WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500798-6	A9500850-11	A9500850-10	A9500857-2
DATE RECEIVED:	10/11/95	10/23/95	10/23/95	10/25/95
DATE TESTED:	10/20-27/95	10/30-11/15/95	10/30-11/15/95	11/02-15/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)
Barium	5	4 J	4 J	6
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	30000	42000	36900	42200
Chromium	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)
Iron	4460	ND (20)	ND (20)	110
Lead	2	ND (2)	ND (2)	ND (2)
Magnesium	7070	6940	5280	13100
Manganese	157	ND (5)	ND (5)	7
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	ND (30)
Potassium	ND (1000)	500 J	600 J	900 J
Selenium	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	2900	2700	2300	3200
Thallium	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	10	ND (10)
Zinc	40	10	ND (10)	ND (10)
Turbidity	NT	NT	NT	NT

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

Turbidity units in NTU (Nephelometric Turbidity Units)

J: Reported value is considered an estimate.

ND: Not Detected (The number in parentheses is the Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

LOCATION:	A-1	A-6	ADFG-9	ADFG-C	ADFG-K
DATE OF SAMPLING:	10/10/95	10/10/95	10/20/95	10/20/95	10/20/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	132WA	126WA	165WA	162WA	164WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500798-5	A9500798-3	A9500850-9	A9500850-7	A9500850-8
DATE RECEIVED:	10/11/95	10/11/95	10/23/95	10/23/95	10/23/95
DATE TESTED:	10/20-27/95	10/20-27/95	10/30-11/15/95	10/30-11/15/95	10/30-11/15/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	9	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	ND (5)	6	4 J	6	6
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	30800	19600	31100	19800	25200
Chromium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Iron	ND (20)	340	ND (20)	ND (20)	15 J
Lead	ND (2)	ND (2)	4	ND (2)	ND (2)
Magnesium	4540	3220	5100	3020	4000
Manganese	ND (5)	8	ND (5)	ND (5)	4 J
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)
Potassium	ND (1000)	ND (1000)	400 J	400 J	300 J
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	2300	2500	2300	2500	2300
Thallium	ND (2)	ND (5)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Zinc	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

	AK-2127	AP-2974	QA Dup AP-2974	QC Dup AP-2974
LOCATION:	AK-2127	AP-2974	AP-2974	AP-2974
DATE OF SAMPLING:	10/19/95	10/25/95	10/25/95	10/25/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	154WA	177WA	178WA	179WA
TESTING LABORATORY:	CAS	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500832-3	A9500865-1	254454	A9500865-2
DATE RECEIVED:	10/20/95	10/26/95	10/28/95	10/26/95
DATE TESTED:	10/27-11/14/95	11/08-20/95	10/31-11/8/95	11/08-20/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	30 J,B	ND (200)	50 J
Antimony	ND (5)	ND (5)	ND (100)	ND (5)
Arsenic	ND (5)	1 J	ND (5)	ND (5)
Barium	7	56	50	79
Beryllium	ND (5)	ND (5)	ND (20)	ND (5)
Cadmium	ND (5)	ND (5)	ND (20)	ND (5)
Calcium	30300	58200	56000	62800
Chromium	ND (10)	ND (10)	ND (20)	ND (10)
Cobalt	ND (10)	ND (10)	ND (50)	ND (10)
Copper	ND (10)	ND (10)	ND (20)	ND (10)
Iron	20 J	30	ND (100)	50
Lead	ND (2)	1 J	ND (2)	ND (2)
Magnesium	7230	13000	14000	13900
Manganese	ND (5)	ND (5)	ND (20)	3 J
Mercury	ND (0.5)	ND (0.5)	ND (0.2)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (500)	ND (30)
Potassium	800 J	2000	2100	3000
Selenium	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (200)	ND (5)
Sodium	3600	17900	20000	19000
Thallium	ND (2)	ND (2)	ND (200)	ND (2)
Vanadium	ND (10)	ND (10)	ND (50)	ND (10)
Zinc	10	ND (10)	ND (50)	9 J

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

J: Reported value or MRL is considered an estimate.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

		QA Dup	QC Dup		
LOCATION:	AP-2982	AP-2982	AP-2982	AP-2985	AP-3010
DATE OF SAMPLING:	10/12/95	10/12/95	10/12/95	10/13/95	10/04/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #:	95FRGW 144WA	145WA	146WA	143WA	109WA
TESTING LABORATORY:	CAS	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	A9500804-3	A9500804-4	253683	A9500815-8	A9500773-8
DATE RECEIVED:	10/13/95	10/13/95	10/17/95	10/16/95	10/05/95
DATE TESTED:	10/19-31/95	10/19-31/95	10/21-27/95	10/19-11/01/95	10/16-22/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (200)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (100)	ND (5)	ND (5)
Arsenic	7	7	6	ND (5)	ND (5)
Barium	21	23	30	20	10
Beryllium	ND (5)	ND (5)	ND (20)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (20)	ND (5)	ND (5)
Calcium	16400	16100	17000	9020	66700
Chromium	ND (10)	ND (10)	ND (20)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (50)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (20)	ND (10)	ND (10)
Iron	1560	1470	1600	ND (20)	ND (20)
Lead	ND (2)	6	ND (2)	ND (2)	ND (2)
Magnesium	2920	2890	3000	1610	22600
Manganese	1290	1250	1400	8	11
Mercury	ND (0.5)	ND (0.5)	ND (0.2)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (500)	ND (30)	ND (30)
Potassium	ND (1000)	ND (1000)	ND (2.0)	ND (1000)	1000
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (200)	ND (5)	ND (5)
Sodium	7500	7500	8300	8400	3200
Thallium	ND (2)	ND (2)	ND (200)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (50)	ND (10)	ND (10)
Zinc	ND (10)	20	ND (50)	10	ND (10)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

LOCATION:	AP-3011	AP-3013	AP-3014	AP-3015	AP-3219
DATE OF SAMPLING:	10/16/95	10/18/95	10/03/95	10/03/95	10/15/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	112WA	115WA	104WA	105WA	111WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500820-1	A9500829-1	A9500767-4	A9500767-5	A9500815-3D
DATE RECEIVED:	10/17/95	10/19/95	10/04/95	10/04/95	10/06/95
DATE TESTED:	10/19-31/95	11/01/95	10/10-25/95	10/10-25/95	10/19-11/01/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	ND (5)	23	ND (5)	34	2 J
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	ND (50)	52700	15400	56700	7120
Chromium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Iron	30	ND (20)	ND (20)	ND (20)	ND (20)
Lead	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Magnesium	26500	7870	4790	7980	2040
Manganese	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)
Potassium	ND (1000)	ND (1000)	1000	ND (1000)	600 J
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	4100	2900	2600	2930	1200
Thallium	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	ND (10)	8 J
Zinc	ND (5)	10	ND (10)	ND (10)	2 J

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

			QA Dup	QC Dup	
LOCATION:	AP-3221	AP-3222	AP-3222	AP-3222	AP-3231
DATE OF SAMPLING:	10/03/95	10/15/95	10/15/95	10/15/95	10/12/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	103WA	106WA	108WA	110WA	138WA
TESTING LABORATORY:	CAS	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	A9500767-3	A9500815-1D	254000	A9500815-2D	A9500804-1
DATE RECEIVED:	10/04/95	10/16/95	10/19/95	10/16/95	10/13/95
DATE TESTED:	10/20-25/95	10/19-11/01/95	10/23-31/95	10/19-11/01/95	10/19-31/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (200)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (100)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	57	6	ND (20)	6	ND (5)
Beryllium	ND (5)	ND (5)	ND (20)	ND (5)	34
Cadmium	ND (5)	ND (5)	ND (20)	ND (5)	ND (5)
Calcium	113000	53400	56000	55000	11000
Chromium	ND (10)	ND (10)	ND (20)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (50)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (20)	ND (10)	ND (10)
Iron	ND (20)	ND (20)	ND (100)	ND (20)	ND (20)
Lead	ND (2)	ND (2)	ND (2) BA	ND (2)	ND (2)
Magnesium	19500	8510	9200	8580	2120
Manganese	6	ND (5)	ND (20)	ND (5)	ND (5)
Mercury	ND (0.5)	ND (0.5)	ND (0.2)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (50)	ND (30)	ND (30)
Potassium	1000	ND (1000)	ND (2000)	ND (1000)	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (20)	ND (5)	ND (5)
Sodium	4790	2900	3300	2900	8300
Thallium	ND (2)	ND (2)	ND (200)	ND (2)	ND (2)
Vanadium	ND (10)	6 J	ND (50)	5 J	ND (10)
Zinc	ND (10)	5 J	ND (50)	ND (10)	20

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

J: Reported value or MRL is considered an estimate.

BA: Relative percent difference out of control

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

FTR 0028092

		QA Dup	QC Dup
LOCATION:	AP-3233	AP-3233	AP-3233
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #:	95FRGW 168WA	169WA	170WA
TESTING LABORATORY:	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500853-2	254420	A9500853-3
DATE RECEIVED:	10/24/95	10/27/95	10/24/95
DATE TESTED:	11/02-15/95	10/31-11/07/95	11/2-15/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (200)	ND (100)
Antimony	ND (5)	ND (100)	ND (5)
Arsenic	5	ND (5)	6
Barium	17	ND (20)	17
Beryllium	ND (5)	ND (20)	ND (5)
Cadmium	ND (5)	ND (20)	ND (5)
Calcium	85600	87000	86600
Chromium	ND (10)	ND (20)	ND (10)
Cobalt	ND (10)	ND (50)	ND (10)
Copper	ND (10)	ND (20)	ND (10)
Iron	1880	2000	1900
Lead	ND (2)	ND (2)	ND (2)
Magnesium	11400	13000	11400
Manganese	1490	1600	1510
Mercury	ND (0.5)	ND (0.2)	ND (0.5)
Nickel	ND (30)	ND (500)	ND (30)
Potassium	800 J	ND (2.0)	900 J
Selenium	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (200)	ND (5)
Sodium	3200	3900	3200
Thallium	ND (2)	ND (200)	ND (2)
Vanadium	ND (10)	ND (50)	ND (10)
Zinc	ND (10)	ND (50)	ND (10)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

J: Reported value or MRL is considered an estimate.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

		QA Dup	QC Dup		
LOCATION:	AP-3235	AP-3235	AP-3235	AP-3447	AP-3448
DATE OF SAMPLING:	10/23/95	10/23/95	10/23/95	10/19/95	10/08/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	171WA	172WA	173WA	158WA	135WA
TESTING LABORATORY:	CAS	NET	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500853-4	254421	A9500853-5	A9500832-4	A9500789-12
DATE RECEIVED:	10/24/95	10/27/95	10/24/95	10/20/95	10/09/95
DATE TESTED:	11/02-15/95	10/31-11/07/95	11/02-15/95	10/27-11/14/95	10/11-30/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (200)	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (100)	ND (5)	ND (5)	ND (5)
Arsenic	4	ND (5)	ND (5)	ND (5)	ND (5)
Barium	22	20	22	4 J	6
Beryllium	ND (5)	ND (20)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (20)	ND (5)	ND (5)	ND (5)
Calcium	93400	89000	90600	20300	21100
Chromium	ND (10)	ND (20)	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (50)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (20)	ND (10)	ND (10)	ND (10)
Iron	20	ND (100)	19 J	8 J	ND (20)
Lead	ND (2)	ND (2)	4	ND (2)	ND (2)
Magnesium	11100	12000	10800	2960	3300
Manganese	416	420	402	11	ND (5)
Mercury	ND (0.5)	ND (0.2)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (500)	ND (30)	ND (30)	ND (30)
Potassium	1000	ND (2.0)	1000	ND (1000)	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (200)	ND (5)	ND (5)	ND (5)
Sodium	3400	4000	3200	2300	2600
Thallium	ND (2)	ND (200)	ND (2)	ND (2)	ND (2)
Vanadium	10	ND (50)	20	ND (10)	ND (10)
Zinc	ND (10)	ND (50)	ND (10)	10	ND (10)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

J: Reported value or MRL is considered an estimate.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

LOCATION:	AP-3449	AP-3450	AP-3451	AP-3452	AP-3453
DATE OF SAMPLING:	10/21/95	10/10/95	10/20/95	10/10/95	10/19/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	166WA	127WA	161WA	137WA	152WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500850-14	A9500798-4	A9500850-12	A9500798-7	A9500832-1
DATE RECEIVED:	10/23/95	10/11/95	10/23/95	10/11/95	10/20/95
DATE TESTED:	10/30-11/15/95	10/20-27/95	10/30-11/15/95	10/20-27/95	10/27-11/14/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	4 J	ND (5)	6	ND (5)	ND (5)
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	18700	18400	25100	21300	20300
Chromium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Iron	ND (20)	ND (20)	ND (20)	ND (20)	9 J
Lead	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Magnesium	3200	3310	3850	3930	3310
Manganese	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)
Potassium	400	ND (1000)	400 J	ND (1000)	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	2200	2300	2500	2200	2100
Thallium	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Zinc	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

LOCATION:	AP-3454	AP-3455	AP-3457
DATE OF SAMPLING:	10/20/95	10/08/95	10/12/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	163WA	133WA	139WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500850-13	A9500789-10	A9500804-2
DATE RECEIVED:	10/23/95	10/09/95	10/13/95
DATE TESTED:	10/30-11/15/95	10/11-30/95	10/19-31/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)
Barium	6	9	25
Beryllium	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)
Calcium	23100	52500	47800
Chromium	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)
Iron	ND (20)	ND (20)	ND (20)
Lead	ND (2)	1 J	ND (2)
Magnesium	3780	7620	10100
Manganese	ND (5)	27	22
Mercury	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)
Potassium	ND (1000)	ND (1000)	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)
Sodium	3200	3000	6700
Thallium	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)
Zinc	ND (10)	ND (10)	ND (10)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

		QC Dup	QA Dup		
LOCATION:	AP-3458	AP-3458	AP-3458	AP-3459	AP-3470
DATE OF SAMPLING:	10/13/95	10/13/95	10/13/95	10/13/95	10/05/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	140WA	141WA	142WA	148WA	117WA
TESTING LABORATORY:	CAS	CAS	NET	CAS	CAS
LABORATORY SAMPLE #:	A9500815-6D	A9500815-7D	253998	A9500815-11D	A9500777-2
DATE RECEIVED:	10/16/95	10/16/95	10/19/95	10/16/95	10/06/95
DATE TESTED:	10/19-11/01/95	10/19-11/01/95	10/23-11/02/95	10/19-11/01/95	10/16-27/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	30 J	ND (100)	ND (200)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (100)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	53	31	30	33	5
Beryllium	ND (5)	ND (5)	ND (20)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (20)	ND (5)	ND (5)
Calcium	47000	45200	48000	27600	44900
Chromium	ND (10)	ND (10)	ND (20)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (50)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (20)	ND (10)	ND (10)
Iron	3260	3180	3200	6 J	ND (20)
Lead	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Magnesium	9730	9460	10000	5200	6910
Manganese	2880	2780	3000	ND (5)	ND (5)
Mercury	ND (0.5)	ND (0.5)	ND (0.2)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (500)	ND (30)	ND (30)
Potassium	2000	700 J	ND (2.0)	700 J	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (200)	ND (5)	ND (5)
Sodium	5500	5400	6300	4000	2500
Thallium	ND (2)	ND (2)	ND (200)	ND (2)	ND (2)
Vanadium	17	4 J	ND (50)	5 J	ND (10)
Zinc	18	11	ND (50)	8 J	ND (10)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

J: Reported value or MRL is considered an estimate.

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Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

LOCATION:	AP-3471	AP-3472	AP-3473	AP-3474	AP-3475
DATE OF SAMPLING:	10/06/95	10/06/95	10/05/95	10/24/95	10/13/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	121WA	124WA	119WA	114WA	147WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500789-1	A9500789-4	A9500777-4	A9500857-1	A9500827-4
DATE RECEIVED:	10/09/95	10/09/95	10/06/95	10/25/95	10/17/95
DATE TESTED:	10/11-30/95	10/11-30/95	10/16-27/95	11/02-15/95	10/23-11/01/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	8	8	5	8	10
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	66300	63500	34300	61600	67600
Chromium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Iron	ND (20)	ND (20)	ND (20)	ND (20)	20
Lead	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Magnesium	10400	9990	8390	8720	10700
Manganese	ND (5)	ND (5)	ND (5)	ND (5)	2 J
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	ND (30)	8 J
Potassium	ND (1000)	ND (1000)	ND (1000)	900 J	2000
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	2900	2900	3000	3000	3400
Thallium	ND (5)	ND (5)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	10	12
Zinc	ND (10)	ND (10)	ND (10)	ND (10)	6 J

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

LOCATION:	AP-3476	AP-3477	AP-3478	AP-3479	AP-3480
DATE OF SAMPLING:	10/05/95	10/05/95	10/05/95	10/19/95	10/06/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	118WA	116WA	120WA	153WA	123WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500777-3	A9500777-1	A9500777-5	A9500832-2	A9500789-3
DATE RECEIVED:	10/06/95	10/06/95	10/06/95	10/20/95	10/09/95
DATE TESTED:	10/16-27/95	10/16-27/95	10/16-27/95	10/27-11/14/95	10/11-30/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	11	ND (5)	22	7	7
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	111000	35000	29200	39500	57900
Chromium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Iron	20	ND (20)	ND (20)	30	ND (20)
Lead	ND (2)	ND (2)	ND (2)	ND (2)	10
Magnesium	15800	5230	7000	7730	8230
Manganese	8	ND (5)	102	28	ND (5)
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)
Potassium	1000	ND (1000)	2000	1000	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	4300	2300	3200	3500	2700
Thallium	ND (2)	ND (2)	ND (2)	ND (2)	ND (5)
Vanadium	ND (10)	ND (10)	ND (10)	10	ND (10)
Zinc	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

LOCATION:	AP-3481	AP-3482	AP-3483	AP-3484	AP-3485
DATE OF SAMPLING:	10/08/95	10/08/95	10/17/95	10/17/95	10/08/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	130WA	134WA	129WA	113WA	131WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500789-8	A9500789-11	A9500827-3	A9500827-1	A9500789-9
DATE RECEIVED:	10/09/95	10/09/95	10/17/95	10/17/95	10/09/95
DATE TESTED:	10/11-30/95	10/11-30/95	10/23-11/01/95	10/23-11/01/95	10/11-30/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	ND (5)	ND (5)	5	9	ND (5)
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	23800	28800	43700	68100	38800
Chromium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Iron	22	ND (20)	7 J	20	ND (20)
Lead	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Magnesium	3650	4040	6460	9050	5580
Manganese	ND (5)	ND (5)	2 J	13	ND (5)
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	8 J	10 J	ND (30)
Potassium	ND (1000)	ND (1000)	500 J	2000	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	2300	2100	2600	5100	2500
Thallium	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	12	ND (10)
Zinc	ND (10)	ND (10)	2 J	9 J	ND (10)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

	AP-3530	AP-3531	AP-3532	QA Dup AP-3532	QC Dup AP-3532
LOCATION:	AP-3530	AP-3531	AP-3532	AP-3532	AP-3532
DATE OF SAMPLING:	10/06/95	10/06/95	10/18/95	10/18/95	10/18/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	122WA	125WA	155WA	156WA	157WA
TESTING LABORATORY:	CAS	CAS	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500789-2	A9500789-5	A9500829-3	254216	A9500829-4
DATE RECEIVED:	10/09/95	10/09/95	10/19/95	10/21/95	10/19/95
DATE TESTED:	10/11-30/95	10/11-30/95	11/01/95	10/26-11/06/95	11/01/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)	ND (200)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (100)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	7	8	6	ND (20)	5
Beryllium	ND (5)	ND (5)	ND (5)	ND (20)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (20)	ND (5)
Calcium	60900	60800	57000	58000	56800
Chromium	ND (10)	ND (10)	ND (10)	ND (20)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (50)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (20)	ND (10)
Iron	ND (20)	ND (20)	ND (20)	ND (100)	ND (20)
Lead	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Magnesium	8430	8430	8310	9300	8220
Manganese	ND (5)	ND (5)	ND (5)	ND (20)	ND (5)
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.2)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	ND (500)	ND (30)
Potassium	ND (1000)	ND (1000)	ND (1000)	ND (2.0)	ND (1000)
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (200)	ND (5)
Sodium	3000	3000	3100	3600	3200
Thallium	ND (5)	ND (5)	ND (2)	ND (200)	ND (2)
Vanadium	ND (10)	ND (10)	ND (10)	ND (50)	ND (10)
Zinc	ND (10)	ND (10)	ND (10)	ND (50)	ND (10)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.
 NET: NET Inc., Santa Rosa CA.
 ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

FTR 0028101

LOCATION:	AP-3533	FR-1	FR-2	FR-3	Otter Lake
DATE OF SAMPLING:	10/17/95	10/03/95	10/03/95	10/04/95	10/27/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	128WA	102WA	101WA	107WA	167WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500827-2	A9500767-2	A9500767-1	A9500773-7	A9500873-1
DATE RECEIVED:	10/17/95	10/04/95	10/04/95	10/05/95	10/27/95
DATE TESTED:	10/23-11/01/95	10/10-25/95	10/10-25/95	10/16-27/95	11/08-20/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Barium	16	6	ND (5)	10	8
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	59700	52800	15400	50500	54400
Chromium	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Iron	13 J	ND (20)	ND (20)	ND (20)	ND (20)
Lead	ND (2)	ND (2)	ND (2)	ND (2)	2
Magnesium	8690	7370	4790	9480	6880
Manganese	86	ND (10)	ND (5)	ND (5)	ND (5)
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	14 J	ND (30)	ND (30)	ND (30)	ND (30)
Potassium	2000	ND (1000)	ND (1000)	1000	700 J
Selenium	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	4300	2750	2600	1900	2100
Thallium	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	4 J	ND (10)	ND (10)	ND (10)	ND (10)
Zinc	5 J	ND (10)	ND (10)	ND (10)	50

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 6
 Ft. Richardson Groundwater Study (Fall 1995)
 23 TAL Metals, Dissolved
 October, 1995

LOCATION:	TW-1	Well 1	Well 3	Well B
DATE OF SAMPLING:	10/10/95	10/20/95	10/20/95	10/24/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	136WA	160WA	159WA	174WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500798-6	A9500850-11	A9500850-10	A9500857-2
DATE RECEIVED:	10/11/95	10/23/95	10/23/95	10/25/95
DATE TESTED:	10/20-27/95	10/30-11/15/95	10/30-11/08/95	11/08/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Aluminum	ND (100)	ND (100)	ND (100)	ND (100)
Antimony	ND (5)	ND (5)	ND (5)	ND (5)
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)
Barium	ND (5)	4 J	4 J	5
Beryllium	ND (5)	ND (5)	ND (5)	ND (5)
Cadmium	ND (5)	ND (5)	ND (5)	ND (5)
Calcium	29500	34500	37500	41100
Chromium	ND (10)	ND (10)	ND (10)	ND (10)
Cobalt	ND (10)	ND (10)	ND (10)	ND (10)
Copper	ND (10)	ND (10)	ND (10)	ND (10)
Iron	ND (20)	ND (20)	ND (20)	20
Lead	ND (2)	ND (2)	ND (2)	ND (2)
Magnesium	6980	5650	5380	12900
Manganese	128	ND (5)	ND (5)	6
Mercury	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Nickel	ND (30)	ND (30)	ND (30)	ND (30)
Potassium	ND (1000)	500 J	600 J	900 J
Selenium	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (5)	ND (5)	ND (5)	ND (5)
Sodium	2900	2200	2400	3200
Thallium	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	ND (10)	10	ND (10)	ND (10)
Zinc	ND (10)	10	ND (10)	ND (10)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 7
 Ft. Richardson Groundwater Study (Fall 1995)
 PCB & Pesticides
 Method 8080
 October, 1995

		QA Dup	QC Dup		
LOCATION:	AP-2982	AP-2982	AP-2982	AP-3010	AP-3011
DATE OF SAMPLING:	10/13/95	10/13/95	10/13/95	10/04/95	10/16/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	144WA	145WA	146WA	109WA	112WA
TESTING LABORATORY:	CAS	NET	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500815-9	253999	A9500815-10	A9500773-8	A9500820-1
DATE RECEIVED:	10/16/95	10/19/95	10/16/95	10/05/95	10/17/95
DATE TESTED:	10/25/95	12/01/95	10/25/95	10/12/95	10/25/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
4,4'-DDD	NT	NT	NT	ND (0.04)	ND (0.04)
4,4'-DDE	NT	NT	NT	ND (0.04)	ND (0.04)
4,4'-DDT	NT	NT	NT	ND (0.04)	ND (0.04)
Aldrin	NT	NT	NT	ND (0.04)	ND (0.04)
Chlordane	NT	NT	NT	ND (0.5)	ND (0.5)
Dieldrin	NT	NT	NT	ND (0.04)	ND (0.04)
Endosulfan I	NT	NT	NT	ND (0.04)	ND (0.04)
Endosulfan II	NT	NT	NT	ND (0.04)	ND (0.04)
Endosulfan sulfate	NT	NT	NT	ND (0.04)	ND (0.04)
Endrin	NT	NT	NT	ND (0.04)	ND (0.04)
Endrin aldehyde	NT	NT	NT	ND (0.04)	ND (0.04)
Heptachlor	NT	NT	NT	ND (0.04)	ND (0.04)
Heptachlor epoxide	NT	NT	NT	ND (0.04)	ND (0.04)
Methoxychlor	NT	NT	NT	ND (0.1)	ND (0.1)
PCB-1016	ND (0.1)	ND (0.5)	ND (0.1)	ND (0.2)	ND (0.1)
PCB-1221	ND (0.1)	ND (1.0)	ND (0.1)	ND (0.2)	ND (0.1)
PCB-1232	ND (0.1)	ND (0.5)	ND (0.1)	ND (0.2)	ND (0.1)
PCB-1242	ND (0.1)	ND (0.6)	ND (0.1)	ND (0.2)	ND (0.1)
PCB-1248	ND (0.1)	ND (0.5)	ND (0.1)	ND (0.2)	ND (0.1)
PCB-1254	ND (0.1)	ND (0.5)	ND (0.1)	ND (0.2)	ND (0.1)
PCB-1260	ND (0.1)	ND (0.5)	ND (0.1)	ND (0.2)	ND (0.1)
Toxaphene	NT	NT	NT	ND (1)	ND (1)
alpha-BHC	NT	NT	NT	ND (0.04)	ND (0.04)
beta-BHC	NT	NT	NT	ND (0.1)	ND (0.1)
delta-BHC	NT	NT	NT	ND (0.04)	ND (0.04)
gamma-BHC (Lindane)	NT	NT	NT	ND (0.04)	ND (0.04)

CAS: Columbia Analytical Services, Inc. Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

NT: Not Tested.

ND: Not Detected. (The number in parenthesis is Method Reporting Limit (MRL)).

Table 7
 Ft. Richardson Groundwater Study (Fall 1995)
 PCB & Pesticides
 Method 8080
 October, 1995

FTR 0028104

LOCATION:	AP-3013	AP-3014	AP-3015	AP-3219	AP-3221
DATE OF SAMPLING:	10/18/95	10/03/95	10/03/95	10/15/95	10/03/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	115WA	104WA	105WA	111WA	103WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500829-1	A9500767-4	A9500767-5	A9500815-3	A9500767-3
DATE RECEIVED:	10/19/95	10/04/95	10/04/95	10/16/95	10/04/95
DATE TESTED:	11/01/95	10/12/95	10/12/95	10/25/95	10/12/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
4,4'-DDD	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
4,4'-DDE	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
4,4'-DDT	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
Aldrin	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
Chlordane	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dieldrin	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
Endosulfan I	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
Endosulfan II	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
Endosulfan sulfate	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
Endrin	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
Endrin aldehyde	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
Heptachlor	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
Heptachlor epoxide	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
Methoxychlor	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
PCB-1016	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
PCB-1221	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
PCB-1232	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
PCB-1242	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
PCB-1248	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
PCB-1254	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
PCB-1260	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Toxaphene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
alpha-BHC	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
beta-BHC	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
delta-BHC	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)
gamma-BHC (Lindane)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)

CAS: Columbia Analytical Services, Inc. Anchorage, AK.

ND: Not Detected. (The number in parenthesis is Method Reporting Limit (MRL)).

Table 7
 Ft. Richardson Groundwater Study (Fall 1995)
 PCB & Pesticides
 Method 8080
 October, 1995

		QA Dup	QC Dup		
LOCATION:	AP-3222	AP-3222	AP-3222	AP-3231	FR-1
DATE OF SAMPLING:	10/15/95	10/15/95	10/15/95	10/13/95	10/03/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	106WA	108WA	110WA	138WA	102WA
TESTING LABORATORY:	CAS	NET	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500815-1	254000	A9500815-2	A9500815-4	A9500767-2
DATE RECEIVED:	10/16/95	10/19/95	10/16/95	10/16/95	10/04/95
DATE TESTED:	10/25/95	12/01/95	10/25/95	10/26/95	10/12/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
4,4'-DDD	ND (0.04)	ND (0.05) J,U	ND (0.04)	NT	ND (0.04)
4,4'-DDE	ND (0.04)	ND (0.05) J,U	ND (0.04)	NT	ND (0.04)
4,4'-DDT	ND (0.04)	ND (0.05) J,U	ND (0.04)	NT	ND (0.04)
Aldrin	ND (0.04)	ND (0.02) J,U	ND (0.04)	NT	ND (0.04)
Chlordane	ND (0.5)	ND (0.4) J,U	ND (0.5)	NT	ND (0.5)
Dieldrin	ND (0.04)	ND (0.05) J,U	ND (0.04)	NT	ND (0.04)
Endosulfan I	ND (0.04)	ND (0.05) J,U	ND (0.04)	NT	ND (0.04)
Endosulfan II	ND (0.04)	ND (0.05) J,U	ND (0.04)	NT	ND (0.04)
Endosulfan sulfate	ND (0.04)	ND (0.05) J,U	ND (0.04)	NT	ND (0.04)
Endrin	ND (0.04)	ND (0.05) J,U	ND (0.04)	NT	ND (0.04)
Endrin aldehyde	ND (0.04)	ND (0.05) J,U	ND (0.04)	NT	ND (0.04)
Heptachlor	ND (0.04)	ND (0.05) J,U	ND (0.04)	NT	ND (0.04)
Heptachlor epoxide	ND (0.04)	ND (0.05) J,U	ND (0.04)	NT	ND (0.04)
Methoxychlor	ND (0.1)	ND (0.08) J,U	ND (0.1)	NT	ND (0.1)
PCB-1016	ND (0.1)	ND (0.5) J,U	ND (0.1)	ND (0.1)	ND (0.1)
PCB-1221	ND (0.1)	ND (1) J,U	ND (0.1)	ND (0.1)	ND (0.1)
PCB-1232	ND (0.1)	ND (0.5) J,U	ND (0.1)	ND (0.1)	ND (0.1)
PCB-1242	ND (0.1)	ND (0.6) J,U	ND (0.1)	ND (0.1)	ND (0.1)
PCB-1248	ND (0.1)	ND (0.5) J,U	ND (0.1)	ND (0.1)	ND (0.1)
PCB-1254	ND (0.1)	ND (0.5) J,U	ND (0.1)	ND (0.1)	ND (0.1)
PCB-1260	ND (0.1)	ND (0.5) J,U	ND (0.1)	ND (0.1)	ND (0.1)
Toxaphene	ND (1)	ND (1) J,U	ND (1)	NT	ND (1)
alpha-BHC	ND (0.04)	ND (0.005) J,	ND (0.04)	NT	ND (0.04)
beta-BHC	ND (0.1)	ND (0.005) J,	ND (0.1)	NT	ND (0.1)
delta-BHC	ND (0.04)	ND (0.005) J,	ND (0.04)	NT	ND (0.04)
gamma-BHC (Lindane)	ND (0.04)	ND (0.02) J,U	ND (0.04)	NT	ND (0.04)

CAS: Columbia Analytical Services, Inc. Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

NT: Not Tested.

J: Estimated Value.

U: Sample was analyzed beyond recommended holding time.

ND: Not Detected. (The number in parenthesis is Method Reporting Limit (MRL)).

Table 7
 Ft. Richardson Groundwater Study (Fall 1995)
 PCB & Pesticides
 Method 8080
 October, 1995

FTR 0028106

LOCATION:	FR-2	FR-3
DATE OF SAMPLING:	10/03/95	10/04/95
TYPE OF SAMPLE:	Water	Water
FIELD SAMPLE #: 95FRGW	101WA	107WA
TESTING LABORATORY:	CAS	CAS
LABORATORY SAMPLE #:	A9500767-1	A9500773-7
DATE RECEIVED:	10/04/95	10/05/95
DATE TESTED:	10/12/95	10/12/95
CONCENTRATION UNITS:	ug/L	ug/L

4,4'-DDD	ND (0.04)	ND (0.04)
4,4'-DDE	ND (0.04)	ND (0.04)
4,4'-DDT	ND (0.04)	ND (0.04)
Aldrin	ND (0.04)	ND (0.04)
Chlordane	ND (0.5)	ND (0.5)
Dieldrin	ND (0.04)	ND (0.04)
Endosulfan I	ND (0.04)	ND (0.04)
Endosulfan II	ND (0.04)	ND (0.04)
Endosulfan sulfate	ND (0.04)	ND (0.04)
Endrin	ND (0.04)	ND (0.04)
Endrin aldehyde	ND (0.04)	ND (0.04)
Heptachlor	ND (0.04)	ND (0.04)
Heptachlor epoxide	ND (0.04)	ND (0.04)
Methoxychlor	ND (0.1)	ND (0.1)
PCB-1016	ND (0.1)	ND (0.1)
PCB-1221	ND (0.1)	ND (0.1)
PCB-1232	ND (0.1)	ND (0.1)
PCB-1242	ND (0.1)	ND (0.1)
PCB-1248	ND (0.1)	ND (0.1)
PCB-1254	ND (0.1)	ND (0.1)
PCB-1260	ND (0.1)	ND (0.1)
Toxaphene	ND (1)	ND (1)
alpha-BHC	ND (0.04)	ND (0.04)
beta-BHC	ND (0.1)	ND (0.1)
delta-BHC	ND (0.04)	ND (0.04)
gamma-BHC (Lindane)	ND (0.04)	ND (0.04)

CAS: Columbia Analytical Services, Inc. Anchorage, AK.

ND: Not Detected. (The number in parenthesis is Method Reporting Limit (MRL)).

Table 8
 Ft. Richardson Groundwater Study (Fall 1995)
 Semivolatile Organic Compounds
 Method 8270A
 October, 1995

LOCATION:	AP-3011	AP-3013	AP-3014	AP-3015
DATE OF SAMPLING:	10/16/95	10/18/95	10/11/95	10/11/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	112WA	115WA	104WA	105WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500820-1	A9500829-1	A9500802-1	A9500802-2
DATE RECEIVED:	10/17/95	10/19/95	10/12/95	10/12/95
DATE TESTED:	10/23/95	10/24/95	10/16/95	10/16/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,2,4-Trichlorobenzene	ND (10)	ND (10)	ND (10)	ND (10)
1,2-Dichlorobenzene	ND (10)	ND (10)	ND (10)	ND (10)
1,3-Dichlorobenzene	ND (10)	ND (10)	ND (10)	ND (10)
1,4-Dichlorobenzene	ND (10)	ND (10)	ND (10)	ND (10)
2,4,5-Trichlorophenol	ND (10)	ND (10)	ND (10)	ND (10)
2,4,6-Trichlorophenol	ND (10)	ND (10)	ND (10)	ND (10)
2,4-Dichlorophenol	ND (10)	ND (10)	ND (10)	ND (10)
2,4-Dimethylphenol	ND (10)	ND (10)	ND (10)	ND (10)
2,4-Dinitrophenol	ND (25)	ND (25)	ND (25)	ND (25)
2,4-Dinitrotoluene	ND (10)	ND (10)	ND (10)	ND (10)
2,6-Dinitrotoluene	ND (10)	ND (10)	ND (10)	ND (10)
2-Chloronaphthalene	ND (10)	ND (10)	ND (10)	ND (10)
2-Chlorophenol	ND (10)	ND (10)	ND (10)	ND (10)
2-Methyl-4,6-dinitrophenol	ND (25)	ND (25)	ND (25)	ND (25)
2-Methylnaphthalene	ND (10)	ND (10)	ND (10)	ND (10)
2-Methylphenol (o-cresol)	ND (10)	ND (10)	ND (10)	ND (10)
2-Nitroaniline	ND (25)	ND (25)	ND (25)	ND (25)
2-Nitrophenol	ND (10)	ND (10)	ND (10)	ND (10)
3,3'-Dichlorobenzidine	ND (25)	ND (25)	ND (25)	ND (25)
3-Methylphenol	ND (10)	ND (10)	ND (10)	ND (10)
3-Nitroaniline	ND (25)	ND (25)	ND (25)	ND (25)
3-Nitroaniline	NT	NT	NT	NT
4,4'-DDD	NT	NT	NT	NT
4,4'-DDE	NT	NT	NT	NT
4,4'-DDT	NT	NT	NT	NT
4-Bromophenyl phenyl ether	ND (10)	ND (10)	ND (10)	ND (10)
4-Chloro-3-methyl phenol	ND (10)	ND (10)	ND (10)	ND (10)
4-Chloroaniline	ND (10)	ND (10)	ND (10)	ND (10)
4-Chlorophenyl phenyl ether	ND (10)	ND (10)	ND (10)	ND (10)
4-Methylphenol (p-cresol)	ND (10)	ND (10)	ND (10)	ND (10)
4-Nitroaniline	ND (25)	ND (25)	ND (25)	ND (25)
4-Nitrophenol	ND (25)	ND (25)	ND (25)	ND (25)

Table 8
 Ft. Richardson Groundwater Study (Fall 1995)
 Semivolatile Organic Compounds
 Method 8270A
 October, 1995

LOCATION:	AP-3011	AP-3013	AP-3014	AP-3015
DATE OF SAMPLING:	10/16/95	10/18/95	10/11/95	10/11/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	112WA	115WA	104WA	105WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500820-1	A9500829-1	A9500802-1	A9500802-2
DATE RECEIVED:	10/17/95	10/19/95	10/12/95	10/12/95
DATE TESTED:	10/23/95	10/24/95	10/16/95	10/16/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (10)	ND (10)	ND (10)	ND (10)
Acenaphthylene	ND (10)	ND (10)	ND (10)	ND (10)
Aldrin	NT	NT	NT	NT
Aniline	ND (25)	ND (25)	ND (25)	ND (25)
Anthracene	ND (10)	ND (10)	ND (10)	ND (10)
Benzidine	NT	NT	NT	NT
Benzo(a)anthracene	ND (10)	ND (10)	ND (10)	ND (10)
Benzo(a)pyrene	ND (10)	ND (10)	ND (10)	ND (10)
Benzo(b)fluoranthene	ND (10)	ND (10)	ND (10)	ND (10)
Benzo(g,h,i)perylene	ND (10)	ND (10)	ND (10)	ND (10)
Benzo(k)fluoranthene	ND (10)	ND (10)	ND (10)	ND (10)
Benzoic acid	ND (25)	ND (25)	ND (25)	ND (25)
Benzyl alcohol	ND (10)	ND (10)	ND (10)	ND (10)
Benzyl butyl phthalate	ND (10)	ND (10)	ND (10)	ND (10)
Bis(2-chloroethoxy)methane	ND (10)	ND (10)	ND (10)	ND (10)
Bis(2-chloroethyl) ether	ND (10)	ND (10)	ND (10)	ND (10)
Bis(2-ethylhexyl) phthalate	ND (10)	ND (10)	21	ND (10)
Chrysene	ND (10)	ND (10)	ND (10)	ND (10)
Di-n-butyl phthalate	ND (10)	ND (10)	ND (10)	ND (10)
Di-n-octyl phthalate	ND (10)	ND (10)	ND (10)	ND (10)
Dibenzo(a,h)anthracene	ND (10)	ND (10)	ND (10)	ND (10)
Dibenzofuran	ND (10)	ND (10)	ND (10)	ND (10)
Dieldrin	NT	NT	NT	NT
Diethyl phthalate	ND (10)	ND (10)	ND (10)	ND (10)
Dimethyl phthalate	ND (10)	ND (10)	ND (10)	ND (10)
Endrin aldehyde	NT	NT	NT	NT
Fluoranthene	ND (10)	ND (10)	ND (10)	ND (10)
Fluorene	ND (10)	ND (10)	ND (10)	ND (10)
Heptachlor	NT	NT	NT	NT
Hexachlorobenzene	ND (10)	ND (10)	ND (10)	ND (10)
Hexachlorobutadiene	ND (10)	ND (10)	ND (10)	ND (10)
Hexachlorocyclopentadiene	ND (10)	ND (10)	ND (10)	ND (10)

Table 8
 Ft. Richardson Groundwater Study (Fall 1995)
 Semivolatile Organic Compounds
 Method 8270A
 October, 1995

LOCATION:	AP-3011	AP-3013	AP-3014	AP-3015
DATE OF SAMPLING:	10/16/95	10/18/95	10/11/95	10/11/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	112WA	115WA	104WA	105WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500820-1	A9500829-1	A9500802-1	A9500802-2
DATE RECEIVED:	10/17/95	10/19/95	10/12/95	10/12/95
DATE TESTED:	10/23/95	10/24/95	10/16/95	10/16/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Hexachloroethane	ND (10)	ND (10)	ND (10)	ND (10)
Indeno(1,2,3-cd)pyrene	ND (10)	ND (10)	ND (10)	ND (10)
Isophorone	ND (10)	ND (10)	ND (10)	ND (10)
N-Nitrosodi-n-propylamine	ND (10)	ND (10)	ND (10)	ND (10)
N-Nitrosodimethylamine	ND (25)	ND (25)	ND (25)	ND (25)
N-Nitrosodiphenylamine	ND (10)	ND (10)	ND (10)	ND (10)
Naphthalene	ND (10)	ND (10)	ND (10)	ND (10)
Nitrobenzene	ND (10)	ND (10)	ND (10)	ND (10)
Pentachlorophenol	ND (25)	ND (25)	ND (25)	ND (25)
Phenanthrene	ND (10)	ND (10)	ND (10)	ND (10)
Phenol	ND (10)	ND (10)	ND (10)	ND (10)
Pyrene	ND (10)	ND (10)	ND (10)	ND (10)
delta-BHC	NT	NT	NT	NT
gamma-BHC (Lindane)	NT	NT	NT	NT
TIC's:	7	0	0	0
Total TIC Concentration	103	0	0	0

CAS: Columbia Analytical Services, Inc. Kelso, WA.

TIC: Tentatively Identified Compounds

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 8
 Ft. Richardson Groundwater Study (Fall 1995)
 Semivolatile Organic Compounds
 Method 8270A
 October, 1995

			QA Dup	QC Dup
LOCATION:	AP-3219	AP-3222	AP-3222	AP-3222
DATE OF SAMPLING:	10/15/95	10/15/95	10/15/95	10/15/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	111WA	106WA	108WA	110WA
TESTING LABORATORY:	CAS	CAS	NETS	CAS
LABORATORY SAMPLE #:	A9500815-3	A9500815-1	254000	A9500815-2
DATE RECEIVED:	10/16/95	10/16/95	10/19/95	10/16/95
DATE TESTED:	10/23/95	10/23/95	10/26/95	10/23/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
1,2,4-Trichlorobenzene	ND (10)	ND (10)	ND (10.0)	ND (10)
1,2-Dichlorobenzene	ND (10)	ND (10)	ND (10.0)	ND (10)
1,3-Dichlorobenzene	ND (10)	ND (10)	ND (10.0)	ND (10)
1,4-Dichlorobenzene	ND (10)	ND (10)	ND (10.0)	ND (10)
2,4,5-Trichlorophenol	ND (10)	ND (10)	ND (50.0)	ND (10)
2,4,6-Trichlorophenol	ND (10)	ND (10)	ND (10.0)	ND (10)
2,4-Dichlorophenol	ND (10)	ND (10)	ND (10.0)	ND (10)
2,4-Dimethylphenol	ND (10)	ND (10)	ND (10.0)	ND (10)
2,4-Dinitrophenol	ND (25)	ND (25)	ND (50.0)	ND (25)
2,4-Dinitrotoluene	ND (10)	ND (10)	ND (10.0)	ND (10)
2,6-Dinitrotoluene	ND (10)	ND (10)	ND (10.0)	ND (10)
2-Chloronaphthalene	ND (10)	ND (10)	ND (10.0)	ND (10)
2-Chlorophenol	ND (10)	ND (10)	ND (10.0)	ND (10)
2-Methyl-4,6-dinitrophenol	ND (25)	ND (25)	ND (50.0)	ND (25)
2-Methylnaphthalene	ND (10)	ND (10)	ND (10.0)	ND (10)
2-Methylphenol (o-cresol)	ND (10)	ND (10)	ND (10.0)	ND (10)
2-Nitroaniline	ND (25)	ND (25)	ND (50.0)	ND (25)
2-Nitrophenol	ND (10)	ND (10)	ND (10.0)	ND (10)
3,3'-Dichlorobenzidine	ND (25)	ND (25)	ND (20.0)	ND (25)
3-Methylphenol	ND (10)	ND (10)	NT	ND (10)
3-Nitroaniline	ND (25)	ND (25)	ND (50.0)	ND (25)
3-Nitroaniline	NT	NT	ND (50.0)	NT
4,4'-DDD	NT	NT	ND (50.0)	NT
4,4'-DDE	NT	NT	ND (50.0)	NT
4,4'-DDT	NT	NT	ND (50.0)	NT
4-Bromophenyl phenyl ether	ND (10)	ND (10)	ND (10.0)	ND (10)
4-Chloro-3-methyl phenol	ND (10)	ND (10)	ND (10.0)	ND (10)
4-Chloroaniline	ND (10)	ND (10)	ND (10.0)	ND (10)
4-Chlorophenyl phenyl ether	ND (10)	ND (10)	ND (10.0)	ND (10)
4-Methylphenol (p-cresol)	ND (10)	ND (10)	ND (10.0)	ND (10)
4-Nitroaniline	ND (25)	ND (25)	ND (50.0)	ND (25)
4-Nitrophenol	ND (25)	ND (25)	ND (50.0)	ND (25)

Table 8

Ft. Richardson Groundwater Study (Fall 1995)
Semivolatile Organic Compounds
Method 8270A
October, 1995

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FTR 0028111

			QA Dup	QC Dup
LOCATION:	AP-3219	AP-3222	AP-3222	AP-3222
DATE OF SAMPLING:	10/15/95	10/15/95	10/15/95	10/15/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	111WA	106WA	108WA	110WA
TESTING LABORATORY:	CAS	CAS	NETS	CAS
LABORATORY SAMPLE #:	A9500815-3	A9500815-1	254000	A9500815-2
DATE RECEIVED:	10/16/95	10/16/95	10/19/95	10/16/95
DATE TESTED:	10/23/95	10/23/95	10/26/95	10/23/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Acenaphthene	ND (10)	ND (10)	ND (10.0)	ND (10)
Acenaphthylene	ND (10)	ND (10)	ND (10.0)	ND (10)
Aldrin	NT	NT	ND (50.0)	NT
Aniline	ND (25)	ND (25)	NT	ND (25)
Anthracene	ND (10)	ND (10)	ND (10.0)	ND (10)
Benzidine	NT	NT	ND (44.0)	NT
Benzo(a)anthracene	ND (10)	ND (10)	ND (10.0)	ND (10)
Benzo(a)pyrene	ND (10)	ND (10)	ND (10.0)	ND (10)
Benzo(b)fluoranthene	ND (10)	ND (10)	ND (10.0)	ND (10)
Benzo(g,h,i)perylene	ND (10)	ND (10)	ND (10.0)	ND (10)
Benzo(k)fluoranthene	ND (10)	ND (10)	ND (10.0)	ND (10)
Benzoic acid	ND (25)	ND (25)	NT	ND (25)
Benzyl alcohol	ND (10)	ND (10)	ND (10.0)	ND (10)
Benzyl butyl phthalate	ND (10)	ND (10)	ND (10.0)	ND (10)
Bis(2-chloroethoxy)methane	ND (10)	ND (10)	ND (10.0)	ND (10)
Bis(2-chloroethyl) ether	ND (10)	ND (10)	ND (10.0)	ND (10)
Bis(2-ethylhexyl) phthalate	ND (10)	ND (10)	ND (10.0)	ND (10)
Chrysene	ND (10)	ND (10)	ND (10.0)	ND (10)
Di-n-butyl phthalate	ND (10)	ND (10)	ND (10.0)	ND (10)
Di-n-octyl phthalate	ND (10)	ND (10)	ND (10.0)	ND (10)
Dibenzo(a,h)anthracene	ND (10)	ND (10)	ND (10.0)	ND (10)
Dibenzofuran	ND (10)	ND (10)	ND (10.0)	ND (10)
Dieldrin	NT	NT	ND (50.0)	NT
Diethyl phthalate	ND (10)	ND (10)	ND (10.0)	ND (10)
Dimethyl phthalate	ND (10)	ND (10)	ND (10.0)	ND (10)
Endrin aldehyde	NT	NT	ND (50.0)	NT
Fluoranthene	ND (10)	ND (10)	ND (10.0)	ND (10)
Fluorene	ND (10)	ND (10)	ND (10.0)	ND (10)
Heptachlor	NT	NT	ND (50.0)	NT
Hexachlorobenzene	ND (10)	ND (10)	ND (10.0)	ND (10)
Hexachlorobutadiene	ND (10)	ND (10)	ND (10.0)	ND (10)
Hexachlorocyclopentadiene	ND (10)	ND (10)	ND (10.0)	ND (10)

Table 8
 Ft. Richardson Groundwater Study (Fall 1995)
 Semivolatile Organic Compounds
 Method 8270A
 October, 1995

	AP-3219	AP-3222	QA Dup AP-3222	QC Dup AP-3222
LOCATION:	AP-3219	AP-3222	AP-3222	AP-3222
DATE OF SAMPLING:	10/15/95	10/15/95	10/15/95	10/15/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	111WA	106WA	108WA	110WA
TESTING LABORATORY:	CAS	CAS	NETS	CAS
LABORATORY SAMPLE #:	A9500815-3	A9500815-1	254000	A9500815-2
DATE RECEIVED:	10/16/95	10/16/95	10/19/95	10/16/95
DATE TESTED:	10/23/95	10/23/95	10/26/95	10/23/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
Hexachloroethane	ND (10)	ND (10)	ND (10.0)	ND (10)
Indeno(1,2,3-cd)pyrene	ND (10)	ND (10)	ND (10.0)	ND (10)
Isophorone	ND (10)	ND (10)	ND (10.0)	ND (10)
N-Nitrosodi-n-propylamine	ND (10)	ND (10)	ND (10.0)	ND (10)
N-Nitrosodimethylamine	ND (25)	ND (25)	NT	ND (25)
N-Nitrosodiphenylamine	ND (10)	ND (10)	ND (10.0)	ND (10)
Naphthalene	ND (10)	ND (10)	ND (10.0)	ND (10)
Nitrobenzene	ND (10)	ND (10)	ND (10.0)	ND (10)
Pentachlorophenol	ND (25)	ND (25)	ND (50.0)	ND (25)
Phenanthrene	ND (10)	ND (10)	ND (10.0)	ND (10)
Phenol	ND (10)	ND (10)	ND (10.0)	ND (10)
Pyrene	ND (10)	ND (10)	ND (10.0)	ND (10)
delta-BHC	NT	NT	ND (50.0)	NT
gamma-BHC (Lindane)	NT	NT	ND (50.0)	NT
TIC's:	2	2	2	2
Total TIC Concentration	20 BJ	26 BJ	12.0	8 BJ

CAS: Columbia Analytical Services, Inc. Kelso, WA.

NET: NET Inc., Santa Rosa, CA.

BJ: Analyted detected in Blank and Sample.

TIC: Tentatively Identified Compounds

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 8

Ft. Richardson Groundwater Study (Fall 1995)
Semivolatile Organic Compounds
Method 8270A
October, 1995

FTR 0028113

LOCATION:	FR-1	FR-2	FR-3
DATE OF SAMPLING:	10/11/95	10/11/95	10/16/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	102WA	101WA	107WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500802-4	A9500802-3	A9500820-2
DATE RECEIVED:	10/12/95	10/12/95	10/17/95
DATE TESTED:	10/16/95	10/16/95	10/23/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
1,2,4-Trichlorobenzene	ND (10)	ND (10)	ND (10)
1,2-Dichlorobenzene	ND (10)	ND (10)	ND (10)
1,3-Dichlorobenzene	ND (10)	ND (10)	ND (10)
1,4-Dichlorobenzene	ND (10)	ND (10)	ND (10)
2,4,5-Trichlorophenol	ND (10)	ND (10)	ND (10)
2,4,6-Trichlorophenol	ND (10)	ND (10)	ND (10)
2,4-Dichlorophenol	ND (10)	ND (10)	ND (10)
2,4-Dimethylphenol	ND (10)	ND (10)	ND (10)
2,4-Dinitrophenol	ND (25)	ND (25)	ND (25)
2,4-Dinitrotoluene	ND (10)	ND (10)	ND (10)
2,6-Dinitrotoluene	ND (10)	ND (10)	ND (10)
2-Chloronaphthalene	ND (10)	ND (10)	ND (10)
2-Chlorophenol	ND (10)	ND (10)	ND (10)
2-Methyl-4,6-dinitrophenol	ND (25)	ND (25)	ND (25)
2-Methylnaphthalene	ND (10)	ND (10)	ND (10)
2-Methylphenol (o-cresol)	ND (10)	ND (10)	ND (10)
2-Nitroaniline	ND (25)	ND (25)	ND (25)
2-Nitrophenol	ND (10)	ND (10)	ND (10)
3,3'-Dichlorobenzidine	ND (25)	ND (25)	ND (25)
3-Methylphenol	ND (10)	ND (10)	ND (10)
3-Nitroaniline	ND (25)	ND (25)	ND (25)
3-Nitroaniline	NT	NT	NT
4,4'-DDD	NT	NT	NT
4,4'-DDE	NT	NT	NT
4,4'-DDT	NT	NT	NT
4-Bromophenyl phenyl ether	ND (10)	ND (10)	ND (10)
4-Chloro-3-methyl phenol	ND (10)	ND (10)	ND (10)
4-Chloroaniline	ND (10)	ND (10)	ND (10)
4-Chlorophenyl phenyl ether	ND (10)	ND (10)	ND (10)
4-Methylphenol (p-cresol)	ND (10)	ND (10)	ND (10)
4-Nitroaniline	ND (25)	ND (25)	ND (25)
4-Nitrophenol	ND (25)	ND (25)	ND (25)

Table 8
 Ft. Richardson Groundwater Study (Fall 1995)
 Semivolatile Organic Compounds
 Method 8270A
 October, 1995

LOCATION:	FR-1	FR-2	FR-3
DATE OF SAMPLING:	10/11/95	10/11/95	10/16/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	102WA	101WA	107WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500802-4	A9500802-3	A9500820-2
DATE RECEIVED:	10/12/95	10/12/95	10/17/95
DATE TESTED:	10/16/95	10/16/95	10/23/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Acenaphthene	ND (10)	ND (10)	ND (10)
Acenaphthylene	ND (10)	ND (10)	ND (10)
Aldrin	NT	NT	NT
Aniline	ND (25)	ND (25)	ND (25)
Anthracene	ND (10)	ND (10)	ND (10)
Benzidine	NT	NT	NT
Benzo(a)anthracene	ND (10)	ND (10)	ND (10)
Benzo(a)pyrene	ND (10)	ND (10)	ND (10)
Benzo(b)fluoranthene	ND (10)	ND (10)	ND (10)
Benzo(g,h,i)perylene	ND (10)	ND (10)	ND (10)
Benzo(k)fluoranthene	ND (10)	ND (10)	ND (10)
Benzoic acid	ND (25)	ND (25)	ND (25)
Benzyl alcohol	ND (10)	ND (10)	ND (10)
Benzyl butyl phthalate	ND (10)	ND (10)	ND (10)
Bis(2-chloroethoxy)methane	ND (10)	ND (10)	ND (10)
Bis(2-chloroethyl) ether	ND (10)	ND (10)	ND (10)
Bis(2-ethylhexyl) phthalate	ND (10)	ND (10)	ND (10)
Chrysene	ND (10)	ND (10)	ND (10)
Di-n-butyl phthalate	ND (10)	ND (10)	ND (10)
Di-n-octyl phthalate	ND (10)	ND (10)	ND (10)
Dibenzo(a,h)anthracene	ND (10)	ND (10)	ND (10)
Dibenzofuran	ND (10)	ND (10)	ND (10)
Dieldrin	NT	NT	NT
Diethyl phthalate	ND (10)	ND (10)	ND (10)
Dimethyl phthalate	ND (10)	ND (10)	ND (10)
Endrin aldehyde	NT	NT	NT
Fluoranthene	ND (10)	ND (10)	ND (10)
Fluorene	ND (10)	ND (10)	ND (10)
Heptachlor	NT	NT	NT
Hexachlorobenzene	ND (10)	ND (10)	ND (10)
Hexachlorobutadiene	ND (10)	ND (10)	ND (10)
Hexachlorocyclopentadiene	ND (10)	ND (10)	ND (10)

Table 8
 Ft. Richardson Groundwater Study (Fall 1995)
 Semivolatile Organic Compounds
 Method 8270A
 October, 1995

LOCATION:	FR-1	FR-2	FR-3
DATE OF SAMPLING:	10/11/95	10/11/95	10/16/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	102WA	101WA	107WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500802-4	A9500802-3	A9500820-2
DATE RECEIVED:	10/12/95	10/12/95	10/17/95
DATE TESTED:	10/16/95	10/16/95	10/23/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
Hexachloroethane	ND (10)	ND (10)	ND (10)
Indeno(1,2,3-cd)pyrene	ND (10)	ND (10)	ND (10)
Isophorone	ND (10)	ND (10)	ND (10)
N-Nitrosodi-n-propylamine	ND (10)	ND (10)	ND (10)
N-Nitrosodimethylamine	ND (25)	ND (25)	ND (25)
N-Nitrosodiphenylamine	ND (10)	ND (10)	ND (10)
Naphthalene	ND (10)	ND (10)	ND (10)
Nitrobenzene	ND (10)	ND (10)	ND (10)
Pentachlorophenol	ND (25)	ND (25)	ND (25)
Phenanthrene	ND (10)	ND (10)	ND (10)
Phenol	ND (10)	ND (10)	ND (10)
Pyrene	ND (10)	ND (10)	ND (10)
delta-BHC	NT	NT	NT
gamma-BHC (Lindane)	NT	NT	NT
TIC's:	0	0	2
Total TIC Concentration	0	0	25

CAS: Columbia Analytical Services, Inc. Kelso, WA.

NET: NET Inc., Santa Rosa, CA.

TIC: Tentatively Identified Compounds

NT: Not Tested.

ND: Not Detected. (The number in parentheses is the Method Reporting Limit (MRL)).

Table 9
 Ft. Richardson Groundwater Study (Fall 1995)
 Landfill Parameters
 October, 1995

LOCATION:	AP-3010	AP-3011	AP-3013	AP-3014	AP-3015
DATE OF SAMPLING:	10/04/95	10/16/95	10/18/95	10/03/95	10/03/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	109WA	112WA	115WA	104WA	105WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500773-8	K9506558-00	A9500829-1	A9500767-4	A9500767-5
DATE RECEIVED:	10/05/95	10/17/95	10/19/95	10/04/95	10/04/95
DATE TESTED:	10/05-20/95	10/17-31/95	10/19-11/1/9	10/05-20/95	10/05-20/95
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Alkalinity , Total	276	391	158	57	157
Bicarbonate Alkalinity as CaCO3	NT	NT	NT	NT	NT
Carbonate Alkalinity as CaCO3	NT	NT	NT	NT	NT
Hydroxide Alkalinity as CaCO3	NT	NT	NT	NT	NT
Biochemical Oxygen Demand	ND (2.0)	5	ND (2.0)	ND (2.0)	ND (2.0)
Nitrogen, Ammonia (as N)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chemical Oxygen Demand	9	9	ND (5)	15	ND (5)
Hardness, Total as CaCO3	250	450	170	60	190
Nitrogen, Nitrate-Nitrite	0.3	ND (0.2)	1.0	ND (0.2)	1.1
Nitrogen , Kjeldahl, Total	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	0.2
Phosphorus, Total (as P)	0.01	0.10	ND (0.01)	ND (0.01)	0.25
Total Dissolved Solids	299	562	239	88	248
Surfactants	ND (1)	ND (0.5)	ND (0.5)	ND (1)	ND (1)
Turbidity	6.8	11.5	ND (0.5)	1.7	76
Total Organic Carbon	0.8	2.3	0.4 J	ND (0.5)	ND (0.5)
TRPH	ND (0.5)	0.6	ND (0.5)	ND (0.5)	ND (0.5)
Chloride	1.8	61	7.1	1.1	9.5
Sulfate	14	31	18	7.4	17
Cyanide, Total	NT	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
Langelier Index	NT	-0.1	-0.7	-2.4	-0.5
Fecal Coliform	NT	0	NT	0	0

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

J: Reported value or MRL is considered an estimate.

Turbidity: Units are in NTU (Nephelometric Turbidity Units)

Fecal Coliform: Units are colonies/100ml; analyses by CT+E, Anchorage.

Langeliers Index: Units are pH.

TRPH: Total Recoverable Petroleum Hydrocarbons

NT: Not Tested.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 9
Ft. Richardson Groundwater Study (Fall 1995)
Landfill Parameters
October, 1995

Page 2 of 3

	AP-3219	AP-3221	AP-3222	QA Dup AP-3222	QC Dup AP-3222
LOCATION:	AP-3219	AP-3221	AP-3222	AP-3222	AP-3222
DATE OF SAMPLING:	10/15/95	10/03/95	10/15/95	10/15/95	10/15/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW-	111WA	103WA	106WA	108WA	110WA
TESTING LABORATORY:	CAS	CAS	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500815-3	A9500767-3	A9500815-1	254000	A9500815-2
DATE RECEIVED:	10/16/95	10/04/95	10/16/95	10/19/95	10/16/95
DATE TESTED:	10/17-11/1/9	10/05-20/95	10/17-11/1/9	10/23-27/95	10/17-11/1/9
CONCENTRATION UNITS:	mg/L	mg/L	mg/L	mg/L	mg/L
Alkalinity, Total	30	389	160	160.0	160
Bicarbonate Alkalinity as CaCO ₃	NT	NT	NT	160.0	NT
Carbonate Alkalinity as CaCO ₃	NT	NT	NT	ND (10.0)	NT
Hydroxide Alkalinity as CaCO ₃	NT	NT	NT	ND (10.0)	NT
Biochemical Oxygen Demand	ND (2.0)	ND (2.0)	ND (2.0)	ND (5.0) J	ND (2.0)
Nitrogen, Ammonia (as N)	ND (0.1)	ND (0.1)	ND (0.1)	0.09	ND (0.1)
Chemical Oxygen Demand	ND (5)	ND (5)	12	34.0	ND (5)
Hardness, Total as CaCO ₃	30	380	170	160.0	170
Nitrogen, Nitrate-Nitrite	0.5	0.5	0.5	0.66	0.7
Nitrogen, Kjeldahl, Total	0.2	ND (0.2)	0.2	0.13	0.1 J
Phosphorus, Total (as P)	0.11	0.21	ND (0.01)	0.025	ND (0.01)
Total Dissolved Solids	40	433	205	220.0 J	228
Surfactants	ND (0.5)	ND (1)	ND (0.5)	ND (0.05)	ND (0.5)
Turbidity	60	160	ND (0.5)	0.1	ND (0.5)
Total Organic Carbon	1.3	ND (0.5)	0.3 J	ND (1.0)	0.2 J
TRPH	0.25 J	ND (0.5)	0.27 J	ND (1.0)	1.05
Chloride	1.0	3.9	8.0	7.0	8.0
Sulfate	3.1	16	18	18.0	18
Cyanide, Total	ND (0.01)	NT	ND (0.01)	ND (0.02)	ND (0.01)
Langelier Index	-2.8	NT	-0.6	NT	-0.5
Fecal Coliform	0	NT	0	NT	0

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

J: Reported value or MRL is considered an estimate.

Turbidity: Units are in NTU (Nephelometric Turbidity Units)

Fecal Coliform: Units are colonies/100ml; analyses by CT+E, Anchorage.

Langeliers Index: Units are pH.

TRPH: Total Recoverable Petroleum Hydrocarbons

NT: Not Tested.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 10
 Ft. Richardson Groundwater Study (Spring 1995)
 Method 8140
 Organophosphorous Pesticides
 October, 1995

		QA Dup	QC Dup		
LOCATION:	AP-3222	AP-3222	AP-3222	FR-1	FR-2
DATE OF SAMPLING:	10/15/95	10/15/95	10/15/95	10/11/95	10/11/95
TYPE OF SAMPLE:	Water	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	106WA	108WA	110WA	102WA	101WA
TESTING LABORATORY:	CAS	NET	CAS	CAS	CAS
LABORATORY SAMPLE #:	K9506552-001	254000	K9506552-002	K9506446-004	K9506446-003
DATE RECEIVED:	10/18/95	10/19/95	10/18/95	10/13/95	10/13/95
DATE TESTED:	11/01/95	11/21/95	11/01/95	11/01/95	11/01/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L
Azinphos methyl	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Bolstar (Sulprofos)	ND (1.0)	NT	ND (1.0)	ND (1.0)	ND (1.0)
Chlorpyrifos	ND (1.0)	ND (0.4)	ND (1.0)	ND (1.0)	ND (1.0)
Coumaphos	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Demeton, -O and -S	ND (1.0)	NT	ND (1.0)	ND (1.0)	ND (1.0)
Diazinon	ND (1.0)	ND (0.4)	ND (1.0)	ND (1.0)	ND (1.0)
Dichlorovos	0.2 J	ND (0.4)	ND (1.0)	ND (1.0)	ND (1.0)
Disulfoton	ND (1.0)	ND (0.4)	ND (1.0)	ND (1.0)	ND (1.0)
Ethoprop	0.09 J	ND (0.8)	0.09 J	ND (1.0)	ND (1.0)
Fensulfothion	ND (1.0)	ND (0.5)	ND (1.0)	ND (1.0)	ND (1.0)
Fenthion	ND (1.0)	NT	ND (1.0)	ND (1.0)	ND (1.0)
Malathion	ND (1.0)	NT	ND (1.0)	ND (1.0)	ND (1.0)
Merphos	ND (1.0)	ND (0.5)	ND (1.0)	ND (1.0)	ND (1.0)
Mevinphos	ND (1.0)	ND (0.4)	ND (1.0)	ND (1.0)	ND (1.0)
Naled	ND (1.0)	ND (2)	ND (1.0)	ND (1.0)	ND (1.0)
Parathion methyl	ND (1.0)	ND (0.4)	ND (1.0)	ND (1.0)	ND (1.0)
Phorate	ND (1.0)	ND (0.4)	ND (1.0)	ND (1.0)	ND (1.0)
Ronnel	ND (1.0)	ND (0.4)	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachlorvinphos (Stirophos)	ND (1.0)	ND (0.8)	ND (1.0)	ND (1.0)	ND (1.0)
Tokuthion (Prothiofos)	ND (1.0)	ND (0.4)	ND (1.0)	ND (1.0)	ND (1.0)
Trichloronate	ND (1.0)	ND (0.4)	ND (1.0)	ND (1.0)	ND (1.0)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

J: Reported value or MRL is considered an estimate.

NT: Not Tested.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 10
Ft. Richardson Groundwater Study (Spring 1995)
Method 8140
Organophosphorous Pesticides
October, 1995

LOCATION: FR-3
DATE OF SAMPLING: 10/16/95
TYPE OF SAMPLE: Water
FIELD SAMPLE #: 95FRGW 107WA
TESTING LABORATORY: CAS
LABORATORY SAMPLE #: K9506558-002
DATE RECEIVED: 10/18/95
DATE TESTED: 10/28/95
CONCENTRATION UNITS: ug/L

Azinphos methyl	ND (1.0)
Boistar (Sulprofos)	ND (1.0)
Chlorpyrifos	ND (1.0)
Coumaphos	ND (1.0)
Demeton, -O and -S	ND (1.0)
Diazinon	ND (1.0)
Dichlorovos	ND (1.0)
Disulfoton	ND (1.0)
Ethoprop	ND (1.0)
Fensulfothion	ND (1.0)
Fenthion	ND (1.0)
Malathion	ND (1.0)
Merphos	ND (1.0)
Mevinphos	ND (1.0)
Naled	ND (1.0)
Parathion methyl	ND (1.0)
Phorate	ND (1.0)
Ronnel	ND (1.0)
Tetrachlorvinphos (Stirophos)	ND (1.0)
Tokuthion (Prothiofos)	ND (1.0)
Trichloronate	ND (1.0)

CAS: Columbia Analytical Services, Inc., Anchorage, AK

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 11
 Ft. Richardson Groundwater Study (Fall 1995)
 Method 8150A
 Chlorinated Herbicides
 October, 1995

Page 1 of 3

LOCATION:	AP-3011	AP-3013	AP-3014	AP-3015
DATE OF SAMPLING:	10/16/95	10/18/95	10/11/95	10/11/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	112WA	115WA	104WA	105WA
TESTING LABORATORY:	CAS	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500820-1	A9500829-1	A9500802-1	A9500802-2
DATE RECEIVED:	10/17/95	10/19/95	10/12/95	10/12/95
DATE TESTED:	10/24/95	10/30/95	10/24/95	10/24/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
2,4,5-T	ND (0.2)	ND (0.2) CK,BS,CI	ND (0.2)	ND (0.2)
2,4,5-TP (Silvex)	ND (0.2)	ND (0.2) CK,BS,CI	ND (0.2)	ND (0.2)
2,4-D	ND (1)	ND (1) CK,BS,CI	ND (1)	ND (1)
2,4-DB	ND (2)	ND (0.2) CK,BS,CI	ND (2)	ND (2)
Dalapon	ND (5)	ND (5) CK,BS,CI	ND (5)	ND (5)
Dicamba	ND (0.5)	ND (0.5) CK,BS,CI	ND (0.5)	ND (0.5)
Dichlorprop	ND (0.6)	ND (0.6) CK,BS,CI	ND (0.6)	ND (0.6)
Dinoseb	ND (2)	ND (2) CK,BS,CI	ND (2)	ND (2)
MCPA	ND (200)	ND (200)CK,BS,CI	ND (200)	ND (200)
MCPP	ND (200)	ND (200)CK,BS,CI	ND (200)	ND (200)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

CI: Surrogate recoveries outside of CAS acceptance limits. Insufficient sample to re-extract & rean

BS: Insufficient sample available to follow standard QC procedures.

CK: Initial analysis within holding time but failed QA/QC criteria. Data should be viewed with cauti

ET: Sample was extracted past the end of recommended maximum holding time.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 11
 Ft. Richardson Groundwater Study (Fall 1995)
 Method 8150A
 Chlorinated Herbicides
 October, 1995

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			QA Dup	QC Dup
LOCATION:	AP-3219	AP-3222	AP-3222	AP-3222
DATE OF SAMPLING:	10/15/95	10/15/95	10/15/95	10/15/95
TYPE OF SAMPLE:	Water	Water	Water	Water
FIELD SAMPLE #: 95FRGW	111WA	106WA	108WA	110WA
TESTING LABORATORY:	CAS	CAS	NET	CAS
LABORATORY SAMPLE #:	A9500815-3	A9500815-1	254000	A9500815-2
DATE RECEIVED:	10/16/95	10/16/95	10/19/95	10/16/95
DATE TESTED:	10/30/95	10/30/95	11/29/95	10/30/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L	ug/L
2,4,5-T	ND (0.2) CK,ET	ND (0.2) CK,ET	ND (0.1)	ND (0.2) CK,ET
2,4,5-TP (Silvex)	ND (0.2) CK,ET	ND (0.2) CK,ET	ND (0.1)	ND (0.2) CK,ET
2,4-D	ND (1) CK,ET	ND (1) CK,ET	ND (1.0)	ND (1) CK,ET
2,4-DB	ND (2) CK,ET	ND (2) CK,ET	ND (1.0)	ND (2) CK,ET
Dalapon	ND (5) CK,ET	ND (5) CK,ET	ND (2.0)	ND (5) CK,ET
Dicamba	ND (0.5) CK,ET	ND (0.5) CK,ET	ND (0.1)	ND (0.5) CK,ET
Dichlorprop	ND (0.6) CK,ET	ND (0.6) CK,ET	ND (1.0)	ND (0.6) CK,ET
Dinoseb	ND (2) CK,ET	ND (2) CK,ET	ND (0.1)	ND (2) CK,ET
MCPA	ND (200) CK,ET	ND (200) CK,ET	ND (100.0)	ND (200) CK,ET
MCPP	ND (200) CK,ET	ND (200) CK,ET	ND (100.0)	ND (200) CK,ET

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

NET: NET Inc., Santa Rosa CA.

CK: Initial analysis within holding time but failed QA/QC criteria. Data should be viewed with caution.

ET: Sample was extracted past the end of recommended maximum holding time.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Table 11
 Ft. Richardson Groundwater Study (Fall 1995)
 Method 8150A
 Chlorinated Herbicides
 October, 1995

FTR 0028122

LOCATION:	FR-1	FR-2	FR-3
DATE OF SAMPLING:	10/11/95	10/11/95	10/16/95
TYPE OF SAMPLE:	Water	Water	Water
FIELD SAMPLE #: 95FRGW	102WA	101WA	107WA
TESTING LABORATORY:	CAS	CAS	CAS
LABORATORY SAMPLE #:	A9500802-4	A9500802-3	A9500820-2
DATE RECEIVED:	10/12/95	10/12/95	10/17/95
DATE TESTED:	10/24/95	10/24/95	10/24/95
CONCENTRATION UNITS:	ug/L	ug/L	ug/L
2,4,5-T	ND (0.2)	ND (0.2)	ND (0.2)
2,4,5-TP (Silvex)	ND (0.2)	ND (0.2)	ND (0.2)
2,4-D	ND (1)	ND (1)	ND (1)
2,4-DB	ND (2)	ND (2)	ND (2)
Dalapon	ND (5)	ND (5)	ND (5)
Dicamba	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorprop	ND (0.6)	ND (0.6)	ND (0.6)
Dinoseb	ND (2)	ND (2)	ND (2)
MCPA	ND (200)	ND (200)	ND (200)
MCPP	ND (200)	ND (200)	ND (200)

CAS: Columbia Analytical Services, Inc., Anchorage, AK.

ND: Not Detected. (The number in parentheses is Method Reporting Limit (MRL)).

Appendix D
Quality Assurance Report



DEPARTMENT OF THE ARMY
 NORTH PACIFIC DIVISION LABORATORY
 CORPS OF ENGINEERS
 1491 N.W. GRAHAM ROAD
 TROUTDALE, OREGON 97060-9508

REPLY TO
 ATTENTION OF:

CENPD-ET-EN-L (1110-1-8100c)

22 Mar 96

MEMORANDUM FOR: Commander, Alaska District ATTN: CENPA-EN-G (Thomas)

SUBJECT: W.O. 95-0450, Results of Chemical Analysis

Project: GROUNDWATER STUDY - FALL 95, FT. RICHARDSON
 Intended Use: Site Evaluation
 Submitted by: Alaska District
 Date Sampled: 3 - 27 Oct 95 Date Received: 4 - 31 Oct 95
 Reference: a) DD Form 448, MIPR No. E87-95-0139 Amendment 3, dated 14 Feb 95
 b) Report numbers A9500767, A9500773, A9500777, A9500789, A9500798,
A9500802, A9500804, A9500815, A9500820, A9500827, A9500829, A9500832,
A9500850, A9500853, A9500857, A9500865, and A9500873 (with diskettes) and
various amendments from Columbia Analytical Services (CAS), Inc.
 c) Report numbers 95.04071, 95.04115, 95.04147, 95.04206, and 95.04212 (with
diskettes) from National Environmental Testing (NET), Inc.

1. Enclosed are the original Chemical Quality Assurance Report, original report numbers 95.04071, 95.04115, 95.04147, 95.04206, and 95.04212 (with addenda) from NET, Inc., copies of CAS amendments, CENPD-ET-EN-L facsimiles and HTRW cooler discrepancy forms.
2. If you have any questions or comments concerning the Chemical Quality Assurance Report, please contact the author, Albert Hansen Jr., at (503) 669-0246 or Pamela Hertzberg at (503) 666-8143.
3. This completes all work requested for this project.

TIMOTHY J. SEEMAN
 Director

Enclosures

Copy Furnished: CEMRO-HX-C CEMP-RT

MFR: Sample cooler delinquencies were noted in the reports. Selected data of volatiles, GRO, DRO and metals should be considered due to laboratory contamination. Because of an incorrect analysis date, the analytical holding time for the TDS samples of report A9500829 could not be determined. Based on holding time expiration or out of control internal QC data, a minority of the

CENPD-ET-EN-L (1110-1-8100c)

SUBJECT: W.O. 95-0450, Results of Chemical Analysis

VOC, BNA, GRO, DRO, pesticides and inorganics data should be considered as estimates. Based on a majority of failed internal QC data, low concentrations of chlorinated herbicides were not detectable in any of samples in reports A9500802, A9500815, A9500820, and A9500829 and the data sets should be viewed with caution. Based on an extraction error, the DRO datum for sample 95FRGW-154WA should not be considered usable. A few single analyte data comparisons for VOC, PAH, total, and dissolved metals do not agree with each other. Complete copy in office file.

CENPD-ET-EN-L (95-0450)

22 Mar 96

CHEMICAL QUALITY ASSURANCE REPORT
GROUNDWATER STUDY - FALL 95, FT. RICHARDSON

1. **SUMMARY:**

a. Sample cooler temperature delinquencies, chain of custody discrepancies, sample containers mislabeled, a broken sample, and two semi-volatile samples improperly transferred to new containers were the type of problems noted among the primary laboratories reports. The presence of targeted volatiles and gasoline range organics (GRO) in the trip and rinsate blank samples are due, in part, to laboratory contamination. In the majority of instances, the presence of analytes in the trip and/or rinsate blank samples is not indicative of cross-contamination during sample shipment with three exceptions. Selected data of volatiles, GRO, diesel range organics (DRO) and metals should be considered due to laboratory contamination. Based on holding time expiration, the VOC, GRO, pesticides, and turbidity for two, one, two and three samples, respectively, should be considered as estimates. Because of an incorrect analysis date, the analytical holding time for the TDS samples of report A9500829 could not be determined. Based on surrogate recovery failures, the VOC data for three samples and the DRO data for seven should be considered as estimates. Based on spike analyte failures, base-neutral analytes may not have been detected at low concentrations in the semi-volatiles (BNA) samples of reports A9500815 and A9500820. Based on a majority of failed internal QC data, low concentrations of chlorinated herbicides were not detectable in any of samples in reports A9500802, A9500815, A9500820, and A9500829 and the data sets should be viewed with caution. Due to an failed instrument QC, the DRO result for sample 95FRGW-125WA should be as an estimate. Based on an extraction error, the DRO datum for sample 95FRGW-154WA should not be considered usable. Based on out of control matrix spike data, the TRPH results for samples report A9500815 should be considered low estimates.

b. The primary and quality assurance (QA) data comparisons are presented in Table II through X. All data agree with each other with the following exceptions/notations. The reporting limits for antimony and thallium differ between the laboratory's due to the different analytical methods used. The different test codes referenced by each of the laboratories for biological oxygen demand (BOD) and methylene blue active substances (MBAS) are, in fact, equivalent. A few single analyte data comparisons for VOC, polynuclear aromatic hydrocarbons (PAH), total metals, dissolved metals, and chemical oxygen demand (COD) do not agree with each other. See section 8 of this report and the respective table summaries for details.

2. **BACKGROUND:** The project samples were collected from October 3 through 27, 1995 and received by the analytical laboratories from October 4 through 31, 1995.

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Chemical Quality Assurance Report

3. OBJECTIVES:

a. Ninety-two water, including eight blind duplicate samples, were collected to determine the extent of the chemical contamination on the site. Three rinsate blank and thirteen trip blank samples were collected to assess incidental field cross-contamination and sample shipment contamination.

b. Eight QA water, three rinsate blank and four trip blank samples were submitted to evaluate the primary laboratories' data.

4. PROJECT ORGANIZATION:

a. The project samples were collected by U.S. Army Corps of Engineers (USACE) North Pacific Division/Alaska District staff (CENPA-EN-G-MI).

b. The primary samples were analyzed by Columbia Analytical Services (CAS), Inc., Anchorage, Alaska. The analysis of VOC, PAH, organophosphorus pesticides and a few inorganics and CAS, Inc., Kelso, Washington. The BOD analysis was subcontracted to National Testing Laboratories (NTL), Inc. The fecal coliform analysis was subcontracted to Commercial Testing & Engineering (CT&E) Environmental Services, Anchorage, Alaska.

c. The QA samples were analyzed by National Environmental Testing (NET), Inc., Santa Rosa, California. The PAH analysis was subcontracted to BC Laboratories, Bakersfield, California. The BOD and MBAS analyses were subcontracted to Brelje and Race (B&R) Laboratories, Santa Rosa, California.

5. ANALYTICAL REFERENCES:

<u>Number</u>	<u>Title</u>	<u>Date</u>
SW-846, Third Edition	Test Methods for Evaluating Solid Waste - Final Update II	1/95
GRO and DRO	State of Alaska Interim TPH Methods	2/92
EPA 600/4-79-020	Methods for the Chemical Analysis of Water and Wastes	3/83
2330B, 2340B, 5210B 5540C	Standard Methods of the Examination of Water and Wastewater, 19th Edition	1995

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- **A9500802:** A sample cooler temperature of 1.2 °C was recorded on the CAS-Alaska SCR form. Four water samples for herbicide, pesticide, semi-volatile, cyanide and langelier index analysis were in this cooler. All CAS-Kelso COC/SCR documents met criteria.
- **A9500804:** A sample cooler temperature of 1.2 °C was recorded on the CAS-Alaska SCR form. The temperature blank shipped with the samples was reported as 3.4 °C and within EPA requirements. Four water samples for PAH, DRO, and metals analysis were in this cooler. CAS-Alaska noted that dissolved metals sample container for 95FRGW-138WA was one-fourth full. All CAS-Kelso COC/SCR documents met criteria.
- **A9500815:** Two of seven sample cooler bottle blank temperatures were above 6.0 °C but the corresponding cooler temperatures were within EPA requirements as recorded on CAS-Alaska COC record "A". The VOC and GRO sample containers for -144WA and -146WA were not transcribed on the COC record. The above mentioned samples were added to the COC record by the laboratory per verbal confirmation with Alaska District (see HTRW discrepancy form, dated 17 Oct 95). The COC record submitted to NTL by CAS-Alaska indicated that besides BOD, a group of inorganic analyses were requested. NTL contacted CAS-Alaska and clarified the COC request as BOD only. No cooler temperature was noted on the NTL SCR form. All CAS-Kelso COC/SCR documents met criteria.
- **A9500820:** All CAS-Alaska, CAS-Kelso and NTL COC/SCR documents met criteria.
- **A9500827:** A sample cooler temperature of 8 °C was recorded on the CAS-Kelso SCR form. Four water samples for PAH analysis were in this cooler. All CAS-Alaska COC/SCR documents met criteria.
- **A9500829:** Two of four sample cooler bottle blank temperatures were above 6.0 °C but the corresponding cooler temperatures were within EPA requirements as recorded on CAS-Alaska COC record "A". Sample -115WA for TOC was received broken at CAS-Kelso. It was noted that the laboratory did submit TOC results for that sample. No cooler temperature was noted on the NTL SCR form.
- **A9500832:** All CAS-Alaska, CAS-Kelso COC/SCR documents met criteria.
- **A9500850:** Sample -164WA for PAH and -162WA for DRO were received by CAS-Alaska with lids broken. The laboratory transferred each of the samples to another bottle. One of two sample cooler temperatures recorded on the CAS-Kelso SCR form was 1 °C. The associated

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temperature blank was -5 °C. The laboratory reported that the samples arrived in good condition and indicated no broken bottles. The laboratory did not indicate which specific samples were associated with the out of control cooler temperature. Fifteen VOC and nine PAH water samples analysis were in this cooler.

- **A9500853:** All CAS-Alaska, CAS-Kelso COC/SCR documents met criteria.
- **A9500857:** All CAS-Alaska, CAS-Kelso COC/SCR documents met criteria.
- **A9500865:** All CAS-Alaska, CAS-Kelso COC/SCR documents met criteria.
- **A9500873:** All CAS-Alaska, CAS-Kelso COC/SCR documents met criteria.

b. Trip Blank Results: The primary trip blank data are presented in Table I-a through I-g. All trip blank samples were free of targeted analytes with the following exceptions.

1. Volatile Organic Compounds: The presence of acetone, methylene chloride and/or carbon disulfide in the primary trip blanks are attributable to laboratory contamination where qualified by the laboratory with a "B" flag. Carbon disulfide and bromochloromethane were detected at similar concentrations in some associated samples but absent in others. Their presence in the trip blanks is not indicative of cross-contamination during sample shipment but may be attributable to unidentified laboratory contamination. Toluene was detected in selected samples associated with trip blanks -203WA, -204WA, -210WA, and -211WA. The presence of toluene below the reporting limit should not be considered due to cross-contamination during shipment. The following analytes, in their respective trip blanks, were detected at estimated concentrations in the trip blank but not in the associated samples: Toluene in samples -202WA, -205WA, -206WA, -213WA, and -214WA); 1,1,2-trichloroethane and 1,3-dichloropropane in samples -205WA and -206WA; chloroform in samples -213WA, -214WA, and -223WA; 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, n-butylbenzene and hexachlorobutadiene in trip blank sample -215WA. The VOC data quality was unaffected by the presence of these analytes in the trip blank samples. Up to 1.2 ppb of chloromethane and 0.9 ppb of chloroform was detected in seven and five, respectively, out of 11 samples associated with trip blank -210WA (Table I-d-1). Their presence in the trip blank may indicate potential cross-contamination during shipment. Up to 94, 54, 3.4, and 22 ppb of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-isopropyltoluene, and naphthalene were detected in the samples associated with trip blank -215WA (Table I-f-1). Cross-contamination during sample shipment is unlikely

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because the associated primary rinsate blank (sample -219WA in Table II-c-1) and the QA trip blank reported no detectable levels of these four targeted volatiles.

2. Gasoline Range Organics: The presence of GRO in trip blanks -211WA and -223WA is attributable to laboratory contamination as it was detected at a similar concentration in the associated method blanks. The presence of GRO in trip blank -215WA (Table I-d-1) may be attributable to cross-contamination during sample shipment as an estimated concentration of 16 ppb was detected in the associated rinsate blank (sample -219WA in Table II-c-3) and up to 1430 ppb in the four associated samples of CAS report A9500853.

c. Rinsate Blank Results: The primary rinsate blank data are presented in Table II-a through II-c. All rinsate blank samples were free of targeted analytes with the following exceptions.

1. Volatile Organic Compounds: The presence of acetone and/or methylene chloride should be considered due to laboratory contamination. The presence of methylene chloride in the rinsate samples of Table II-a-1 and II-c-1 is not indicative of incidental cross-contamination during sampling because the rinsate blank samples contained the highest concentrations of methylene chloride in relation to the associated project samples. Toluene and trichloroethene were detected at similar concentrations in a minority of associated samples and their presence in the rinsate blank is not indicative of incidental cross-contamination during sampling. 2-butanone was not detected in any associated samples and the VOC data quality was unaffected.

2. Gasoline Range Organics: GRO was not detected in the associated primary samples of CAS report A9500829 and its presence in the rinsate blank is not indicative of incidental cross-contamination during sampling (Table II-a-7). The presence of GRO in the rinsate sample of Table II-c-3 may be attributable to cross-contamination during sample shipment or incidental field cross-contamination during sampling as an estimated concentration of 7 ppb was detected in the associated trip blank (sample -215WA in Table I-f-2) and up to 1430 ppb in the associated samples of CAS report A9500853.

3. Semi-volatile and Diesel Range Organics: Bis(2-ethylhexyl)phthalate was not detected in associated BNA sample of CAS report A9500829 and is not indicative of incidental cross-contamination during sampling (Table II-a-2). The presence of DRO in the rinsate blank of Table II-c-4 indicate that incomplete decontamination procedures were used and that incidental field cross-contamination may have occurred during the sampling event as up to 2.1 ppm of DRO was detected in the four associated samples of CAS report A9500853.

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d. Sample Holding Times, Reporting Limits, Laboratory Method Blanks, Accuracy and Precision: Sample holding times and detection/reporting limits were evaluated per EPA or State of Alaska Department of Environmental Conservation (ADEC) method criteria. The laboratory method blanks were evaluated for the absence of targeted analytes. The extraction efficiency, accuracy and precision of the data, as represented by surrogate, matrix spike (MS), matrix spike duplicate (MSD), blank spike (BS), and laboratory control (LC) recoveries and relative percent difference (RPD) results, were compared to EPA, ADEC, or laboratory established (LE) quality control (QC) acceptance limits for out of control results. All of the above mentioned internal QC data met EPA, ADEC, or LE QC limits and are acceptable with the following exceptions and/or notations.

1. Volatile Organic Compounds (VOC):

a. Sample Holding Time and Reporting Limits: The analytical holding time for VOC samples -139WA, -210WA, and the MS/MSD sample (-171WA) referenced in reports A9500853, A9500865 and A9500873 was exceeded by one day. Based on holding time expiration, the VOC data for these samples should be considered as estimates. The case narrative of report A9500829 stated that "...the reporting limits for 1,2,3-trichlorobenzene and 1,2,4- trichlorobenzene were elevated for several samples. Due to instrument difficulties, the minimum response for the trichlorobenzenes was not adequate to see the low standard." Review of the data indicate that for the samples analyzed 10/31/95 (-113WA, -128WA, -129WA, -147WA and for the associated method blank) the reporting limits were elevated two-fold. Based on this information, 1,2,3-trichlorobenzene and 1,2,4- trichlorobenzene may not have been detected at low concentrations in the affected samples.

b. Laboratory Method Blanks: It was noted during data review that the laboratory erred in not flagging the following data with a "B" qualifier: Methylene chloride for sample -131WA (report A9500789); acetone for -148WA; 4-isopropyltoluene for -144WA; 4-isopropyltoluene for -146WA (all of report A9500815); methylene chloride for -207WA (report A9500829); 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-isopropyltoluene, and naphthalene for samples -168WA, and -170WA (all of report A9500853); methylene chloride for -219WA (report A9500853). Acetone and methylene chloride were detected in a large majority of the VOC method blanks. The VOC data of these analytes in the associated samples (where qualified by the laboratory with a "B" flag) should be considered due to laboratory contamination as the sample results were less than ten times the level of method blank contamination for the common laboratory contaminants methylene chloride and acetone. The methylene chloride data for samples -207WA and -219WA are acceptable in reports A9500829 and A9500853, respectively, as the results are greater than ten times the level in the associated blank. In addition, up to 14 other targeted volatiles

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were detected at estimated concentrations in selected VOC method blanks. In the majority of cases, the associated samples were unaffected the laboratory contamination. Below is a listing of the affected data (sample results less than five times the level in the method blank) and their associated samples: The "B" qualified data of carbon disulfide report A9500798; data of sec-butylbenzene and 4-isopropyltoluene in report A9500815; data of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene for sample -171WA; and data of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and 4-isopropyltoluene for -173WA (all of report A9500853). The 4-isopropyltoluene data for samples -144WA and -146WA in report A9500815 (1.5 and 2 ppb, respectively) are acceptable as the results are greater than five times the level in the method blank (0.1 ppb). The data of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-isopropyltoluene, and naphthalene for samples -168WA, and -170WA (all of report A9500853) are acceptable as the results are greater than five times the levels in the method blank when the sample dilution factor is taken into account.

c Surrogate MS/MSD, LC Recoveries and RPD Results: One out of three surrogate recoveries for samples -144WA, -146WA, and -112WA was above LE QC limits. The VOC data of detected analytes should be considered as high estimates but the VOC data of the not detected (ND) analytes were unaffected by the high surrogate recoveries.

2. Semi-volatile Organic Compounds (BNA): One out of six surrogate recoveries for samples -110WA, -111WA, and -106WA(MSD), 107WA, and 112WA was below EPA QC limits. The extraction efficiency of the BNA data for these samples are acceptable based on the five remaining recoveries within QC limits. Five out of 22 MS/MSD spike analyte recoveries referenced in reports A9500815 and A9500820 were below EPA QC limits. The out of control spike analytes (1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and acenaphthene) constituted of three of the six base-neutral (BN) analytes. In addition, three out of 11 LC recoveries (the same three analytes noted above) were below EPA QC limits in the same reports. Based on the approximately 50 percent BN spike analyte failure, BN analytes may not have been detected at low concentrations in the samples of these reports (samples -106WA, -110WA, -111WA, -112WA, and -107WA).

3. Organochlorine Pesticides and Polychlorinated Biphenyls (Pest/PCB and PCB only): The extraction holding time for Pest/PCB samples -115WA and -207WA was exceeded by one day. Based on holding time expiration, the data for these samples should be considered as estimates. One out of 12 LC/LCD recoveries in report A9500767 was below LE QC limits. In addition, three out of six associated RPD results were above EPA QC limits. All associated Pest/PCB results were ND and the accuracy and precision of the associated data are acceptable based on the remaining acceptable spike recoveries and RPD results. One out of five Pest/PCB RPD results in report

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A9500815 was above EPA QC limits. The precision of the associated data are acceptable based on the remaining acceptable and RPD results.

4. Organophosphorus Pesticides (O-Pest): Ethoprop, at 0.04 ppb, was detected in the method blank of report A9500820. Since ethoprop was not detected in any associated samples, the O-Pest data quality was unaffected by the laboratory contamination.

5. Chlorinated Herbicides (Cl-Herb): The extraction holding time for Cl-Herb samples -106WA, -110WA, and -111WA (report A9500815) was exceeded by four days. The case narrative of report A9500815 stated that the initial extraction/analysis was within holding time but failed QC criteria. The surrogate recovery for all nine primary samples of reports A9500802, A9500815, and A9500820 and their associated QC samples (two method blanks, one MS/MSD set, and two LC/LCD sets) was either not detectable or below the LE QC limits of 61-124%. In addition, the following spike recoveries and RPD results were outside QC limits: Six of six MS/MSD recoveries were below LE QC limits as was one of three RPD results; two out of six LC/LCD (low) and one of three RPD results for report A9500802; and one out of six LC/LCD (low) and one of three RPD results referenced in reports A9500815 and A9500820. Based on the majority of failed internal QC data, low concentrations of Cl-Herb analytes were not detectable in any of the nine primary samples (-101WA, -102WA, -104WA, -105WA, -106WA, -110WA, -111WA, -107WA, and -112WA) and the data sets should be viewed with caution. The laboratory reported a different set of surrogate recovery acceptance criteria (33 to 109%) in report A9500829. The recovery for samples -115WA (56%), LC sample (58%) and the method blank (44%) were within these updated QC limits even though the laboratory flagged the data as failing QC criteria. The surrogate recovery for rinsate sample -207WA and the LC duplicate (LCD) sample were 19 and 11%, respectively, and below the updated LE QC limit. The three spike analyte recoveries for the LC sample were within QC limits but the LCD recoveries failed QC criteria with recoveries of approximately 1 percent. Based on the majority of failed internal QC data, low concentrations of Cl-Herb analytes were not detectable in the two primary samples (-115WA and -217WA) and the data set should be viewed with caution.

6. Polynuclear Aromatic Hydrocarbons (PAH): The reporting limit of acenaphthylene for samples -140WA and -141WA was elevated 12 and eight-fold, respectively because of laboratory reported matrix interference. Consequently, low concentrations of acenaphthylene may not have been detected, if present, in these samples. The surrogate recoveries for the batch MS/MSD samples in reports A9500773 and A9500804 were not reportable because of laboratory noted matrix interference. Since the samples used for spike analysis were not of this particular project and all associated surrogate and QC data met QC acceptance limits, the PAH data quality of these reports was not affected by the out of control results. Two out of three LC/LCD RPD results referenced in reports A9500815 and A9500820 were above the LE QC limit of 30. The precision

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of the associated data are acceptable based on the acceptable RPD results of the MS/MSD sample and the remaining acceptable LC/LCD RPD result. Two out of six MS/MSD recoveries in report A9500827 were above LE QC limits. The accuracy of the associated data are acceptable based on the four remaining MS/MSD and the acceptable LC recoveries.

7. Gasoline Range Organics (GRO): The analytical holding time for GRO sample -159WA was exceeded by five days. Based on holding time expiration, the GRO datum for this sample should be considered as an estimate. GRO, at 11 ppb, was detected in the method blank associated with reports A9500865 and A9500873. The GRO data for all samples of these reports (-114WA, -174WA, -117WA, -179WA, -221WA, -167WA, and -223WA) should be considered due to laboratory contamination as the sample results were less than five times the level of method blank. It was noted during data review that the laboratory erred in not flagging the GRO data of these reports with a "B" qualifier.

8. Diesel Range Organics (DRO):

a. Holding Times and Method Blanks: Due to failed instrument QC, the samples of report A9500789 (except for -125WA) were re-analyzed within holding time. The initial DRO result for sample -125WA should be utilized as an estimate. At the request of Alaska District and the North Pacific Division Laboratory (NPDL), CAS-Alaska reviewed the DRO data of reports A9500777 and A9500789 for possible method blank contamination (see CAS memorandum, dated 11 Mar 96). The DRO data of report A9500789 (-121WA, -123WA, -124WA, -130WA, -131WA, -133WA, 134WA, and -135WA) was qualified with a "BJ" flag meaning that the analyte was detected in the blank and sample. As these DRO results are less than five times the level of method blank contamination, the DRO data should be considered due to laboratory contamination. No update was performed on the DRO data of report A9500777.

b. Surrogate, MS/MSD, LC/LCD Recoveries, and RPD Results: The surrogate recovery for samples -102WA, -124WA, -148WA, -112WA, -113WA, -154WA, -155WA (in various reports) was below the ADEC QC limit but within the LE QC limits of 35-146%. Based on the low surrogate recoveries, low concentrations of DRO may not have been detected, if present, in the all of the ND samples and the DRO datum for sample -124WA should be considered as a low estimate. CAS-Alaska informed NPDL on 25 Oct 95 that the DRO extract of sample 95FRGW-154WA was completely evaporated and that no re-extraction was possible. Based on this information, the DRO datum for sample -154WA should not be considered usable. See NPDL telephone record, dated 30 Oct 95 for details of the problem. The LCD and method blank samples of report A9500789 had surrogate recoveries below the ADEC QC limit. The DRO data quality not adversely impacted by the low recoveries, as all of the DRO results in this report are

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attributable to laboratory contamination (as noted above). It was noted during data review that selected DRO data (sample -129WA of report A9500827, sample -157WA of report A9500829, samples -153WA, -154WA, -158WA and the method blank of report A9500832) were qualified with a "J" flag (estimated value) but it was unclear to this reviewer the meaning or significance of the qualifier with respect to data quality as the reported data was ND.

9. Total and Dissolved Metals:

a. Method Blanks: Sodium, at 100 ppb, was detected in the A951023-WB1 method blank referenced in reports A9500815 and A9500829. Vanadium, at 6 ppb, was also detected in the method blank of report A9500815 but was reported as ND in report A9500829 even though the method blank is of the same batch (A951023-WB1). The total and dissolved data of sodium in these reports are acceptable as the results are greater than five times the level in the method blank. The total and dissolved data of vanadium in report A9500815 should be considered due to blank contamination as the results are less than five times the level in the method blank. Vanadium was not detected in the associated samples of report A9500829, and the data quality was unaffected by the laboratory contamination. Sodium, at 100 ppb, was detected in the A951031-WB1 method blank referenced in reports A9500850, A9500853, and A9500857. The total and dissolved data of sodium in these reports are acceptable as noted above. Aluminum, at 40 ppb, was detected in the A951107-WB1 method blank referenced in reports A9500865 and A9500873. The total aluminum data for samples -177WA and -179WA are acceptable as noted above. The dissolved aluminum data for these samples should be considered due to laboratory contamination. Aluminum was not detected in the associated total and dissolved samples (-167WA) of report A9500873, and the data quality was unaffected by the laboratory contamination.

b. MS/MSD, LC/LCD Recoveries, and RPD Results: The MS and MSD recoveries and associated RPD results of calcium in report A9500767, calcium and magnesium in reports A9500773, A950077, and A9500789 and aluminum and iron in report A9500789 were not reportable as the original sample results were greater than four times the spike amount. The accuracy and precision of the associated total and dissolved data in these reports are acceptable based on acceptable LC/LCD recoveries and RPD results. The MS and MSD recoveries of aluminum and iron in report A9500767 were above EPA QC limits due to the presence of aluminum and iron in the original sample. The accuracy and precision of the associated total and dissolved data in these reports are acceptable based on acceptable LC/LCD recoveries and RPD results. One out of two calcium MS/MSD recoveries and the associated RPD result in report A9500827 were above EPA QC limits due to the presence of calcium in the original sample. The accuracy and precision of the associated total and dissolved data in this report are acceptable based on acceptable LC/LCD recoveries and RPD results. The RPD result of antimony in report

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A9500827 was above the EPA QC limit. Since antimony was not detected in any associated total or dissolved samples, the data quality was not adversely impacted by the out of control RPD result.

10. Inorganic Parameters: The analytical holding time for turbidity for samples -106WA, -110WA, and -111WA was exceeded by one day. Based on holding time expiration, the turbidity data for these samples should be considered as estimates. The correct date of analysis for the total dissolved solids (TDS) samples of report A9500829 was unclear because the date of analysis (17 Oct 95) does not correlate with a sample collection date of 18 Oct 95. Due to the lack of corrected information, the analytical holding time for TDS samples -115WA and 207WA could not be determined. The TRPH MS and MSD recoveries for report A9500815 were below the LE QC limit (sample -106WA was used for spike analysis). In addition, the associated RPD result was above the LE QC limit. Based on the out of control QC data, the TRPH results for samples -106WA and -110WA and -111WA should be considered low estimates. The laboratory duplicate RPD for TOC was above the LE QC limit. As the sample results used to calculate the RPD result were within a factor of five to the reporting limit, the RPD results should not be considered significant for the purpose of data evaluation.

e. Field Blind Duplicate Results: The field blind duplicate results are presented in Tables III through X. All data agree with each other except for the field blind duplicate data comparison of acetone in Table VIII-1. The primary data of acetone is due to laboratory contamination. The field blind duplicate data of silver in Table IX-5 does not agree. Since the primary laboratory had acceptable internal QC data, the discrepancy could not be analytically resolved. The QA data was not useful in resolving the discrepancy due to out of control internal QC data and the higher reporting limit used.

f. Overall Evaluation of the Primary Laboratories' Data: Sample cooler temperature delinquencies, COC discrepancies, sample containers mislabeled, a broken TOC sample, and two semi-volatile samples improperly transferred to new containers were the type of problems noted among the CAS-Alaska, CAS-Kelso and NTL COC and SCR forms. The presence of targeted volatiles and GRO in the trip and rinsate blank samples are due, in part, to laboratory contamination. In the majority of instances, the presence of analytes in the trip and/or rinsate blank samples is not indicative of cross-contamination during sample shipment with the following exceptions. The presence of chloromethane and chloroform in the trip blank -215WA (Table I-d-1) may indicate potential cross-contamination during shipment. The presence of GRO in the trip and rinsate samples (Table I-d-1 and Table II-c-3, respectively) may be attributable to cross-contamination during sample shipment or incidental field cross-contamination during sampling as 7 ppb was detected up to 1430 ppb in the associated samples. The presence of DRO in the rinsate blank of Table II-c-4 indicate that incomplete decontamination procedures were used and

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that incidental field cross-contamination may have occurred during the sampling event as up to 2.1 ppm of DRO was detected in the four associated samples. The field blind duplicate data of acetone in Table VIII-1 and silver in Table IX-5 does not agree with each other. The data of acetone is due to laboratory contamination but the silver discrepancy could not be analytically resolved as the laboratory had acceptable internal QC data.

1. VOC: Based on holding time expiration, the VOC data for samples -139WA, -210WA should be considered as estimates. Based on an inadequate response during measurement of the low VOC standard, the reporting limit for samples -113WA, -128WA, -129WA, and -147WA was elevated two-fold and low concentrations of 1,2,3-trichlorobenzene and 1,2,4-trichlorobenzene may not have been detected, if present, in the samples. The laboratory erred in not flagging selected data with a "B" qualifier (see section 6-d-1-b). The VOC data of acetone and methylene chloride in the majority of associated samples, selected carbon disulfide data in report A9500798, selected data of sec-butylbenzene and 4-isopropyltoluene in report A9500815, data of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene for sample -171WA, and data of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and 4-isopropyltoluene for -173WA are due to laboratory contamination. The methylene chloride datum for samples -207WA and -219WA are acceptable as are the data of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-isopropyltoluene, and naphthalene in samples -168WA, and -170WA and the 4-isopropyltoluene data in samples -144WA and -146WA as the results are greater than ten and five times, respectively, the level in the associated method blank. The VOC data of detected analytes for samples -144WA, -146WA, and -112WA should be considered as high estimates because of high surrogate recoveries.

2. BNA, Pest/PCB, O-Pest, Cl-Herb, and PAH: Based on a 50% BN spike analyte failure, BN analytes may not have been detected at low concentrations in the BNA samples of reports A9500815 and A9500820. Based on holding time expiration, the Pest/PCB data for samples -115WA and -207WA should be considered as estimates. Based on a majority of failed internal QC data, low concentrations of Cl-Herb analytes were not detectable in any 11 primary samples of reports A9500802, A9500815, A9500820, and A9500829 and the data sets should be viewed with caution. It was noted that the laboratory reported a different set of Cl-Herb surrogate recovery acceptance criteria in report A9500829. Because of an elevated reporting limit, low concentrations of acenaphthylene may not have been detected, if present, in PAH samples -140WA and -141WA.

3. GRO and DRO: Based on holding time expiration, the GRO datum for -159WA should be considered as an estimate. GRO data of reports A9500865 and A9500873 should be considered due to laboratory contamination. Due to failed instrument QC, the DRO result for sample -125WA should be used as an estimate. The DRO data of report A9500789, amended by CAS on 11 Mar 96, should be considered due to laboratory contamination. Based on a low surrogate recovery, low

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concentrations of DRO may not have been detected in samples -102WA, -148WA, -112WA, -113WA, -154WA, -155WA and the DRO datum for sample -124WA should be considered as a low estimate. Based on an extraction error, the DRO datum for sample -154WA should not be considered usable. See NPD L telephone record, dated 30 Oct 95 for details of the error.

4. Total Metals, Dissolved Metals, Inorganics, and BOD: The total and dissolved data of vanadium in report A9500815 should be considered due to blank contamination. The dissolved aluminum data for samples -177WA and -179WA should be considered due to laboratory contamination. Based on holding time expiration, the turbidity data for samples -106WA, -110WA, and -111WA should be considered as estimates. Because of an incorrect analysis date, the analytical holding time for TDS samples -115WA and -207WA could not be determined. Based on out of control matrix spike recoveries, the TRPH results for samples -106WA -110WA and -111WA should be considered low estimates.

7. EVALUATION OF THE QA LABORATORIES' DATA:

a. COC Records and SCR Forms: All COC records and sample shipping conditions, as documented on the NPD L, NET, BC Laboratories, and B&R Laboratories SCR forms, met EPA or USACE ER1110-1-263 requirements with the following exceptions and/or notations.

- **NET report 95.04071:** The sample cooler temperature recorded by NET was 1 °C which is outside the EPA requirements of 4 ± 2 °C.
- **NET report 95.04115:** Headspace was noted by NET for all six VOA containers for sample -108WA. As directed by NPD L, the laboratory performed the VOC and GRO analyses on the sample. Four out of five sample cooler temperatures recorded by NET were 1 °C but the laboratory did not specify which coolers. A COC record and SCR form were not submitted with the B&R Laboratories report of BOD and MBAS for sample -108WA. Sample custody, condition of the samples and cooler temperature could not determined.
- **NET report 95.04147:** BC Laboratories noted that one of three PAH containers for -156WA was received broken. It appeared that the laboratory used the two remaining volumes for sample analysis and QC purposes. A COC record and SCR form were not submitted with the B&R Laboratories report of BOD and MBAS for sample -208WA. Sample custody, condition of the samples and cooler temperature could not determined.

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- **NET report 95.04206:** The NPDL SCR forms noted a date of 24 Oct 95 on the custody seals but no associated relinquishing date was noted on the COC record. BC Laboratories noted that PAH sample -218WA was received two days past holding time. As directed by NPDL, the laboratory performed the PAH analysis on this sample.
- **NET report 95.04212:** Headspace was noted by NPDL and NET for two of three VOA containers for sample -222WA.

b. Trip and Rinsate Blank Results: The trip blank data are presented in Table I-d through I-g. All trip blank samples were free of targeted analytes. The rinsate blank data are presented in Table II-a through II-c. The rinsate samples contained two, one, and one VOC, BNA and PAH analytes, respectively, in addition to GRO and are noted below. 2-Butanone, at 8.9, 4.8, and 6.6 ppb, was detected in the rinsate blank samples of Table II-a-1, II-b-1, II-c-1, respectively. Since 2-butanone was not detected in any associated samples, the VOC data quality was unaffected by the contaminants presence in the rinsate blanks. Methylene chloride, at 21 ppb, was detected in the rinsate blank sample of Table II-c-1. Since methylene chloride was not detected in any associated samples, except for the primary laboratory's associated trip blank, the VOC data quality was unaffected by the contaminant's presence in the rinsate blanks. Bis(2-ethylhexyl)phthalate, at 34 ppb, was detected in the rinsate blank sample of Table II-a-2 and should be considered attributable to laboratory contamination. Benzo(k)fluoranthene, at 0.51 ppb, was detected in the rinsate blank sample of Table II-a-6. As benzo(k)fluoranthene was not detected in the primary or QA associated samples, its presence in the rinsate blank is not indicative of incidental cross-contamination during sampling. GRO, at 100 ppb, was detected in the rinsate blank sample of Table II-a-7. As GRO was not detected in the nine primary and one QA associated samples, its presence in the rinsate blank is not indicative of incidental cross-contamination during sampling.

c. Sample Holding Times, Reporting Limits, Laboratory Method Blanks, Accuracy, and Precision: Sample holding times and detection/reporting limits were evaluated per EPA or ADEC method criteria. The laboratory method blanks were evaluated for the absence of targeted analytes. The extraction efficiency, accuracy and precision of the data, as represented by surrogate, MS, MSD, BS recoveries, RPD results and continuing calibration verification (CCV) recoveries, were compared to EPA, ADEC, or LE QC acceptance limits for out of control results. All of the above mentioned internal QC data met EPA, ADEC, or LE QC limits and are acceptable with the following exceptions and/or notations.

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1. VOC: Sample holding times and reporting limits met method criteria. The case narrative of NET report 95.04147 noted that the laboratory had a problem achieving consistent internal standard recoveries during instrument calibration. The laboratory was contacted on 4 Mar 96 for clarification of the problem, any corrective actions taken, and its impact on VOC data quality. The response, dated 5 Mar 96, stated that the initial case narrative was in error and that the laboratory achieved acceptable internal standard recoveries for all calibration, project, and QC samples (see NET facsimile, dated 5 Mar 96). The associated internal QC results (surrogate recoveries, spike recoveries and RPD results) met acceptance limits.

2. BNA: The extraction holding time for sample -108WA was exceeded by one day. Based on holding time expiration, and the fact that the sample was ND for all targeted analytes, low concentrations of BNA analytes may not have been detected, if present in the sample. Bis (2-ethylhexyl)phthalate, at 14 ppb, was detected the method blank of report 95.04147. The datum of bis (2-ethylhexyl)phthalate in the associated sample (-208WA) should be considered due to laboratory contamination, as the associated sample result is less than ten times the level of method blank contamination. The associated internal QC results met acceptance limits.

3. Pest/PCB and PCB only: The extraction holding time for samples -108WA and -145WA was exceeded by one and three days, respectively. Because of initial out of control CCV recoveries, sample -208WA was re-analyzed three days past holding time. Based on holding time expiration, and the fact that the samples were ND for all targeted analytes, low concentrations of targeted analytes may not have been detected, if present in Pest/PCB samples -108WA and -208WA and PCB sample. One out of two surrogate recoveries for sample -145WA was below the LE QC limit. Per method criteria, the extraction efficiency of the sample are acceptable based on the one acceptable surrogate recovery. Four out of 12 MS/MSD recoveries were above LE QC limits and two out of six associated RPD results above QC limits in batch 335 of report 95.04115. In addition, two out of six BS recoveries of the same batch were above LE QC limits. Since targeted Pest/PCB analytes were not detected in the associated samples, the data quality was unaffected by the high spike recoveries and out of control RPD results. One out of 12 BS/BSD recoveries was above the LE QC limit in report 95.04147. The accuracy of the associated data are accepted based on the remaining acceptable spike recoveries.

4. O-Pest: The extraction holding time for sample -108WA was exceeded by one day. Based on holding time expiration, and the fact that the sample was ND for all targeted analytes, low concentrations of O-Pest analytes may not have been detected, if present in the sample. The CCV recovery of Naled was below EPA QC limits in report 95.04147. Per method criteria, as naled was not detected in the associated sample (-208WA), the data quality was unaffected by the out of control CCV result. The laboratory was contacted on 4 Mar 96 for clarification concerning its

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surrogate calculation procedures and its potential impact on O-Pest data quality (NET report 95.04147). Based on a review of the laboratory response (see facsimile, dated 6 Mar 96) the O-pest surrogate results are acceptable. All four BS recoveries in report 95.04147 were above LE QC limits at approximately 200%. The case narrative noted that the laboratory attributed the high recoveries to an extraction error in which the BS sample was double spiked with spike analyte solution. Since targeted O-Pest analytes were not detected in the associated sample (-208WA), the data quality was unaffected by the high spike recoveries. One out of five RPD results was above LE QC limits in report 95.04115. The precision of the data are accepted based on the remaining acceptable RPD results.

5. Cl-Herb: Sample holding times and reporting limits met method criteria. The associated internal QC results met acceptance limits and the data quality of the samples are acceptable.

6. PAH: The extraction holding time for sample -218WA was exceeded by two days. Based on holding time expiration, and the fact that the sample was ND for all targeted analytes, low concentrations of PAH analytes may not have been detected, if present in the sample. The CCV recovery of benzo(k)fluoranthene was above EPA QC limits in the BC Laboratories data of NET report 95.04115. Per method criteria, as benzo(k)fluoranthene was not detected in the associated samples, the data quality was unaffected by the out of control CCV result. Eleven out of 15 MSD recoveries were below LE QC limits as reported in the BC Laboratories data of NET report 95.04071. The low set of MSD recoveries contributed to the nine out of 15 out of control RPD results and the associated MS recoveries were all within QC limits. The low set of MSD recoveries is probably attributable to poor extraction procedure during the extraction of the MSD sample and is not likely due to an overall problem with the extraction efficiency of the samples (as noted by BC Laboratories in the report case narrative). The laboratory was contacted on 2 Mar 96 for MS/MSD and method blank sample surrogate recovery data which would be useful in assessing the extraction efficiency of the samples. The data, received on 22 Mar 96, reported surrogate recovery of 0% for the MSD sample. As the sample specific surrogate recovery for sample -146WA is acceptable, the PAH data quality is acceptable. One out of 30 MS/MSD recoveries was below the LE QC limit in report 95.04212. The accuracy of the associated data are accepted based on the remaining acceptable spike recoveries.

7. GRO: Sample holding times and reporting limits met method criteria. The associated internal QC results met acceptance limits and the data quality of the samples are acceptable.

8. DRO: The extraction holding time for sample -218WA was exceeded by two days. Based on holding time expiration and the fact that the sample was ND, low concentrations of DRO

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may not have been detected, if present in the sample. The BS recovery in report 95.04115 was below LE and ADEC QC limits. Based on acceptable sample specific surrogate recoveries and acceptable MS and MSD recoveries (of sample -108WA), the DRO data quality for samples -108WA and -142WA is accepted.

9. Total Metals: Sample holding times and reporting limits met method criteria. The MS and MSD recoveries of barium and manganese in report 95.04071 were below LE and EPA QC limits. Since the sample used for spike analysis was not from this particular project, the sample matrix effect is not applicable to the samples of this project. The accuracy of the associated barium and manganese data is accepted based on acceptable BS recoveries. The laboratory duplicate RPD of aluminum was above EPA and LE QC limits. As the sample results used to calculate the RPD result were within a factor of five to the reporting limit, the RPD results should not be considered significant for the purpose of data evaluation. One out of two calcium MS/MSD recoveries and associated RPD result in report 95.04115 were above the LE and EPA QC limits but should not be considered significant for the purpose of data evaluation as the original sample results were greater than four times the spike amount. The accuracy and precision of the data are acceptable based on an acceptable BS recovery and a laboratory duplicate RPD result. The MS and MSD recoveries of silver, referenced in reports 95.04206 and 95.04212, were below LE and EPA QC limits. Since the sample used for spike analysis was from this particular project (sample -172WA), the sample matrix effect is applicable to the samples of this project. Since all associated samples were ND for silver, low concentrations of silver may not have detected if present in samples -169WA, -172WA, -218WA, -220WA, and -178WA.

10. Dissolved Metals: Sample holding times and reporting limits met method criteria. One out of two lead MS/MSD recoveries and its associated RPD result, referenced in reports 95.04071, 95.04115, and 95.04147 were above the LE and EPA QC limits. One out of two mercury MS/MSD recoveries and associated RPD result in report 95.04147 were above the LE and EPA QC limits. The accuracy and precision of the associated data are accepted based on the remaining acceptable MS and BS recoveries and laboratory duplicate RPD results.

11. Inorganic Parameters: Due to possible false positive result (which the laboratory did not submit) during the initial analysis, total cyanide sample -208WA was re-analyzed one day past holding time. The holding time for turbidity samples -108WA and -208WA was exceeded by two and five days, respectively. The holding time for TDS sample -208WA was exceeded by two days. The holding time for BOD and MBAS samples -108WA and -208WA were each exceeded by three days. It was noted that the BOD and MBAS samples arrived at B&R Laboratory past holding time. Based on holding time expiration, the above mentioned data for these sample should be considered as estimates. The associated internal QC results met acceptance limits.

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f. Overall Evaluation of the QA Laboratories' Data: Headspace in selected volatiles samples and cooler temperature delinquencies were noted in the NET reports. COC records and SCR forms were not submitted with the B&R Laboratories data of BOD and MBAS. Sample custody, condition of the samples and cooler temperature could not be determined. All trip blank samples were free of targeted analytes. The rinsate samples contained two, one, and one VOC, BNA and PAH analytes, respectively, in addition to GRO. The presence of these analytes in the rinsate blanks are not indicative of incidental cross-contamination during sampling. Based on holding time expiration, selected data for the following samples should be considered as estimates (where applicable): BNA, Pest/PCB, O-Pest, turbidity, BOD, and MBAS data for sample -108WA; PCB data for sample -145WA; Pest/PCB, total cyanide, turbidity, TDS, BOD, and MBAS data for sample -208WA; and PAH and DRO data for sample -218WA. The datum of bis (2-ethylhexyl)phthalate in sample -208WA should be considered due to laboratory contamination. Based on low matrix spike recoveries, low concentrations of silver may not have been detected if present in samples -169WA, -172WA, -218WA, -220WA, and -178WA.

8. COMPARISON OF THE PRIMARY AND QA LABORATORIES' DATA: The primary and QA data comparisons are presented in Table II through X. All data agree with each other and are comparable with the following exceptions/notations. The reporting limits for antimony and thallium differ between the laboratory's due to the different analytical methods used. For antimony, the primary laboratory (CAS-Alaska) used EPA method 7041 versus the QA laboratory's EPA method 6010. For thallium, the primary laboratory (CAS-Alaska) used EPA method 7841 versus the QA laboratory's EPA method 6010. The analytical method code for MBAS was reported as "A5540A" in the applicable NET reports. It was reported as SM5540A or A5540A in applicable CAS reports. The method code refers to analysis method reported in Standard Methods for the Examination of Water and Wastewater, 19 edition and is equivalent to EPA method 425.1. CAS-Alaska erred in reporting the EPA method code for surfactants. It's 425.1 not 340.2 as noted in reports A9500815 and A9500829. The Standard Methods test code for BOD (5210), as noted in the B&R Laboratories reports is equivalent to EPA method 405.1.

1. Volatile Organic Compounds:

- The primary and QA rinsate data of methylene chloride do not agree with each other in Table II-a-1. Since both laboratories had acceptable internal QC data, the discrepancy could not be analytically resolved.

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- The primary (95FRGW-144WA) and QA data comparison of toluene does not agree with each other in Table V-1. Based on a high surrogate recovery, the primary datum of toluene should be considered as a high estimate.
- The field blind duplicate and QA data comparison of acetone do not agree in Table VIII-1. The primary data of acetone is due to laboratory contamination; QA datum are acceptable.

2. Semi-volatiles and PAH:

- The primary and QA rinsate data of benzo(k)fluoranthene do not agree with each other in Table II-a-6. Since both laboratories had acceptable internal QC data, the discrepancy could not be analytically resolved.
- The QA data of acenaphthene and naphthalene does not agree field blind duplicate data in Table VI-1. The QA laboratory did not detect acenaphthene because of the higher reporting limit used and the primary data are acceptable. Since both laboratories had acceptable internal QC data, the naphthalene discrepancy could not be analytically resolved. The primary data are accepted based on blind duplicate agreement.
- The QA data of acenaphthene, naphthalene, acenaphthylene, fluorene and phenanthrene does not agree field blind duplicate data in Table VIII-2. The QA laboratory did not detect acenaphthene because of the higher reporting limit used; primary data are acceptable. Since both laboratories had acceptable internal QC data, the remaining four discrepancies could not be analytically resolved. For the above mentioned discrepancies, the primary data (95FRGW-168WA and -170WA) are accepted based on blind duplicate agreement.

3. Total and Dissolved Metals:

- The primary data of silver in Table IV-5 does not agree with the QA datum due to the primary sample because of the higher but acceptable reporting limit used. Thallium was not detected in the QA sample (Table IV-5) because of the different analytical methods used.
- The QA datum of barium (Table III-10, III-11, VII-5, and VII-6), the QA datum of iron (Table IX-6 and X-6) and vanadium (Table VIII-5, IX-5, IX-6) does not agree field blind duplicate data due to the QA laboratory's higher but acceptable reporting limits used.

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- The QA datum of potassium does not agree field blind duplicate data in Table IV-5, IV-6, IX-5, and IIX-6. Since both laboratories had acceptable internal QC data, the discrepancies could not be analytically resolved. In these instances, the primary data are accepted based on blind duplicate agreement.

4. Inorganics: The COD comparison between the primary sample -110WA and the QA sample does not agree in Table II-12. Since both laboratories had acceptable internal QC data, the discrepancy could not be analytically resolved. The primary COD datum for sample -106WA are accepted based on blind duplicate and QA data agreement.

9. PROBLEMS ENCOUNTERED\CORRECTIVE ACTIONS TAKEN:

a. Alaska District:

1. Fecal coliform samples were submitted to CT&E for analysis. The results were not submitted by Alaska District to NPDL for evaluation.

2. Alaska District submitted a list of "Desired Method Reporting Limits" for the Ft. Richardson GW Study (Fall 95) to NPDL on 6 Oct 95. This listing was sent by facsimile to the QA laboratory by NPDL on 10 Oct 95. During review of the data it was noted that the QA laboratories did not meet the MRL's for the parameters of this project. It is possible that the laboratories did not have enough time to implement the request as the first QA samples arrived at NET Laboratory on 17 Oct 95. Review of the primary laboratories' data indicates that the MRL's were implemented for all parameters.

b. CAS-Alaska Laboratory:

1. In the NTL report submitted under CAS report number A9500815, the laboratory incorrectly listed the sample identities of BOD samples -110WA, -111WA, and -110WA(dup) as -106WA. By correlating the NTL lab sample identities to the results, the corrections are as follows: NTL lab # A141425 equals field sample -110WA; A141426 equals -111WA and A141427 equals -110WA(dup). See CAS amendment, dated 12 Mar 96 for the corrected pages.

2. Review of the COC records indicate that additional sample volumes for matrix spike analysis of semi-volatile parameters (BNA, PAH, Pest/PCB, O-Pest, CI-Herb, DRO, and TRPH) were not submitted with each sample shipment but were sent periodically. CAS report A900815

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did contain additional 1 liter sample volumes as did reports A9500829 and A9500853. The reported MS/MSD analyses appeared to be of a sufficient frequency to adequately characterize the effect of sample matrix on the accuracy of the project data.

3. In the CAS-Alaska SCR of report A9500850, the laboratory reported that samples 95FRGW-164WA for PAH analysis and -162WA for DRO analysis were received with the lids broken. The laboratory transferred each of the samples to another bottle. A potential problem with this type of transfer is that it is not quantitative as semi-volatile analytes can adhere to the surface of the glass container and be left behind. It is notable that this is taken into account during sample extraction of semi-volatiles in water as the procedure includes rinsing the glass container with solvent to collect the semi-volatile compounds on the glass surface.

4. The laboratory erred in not flagging selected VOC data with a "B" qualifier. The qualifier is used to indicate that the analyte is present in the blank and the sample. It appears that the laboratory did not flag the selected data because the analyte concentrations were greater than five or ten times the level in the method blank. The selected analytes/samples are as follows: Methylene chloride for sample -131WA (report A9500789); acetone for -148WA; 4-isopropyltoluene for -144WA; 4-isopropyltoluene for -146WA (all of report A9500815); methylene chloride for -207WA (report A9500829); 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-isopropyltoluene, and naphthalene for samples -168WA, and -170WA (all of report A9500853); methylene chloride for -219WA (report A9500853).

5. The laboratory erred in not flagging the GRO data of reports A9500865 and A9500873 with a "B" qualifier. In addition, 4-isopropyltoluene for -146WA (report A9500815) and the PAH data of pyrene for sample -171WA (report A9500853) should have been flagged with a "J" qualifier as the results were between the MDL and MRL.

6. It was noted during data review that selected DRO data (-129WA of report A9500827, 157WA of report A9500832, -153WA, -154WA, -158WA and the method blank of report A9500832) was qualified with a "J" flag (estimated value) but it was unclear to this reviewer the meaning or significance of the qualifier with respect to data quality.

7. The laboratory erred in not flagging the sodium, vanadium, and/or aluminum data of reports A95008815, A9500829, A9500850, A9500853, A9500857, A9500865, and A9500873 with a "B" qualifier.

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c. QA Laboratory (NET):

1. NET laboratory subcontracted the PAH analysis to BC Laboratories. The PAH data that was included in the NET electronic data deliverable (EDF) reports did not accurately reflect the subcontractor data that was included as an addendum to the NET reports. (Surrogate recoveries were not included, extraction dates incorrect and control limits were transcribed incorrectly). NET was notified of these problems on 2 Mar 96 and corrections were requested at this time. Corrections to the EDF deliverable have not received at the time of report preparation. This does not impact data quality as the BC laboratories data is correct.

2. On 2 Mar 96, NET was requested to submit supplemental PAH QC data. The additional MS/MSD and method blank sample surrogate recovery and CCV data was requested in an effort to aid NPDL in assessing the extraction efficiency of the samples. A facsimile, dated 22 Mar 96, was submitted as an amendment to these reports and included in this report as an addendum.

3. In NET reports 95.04115 and 95.04174, the surrogate recovery QC acceptance limits for the VOC surrogate, 4-bromofluorobenzene (BFB), were incorrectly reported as 76 to 114%. NPDL used the EPA QC acceptance limits of 86 to 115% to evaluate the submitted surrogate results. The laboratory was notified of the problem on 4 Mar 96. This same error has been noted among the NET reports submitted around the same timeframe. The NET correction for this error as been previously noted in other CQAR's and is not specifically included in this report.

4. In NET reports 95.04206 and 95.04212, the laboratory reported soil matrix surrogate recovery QC acceptance limits for the VOC samples and associated QC samples. As the matrix of the associated samples was water, water matrix VOC QC limits should have been utilized in these reports. The laboratory was notified of the problem on 4 Mar 96. A facsimile, dated 15 Mar 96, was submitted as an amendment to these reports and is included in this report as an addendum.

5. The total mercury CCV recovery in NET report 95.04206 (batch 343) was reported incorrectly. The laboratory was notified of the problem on 4 Mar 96, the corrected data was received on 15 Mar 96, incorporated into this report and included as an addendum.

6. The laboratory did not submit Langliers Index results for samples -108WA and -208WA even though the COC records of NET reports 95.04115 and 95.04147 requested this calculation. The laboratory was notified of the delinquency on 7 Mar 96, the corrected data was received on 15 Mar 96, incorporated into this report and included as an addendum.

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7. The case narrative of report 95.04147, for the organophosphorus pesticides (EPA 8140) analysis, stated that "...the surrogates were calculated from the response factor (RF) of the blank run with this set". The laboratory was contacted on 4 Mar 96 for clarification of this matter and its potential impact on O-Pest data quality. The response, dated 6 Mar 96, noted that the original case narrative was incomplete and that a "surrogate standard" was analyzed in order to provide a one-point calibration. This was done because the 8140 calibration solution did not contain the surrogate compound. The laboratory has since corrected this situation and a surrogate is now included in the 8140 stock standard solution (see NET facsimile for details).

8. COC records and SCR forms were not submitted with the B&R Laboratories data of BOD and MBAS for sample -108WA and -208WA of NET reports 95.04115 and 95.04147, respectively. NET was requested on 16 Feb 96 to submit the COC and SCR forms but failed to do so by the time of report preparation.

CENPD-ET-EN-L (1110-1-8100c)

22 Mar 96

MEMORANDUM FOR: Commander, Alaska District ATTN: CENPA-EN-G (Thomas)

SUBJECT: W.O. 95-0450, Results of Chemical Analysis

Project: GROUNDWATER STUDY - FALL 95, FT. WAINWRIGHTIntended Use: Site EvaluationSubmitted by: Alaska DistrictDate Sampled: 3 - 27 Oct 95Date Received: 4 - 31 Oct 95Reference: a) DD Form 448, MIPR No. E87-95-0139 Amendment 3, dated 14 Feb 95

b) Report numbers A9500767, A9500773, A9500777, A9500789, A9500798, A9500802, A9500804, A9500815, A9500820, A9500827, A9500829, A9500832, A9500850, A9500853, A9500857, A9500865, and A9500873 (with diskettes) and various amendments from Columbia Analytical Services (CAS), Inc.

c) Report numbers 95.04071, 95.04115, 95.04147, 95.04206, and 95.04212 (with diskettes) from National Environmental Testing (NET), Inc.

1. Enclosed are the original Chemical Quality Assurance Report, original report numbers 95.04071, 95.04115, 95.04147, 95.04206, and 95.04212 (with addenda) from NET, Inc., copies of CAS amendments, CENPD-ET-EN-L facsimiles and HTRW cooler discrepancy forms.
2. If you have any questions or comments concerning the Chemical Quality Assurance Report, please contact the author, Albert Hansen Jr., at (503) 669-0246 or Pamela Hertzberg at (503) 666-8143.
3. This completes all work requested for this project.

Enclosures

TIMOTHY J. SEEMAN
Director

Copy Furnished: CEMRO-HX-C CEMP-RT

MFR: Sample cooler delinquencies were noted in the reports. Selected data of volatiles, GRO, DRO and metals should be considered due to laboratory contamination. Because of an incorrect analysis date, the analytical holding time for the TDS samples of report A9500829 could not be determined. Based on holding time expiration or out of control internal QC data, a minority of the

CENPD-ET-EN-L (1110-1-8100c)
SUBJECT: W.O. 95-0450, Results of Chemical Analysis

VOC, BNA, GRO, DRO, pesticides and inorganics data should be considered as estimates. Based on a majority of failed internal QC data, low concentrations of chlorinated herbicides were not detectable in any of samples in reports A9500802, A9500815, A9500820, and A9500829 and the data sets should be viewed with caution. Based on an extraction error, the DRO datum for sample 95FRGW-154WA should not be considered usable. A few single analyte data comparisons for VOC, PAH, total, and dissolved metals do not agree with each other. Complete copy in office file.

CENPD-ET-EN-L (95-0450)

PRIMARY TRIP BLANK RESULTS

Table I-a

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Method: Volatile Organic Compounds (EPA 5030A/8260) Units: ug/L (ppb)
Primary Laboratory: CAS (Kelso), Inc.

Date:	10-3-95	10-5-95	10-6-95	Reporting
Analytes Detected	201WA#	202WA	203WA	Limits
Acetone	ND	3 J,B	2 J,B	120/20/20
Methylene Chloride	ND	0.1 J,B	0.1 J,B	5/1/1
Carbon Disulfide	ND	0.5 J	0.8	2/0.5/0.5
Toluene	ND	0.1 J	0.2 J	2/0.5/0.5

ND = Not detected

J = Estimated concentration

B = Found in method blank

= Data from CAS-Alaska report A9500773

SUMMARY: The presence of acetone and methylene chloride in the primary trip blanks is attributable to laboratory contamination. Carbon disulfide was detected at similar concentrations in one out of five associated samples (for trip blank -202WA) and one out of ten associated samples (for -203WA). Its presence in the trip blanks is not indicative of cross-contamination during sample shipment and may be due to unidentified laboratory contamination, as seen in trip blank -205WA of Table I-b. Toluene was not detected in any associated samples of trip blank -202WA and the VOC data quality was unaffected. The presence of toluene below the reporting limit in trip blank -203WA (and in trip blank -204WA of Table I-b) should not be considered due to cross-contamination during shipment as it was detected at 1.2 ppb in sample -133WA of report A9500789 but not in the nine other associated samples.

2. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: ug/L (ppb)
Primary Laboratory: CAS (Alaska), Inc.

Analytes Detected	201WA	202WA	203WA	Reporting
				Limits
GRO	ND	ND	ND	50

SUMMARY: The absence of fuel hydrocarbons indicate that cross-contamination did not occur during sample shipment or storage.

CENPD-ET-EN-L (95-0450)

PRIMARY TRIP BLANK RESULTS

Table I-b

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-

1. Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)
 Primary Laboratory: CAS (Kelso), Inc.

Date:	10-6-95	10-10-95	10-10-95	Reporting Limits
Analytes Detected	204WA	205WA	206WA	
Acetone	3 J,B	2 J,B	2 J,B	20
Methylene Chloride	0.1 J,B	ND	0.3 J,B	1
Carbon Disulfide	0.7	0.5 J,B	0.6	0.5
Toluene	0.1 J	0.2 J	ND	0.5
1,1,2-Trichloroethane	ND	ND	0.1 J	0.5
1,3-Dichloropropane	ND	ND	0.1 J	0.5

ND = Not detected
 J = Estimated concentration
 B = Found in method blank

SUMMARY: The presence of acetone, methylene chloride and carbon disulfide in the primary trip blanks is attributable to laboratory contamination. Carbon disulfide was detected at a similar concentration in one out of ten associated samples (with respect to trip blank -204WA). Its presence in the trip blanks is not indicative of cross-contamination during sample shipment and may be due to unidentified laboratory contamination, as seen in trip blank -205WA. The presence of toluene below the reporting limit in trip blank -204WA should not be considered due to cross-contamination during shipment as it was detected at 1.2 ppb in sample -133WA of report A9500789 but not in the nine other associated samples. Toluene, carbon disulfide, 1,1,2-trichloroethane and 1,3-dichloropropane were not detected in any associated samples of trip blanks -205WA and -206WA and the VOC data quality was unaffected.

2. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: µg/L (ppb)
 Primary Laboratory: CAS (Alaska), Inc.

Analytes Detected	204WA	205WA	206WA	Reporting Limits
GRO	ND	ND	ND	50

SUMMARY: The absence of fuel hydrocarbons indicate that cross-contamination did not occur during sample shipment or storage.

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PRIMARY TRIP BLANK RESULTS

Table I-c

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)
Primary Laboratory: CAS (Kelso), Inc.

Date:	10-19-95	10-19-95	10-27-95	Reporting
Analytes Detected	213WA	214WA	223WA	Limits
Acetone	3 J,B	3 J,B	2 J,B	20
Methylene Chloride	0.2 J,B	0.2 J,B	0.1 J,B	1
Carbon Disulfide	1.0	0.8	0.4 J	0.5
Toluene	0.3 J	0.3 J	ND	0.5
Chloroform	0.1 J	0.2 J	0.1 J	0.5
Bromochloromethane	ND	ND	0.1 J	0.5

ND = Not detected

J = Estimated concentration

B = Found in method blank

SUMMARY: The presence of acetone and methylene chloride in the primary trip blanks is attributable to laboratory contamination. Carbon disulfide was detected at similar concentrations in two out of 12 associated samples (with respect to trip blanks -213WA and -214WA). Its presence in the trip blanks is not indicative of cross-contamination during sample shipment and may be due to unidentified laboratory contamination, as seen in trip blank -205WA. The presence of bromochloromethane below the reporting limit in trip blank -223WA is not indicative of cross-contamination during shipment as it was detected in the associated sample (-167WA of CAS report A9500873) at an estimated concentration of 0.2 ppb. Toluene, and chloroform in trip blanks -213WA and -214WA and carbon disulfide and chloroform in -223WA were not detected in any associated samples and the VOC data quality was unaffected.

2. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: µg/L (ppb)
Primary Laboratory: CAS (Alaska), Inc.

Analytes Detected	213WA	214WA	223WA	Reporting
				Limits
GRO	ND	ND	9 J,B	50

SUMMARY: The absence of fuel hydrocarbons above the reporting limit indicate that cross-contamination did not occur during sample shipment or storage. The presence of GRO in -223WA is attributable to laboratory contamination.

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PRIMARY AND QA TRIP BLANK RESULTS

Table I-d

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)QA Method: Volatile Organic Compounds (EPA 5030/8260)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Date:	Primary Lab	Reporting	QA Lab	Reporting
Analytes Detected	10-12-95	Limits	10-12-95	Limits
	210WA		209WA	
Acetone	2 J,B	20	ND	8.0
Carbon Disulfide	0.5	0.5	--	
Chloromethane	0.1 J	0.5	ND	1.0
Chloroform	0.1 J	0.5	ND	1.0
Toluene	0.3 J	0.5	ND	1.0

ND = Not detected

-- = Not reported

J = Estimated concentration

B = Found in method blank

SUMMARY: The presence of acetone is attributable to laboratory contamination. As carbon disulfide was not detected in the 11 associated primary samples, the VOC data quality was unaffected. Toluene was detected at 440 and 370 ppb in samples -144WA and -146WA, respectively, of CAS report A9500815. Since the levels of toluene in the nine remaining associated samples ranged from not detected (ND) to estimated concentrations of 0.2 ppb, the presence of toluene in the trip blank is not indicative of cross-contamination during sample shipment. Up to 1.2 ppb of chloromethane and 0.9 ppb of chloroform was detected in seven and five, respectively, out of 11 associated samples and may indicate potential cross-contamination during shipment.

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Table I-d cont.

2. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: ug/L (ppb)
 Primary Laboratory: CAS (Alaska) Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 210WA</u>	<u>Reporting Limits</u>	<u>QA Lab 209WA</u>	<u>Reporting Limits</u>
GRO	ND	50	ND	50

SUMMARY: The absence of fuel hydrocarbons indicate that cross-contamination did not occur during sample shipment or storage.

CENPD-ET-EN-L (95-0450)

PRIMARY AND QA TRIP BLANK RESULTS

Table I-e

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)QA Method: Volatile Organic Compounds (EPA 5030/8260)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Date:	Primary Lab	Reporting	QA Lab	Reporting
Analytes Detected	10-16-95	Limits	10-16-95	Limits
	211WA		212WA	
Acetone	3 J,B	20	ND	8.0
Methylene Chloride	0.1 J,B	1	ND	1.0
Carbon Disulfide	0.7	0.5	--	
Toluene	0.3 J	0.5	ND	1.0

ND = Not detected

-- = Not reported

J = Estimated concentration

B = Found in method blank

SUMMARY: The presence of acetone and methylene chloride in the primary trip blank is attributable to laboratory contamination. Carbon disulfide and toluene were detected at similar concentrations in three and two out of nine associated samples, respectively, and their presence in the trip blank is not indicative of cross-contamination during sample shipment.

2. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: µg/L (ppb)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab	Reporting	QA Lab	Reporting
	211WA	Limits	212WA	Limits
GRO	ND	50	ND	50

SUMMARY: The absence of fuel hydrocarbons indicate that cross-contamination did not occur during sample shipment or storage.

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PRIMARY AND QA TRIP BLANK RESULTS

Table I-f

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: ug/L (ppb)QA Method: Volatile Organic Compounds (EPA 5030/8260)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Date:	Primary Lab	Reporting	QA Lab	Reporting
Analytes Detected	215WA	Limits	216WA	Limits
Acetone	3 J,B	20	ND	8.0
Methylene Chloride	0.1 J,B	1	ND	1.0
Carbon Disulfide	0.5	0.5	--	
1,3,5-Trimethylbenzene	0.1 J	2	ND	1.0
1,2,4-Trimethylbenzene	0.2 J	2	ND	1.0
1,2-Dichlorobenzene	0.1 J	0.5	ND	1.0
1,3-Dichlorobenzene	0.1 J	0.5	ND	1.0
1,4-Dichlorobenzene	0.1 J	0.5	ND	1.0
n-Butylbenzene	0.2	2	ND	1.0
4-Isopropyltoluene	0.1 J	2	ND	1.0
Naphthalene	0.5 J	2	ND	1.0
Hexachlorobutadiene	0.3 J	2	ND	1.0

ND = Not detected

-- = Not reported

J = Estimated concentration

B = Found in method blank

SUMMARY: The presence of acetone and methylene chloride in the primary trip blank is attributable to laboratory contamination. Carbon disulfide was detected at similar concentrations in three out of five associated samples, its presence in the trip blank is not indicative of cross-contamination during sample shipment and may be due to unidentified laboratory contamination, as seen in trip blank -205WA. Up to 94, 54, 3.4, and 22 ppb of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-isopropyltoluene, and naphthalene were detected in the primary and QA associated samples. Cross-contamination during sample shipment is unlikely because the associated primary rinsate blank (sample -219WA in Table II-c-1) and the QA trip blank reported no detectable levels of these four targeted volatiles. 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, n-butylbenzene and hexachlorobutadiene were not detected in any associated samples and the VOC data quality was unaffected.

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Table I-f cont.

2. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: µg/L (ppb)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 215WA</u>	<u>Reporting Limits</u>	<u>QA Lab 216WA</u>	<u>Reporting Limits</u>
GRO	7J	50	ND	50

SUMMARY: The presence of GRO (at an estimated concentration of 16 ppb) in the primary trip blank may be attributable to cross-contamination during sample shipment as it was detected in the associated rinsate blank (sample -219WA in Table II-c-3) and up to 1430 ppb in the four associated samples of CAS report A9500853.

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PRIMARY AND QA TRIP BLANK RESULTS

Table I-g

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)QA Method: Volatile Organic Compounds (EPA 5030/8260)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Date:	Primary Lab	Reporting	QA Lab	Reporting
Analytes Detected	10-24-95	Limits	10-24-95	Limits
	221WA		222WA	
Acetone	2 J,B	20	ND	8.0
Carbon Disulfide	0.4 J	0.5	--	
Bromochloromethane	0.1 J	0.5	ND	1.0

ND = Not detected

-- = Not reported

J = Estimated concentration

B = Found in method blank

SUMMARY: The presence of acetone in the primary trip blank is attributable to laboratory contamination. As carbon disulfide was not detected in any of the four associated samples, the VOC data quality was unaffected. Bromochloromethane was detected at 0.1 ppb in three of the four associated samples and at 0.1 ppb in the trip blank. Its presence in the trip blank is not indicative of cross-contamination during sample shipment and may be and may be due to unidentified laboratory contamination.

2. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: µg/L (ppb)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab	Reporting	QA Lab	Reporting
	221WA	Limits	222WA	Limits
GRO	8 J,B	50	ND	50

SUMMARY: The absence of fuel hydrocarbons above the reporting limit indicate that cross-contamination did not occur during sample shipment or storage. The presence of GRO is attributable to laboratory contamination.

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COMPARISON OF PRIMARY AND QA RINSATE BLANK RESULTS

Table II-a

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)QA Method: Volatile Organic Compounds (EPA 5030/8260)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Date: Analytes Detected	Primary Lab	Reporting Limits	QA Lab	Reporting Limits
	10-18-95 207WA		10-18-95 208WA	
Acetone	6 J,B	20	ND	8.0
2-Butanone	10 J	20	8.9	2.0
Methylene Chloride	32 B	1	ND	1.0
Toluene	0.2 J	0.5	ND	1.0
Trichloroethene	0.4 J	0.5	ND	1.0

ND = Not detected

J = Estimated concentration

B = Found in method blank

SUMMARY: The primary and QA rinsate data agree within a factor of three with each other or their reporting limits for all targeted volatiles except for methylene chloride. Since both laboratories had acceptable internal QC data, the discrepancy could not be analytically resolved. The primary datum of methylene chloride are acceptable and should not be considered due to laboratory contamination as the results are greater than ten times the level in the associated method blank. Up to 0.4 ppb of methylene chloride, attributable to laboratory contamination, was detected in seven of the nine associated samples. Based on this data, incidental methylene chloride cross-contamination during sampling was unlikely because the rinsate blank contained the highest concentration of methylene chloride in relation to the associated samples. The presence of acetone should be considered due to laboratory contamination. As toluene and trichloroethene were detected at similar concentrations in two and two out of nine associated samples, respectively, its presence in the rinsate blank is not indicative of incidental cross-contamination during sampling. 2-butanone was not detected in any associated samples and the VOC data quality was unaffected.

CENPD-ET-EN-L (95-0450)

Table II-a cont.

2. Primary Method: Semi-Volatile Organics (EPA 3510/8270A) Units: µg/L (ppb)QA Method: Semi-Volatile Organics (EPA 3510/8270)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 207WA</u>	<u>Reporting Limits</u>	<u>QA Lab 208WA</u>	<u>Reporting Limits</u>
Bis(2-ethylhexyl)phthalate	27	10	34.0 B	10

SUMMARY: The primary and QA rinsate data agree within a factor of three with each other for all targeted analytes. The absence of targeted analytes, except for bis(2-ethylhexyl)phthalate, indicate that incidental field cross-contamination was unlikely during the sampling event. Bis(2-ethylhexyl)phthalate in the QA sample is attributable to laboratory contamination. Bis(2-ethylhexyl)phthalate was not detected in associated primary sample -115WA of CAS report A9500829.

3. Primary Method: Organochlorine Pesticides and PCBs (EPA 3510A/8080) Units: µg/L (ppb)QA Method: Organochlorine Pesticides and PCBs (EPA 3510/8080)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 207WA</u>	<u>Reporting Limits</u>	<u>QA Lab 208WA</u>	<u>Reporting Limits</u>
	ND	0.04-1	ND	0.005-1.0

SUMMARY: The primary and QA rinsate data agree with each other for all targeted analytes. The absence of targeted analytes indicate that incidental field cross-contamination was unlikely during the sampling event.

CENPD-ET-EN-L (95-0450)

Table II-a cont.

4. Primary Method: Chlorinated Herbicides (EPA 3510A/8150A) Units: µg/L (ppb)
 QA Method: Chlorinated Herbicides (EPA 3510/8150)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 207WA</u>	<u>Reporting Limits</u>	<u>QA Lab 208WA</u>	<u>Reporting Limits</u>
	ND	0.2-200	ND	0.1-100

SUMMARY: The primary and QA rinsate data agree with each other for all targeted analytes. The absence of targeted analytes indicate that incidental field cross-contamination was unlikely during the sampling event.

5. Primary Method: Organophosphorous Pesticides (EPA 3510A/8140) Units: µg/L (ppb)
 QA Method: Organophosphorous Pesticides (EPA 3510/8140)
 Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 207WA</u>	<u>Reporting Limits</u>	<u>QA Lab 208WA</u>	<u>Reporting Limits</u>
	ND	1.0	ND	0.4-2.0

SUMMARY: The primary and QA rinsate data agree with each other for all targeted analytes. The absence of targeted analytes indicate that incidental field cross-contamination was unlikely during the sampling event.

CENPD-ET-EN-L (95-0450)

Table II-a cont.

6. Primary Method: Polynuclear Aromatic Hydrocarbons (EPA 3510A/8310) Units: ug/L (ppb)QA Method: Polynuclear Aromatic Hydrocarbons (EPA 3510/8310)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: BC Laboratories

<u>Analytes Detected</u>	<u>Primary Lab 207WA</u>	<u>Reporting Limits</u>	<u>QA Lab 208WA</u>	<u>Reporting Limits</u>
Benzo(k)fluoranthene	ND	0.1	0.51	0.2

SUMMARY: The primary and QA rinsate data agree within a factor of three with each other for all targeted analytes except for the comparison of benzo(k)fluoranthene. Since both laboratories had acceptable internal QC data, the discrepancy could not be analytically resolved. As benzo(k)fluoranthene was not detected in the primary or QA associated samples, its presence in the rinsate blank is not indicative of incidental cross-contamination during sampling.

7. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: ug/L (ppb)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 207WA</u>	<u>Reporting Limits</u>	<u>QA Lab 208WA</u>	<u>Reporting Limits</u>
GRO	144	50	100	50

SUMMARY: The primary and QA rinsate data agree within a factor of two with each other. As GRO was not detected in the nine primary and one QA associated samples, its presence in the rinsate blank is not indicative of incidental cross-contamination during sampling. Review of the primary fuel chromatogram (CAS report A9500829) shows that two individual peaks, which do not exhibit a gasoline pattern, contributed to the GRO result.

CENPD-ET-EN-L (95-0450)
 Table II-a cont.

8. Method: Diesel Range Organics (EPA 3510/ADEC 8100 Mod.) Units: mg/L (ppm)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 207WA</u>	<u>Reporting Limits</u>	<u>QA Lab 208WA</u>	<u>Reporting Limits</u>
DRO	ND	0.1	ND	0.1

SUMMARY: The primary and QA rinsate data agree with each other. The absence of diesel range fuel hydrocarbons indicate that incidental field cross-contamination was unlikely during the sampling event.

9. Primary Method: Total Recoverable Petroleum Hydrocarbons (EPA 3510/418.1)
 QA Method: Total Recoverable Petroleum Hydrocarbons (EPA 418.1) Units: mg/L (ppm)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 207WA</u>	<u>Reporting Limits</u>	<u>QA Lab 208WA</u>	<u>Reporting Limits</u>
TRPH	ND	0.5	ND	1.0

SUMMARY: The primary and QA rinsate data agree with each other. The absence of TRPH indicate that incidental field cross-contamination was unlikely during the sampling event.

CENPD-ET-EN-L (95-0450)

Table II-a cont.

10. Primary Method: Total Metals (EPA 3010A, 3020A/6010, 7000 series) Units: µg/L (ppb)QA Laboratory: Total Metals (EPA 3010, 3020/6010, 7000 series)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab 207WA	Reporting Limits	QA Lab 208WA	Reporting Limits
Aluminum	ND	100	ND	200
Antimony	ND	5	ND	100
Arsenic	ND	5	ND	5
Barium	ND	5	ND	20
Beryllium	ND	5	ND	20
Cadmium	ND	5	ND	20
Calcium	ND	50	ND	500
Chromium	ND	10	ND	20
Cobalt	ND	10	ND	50
Copper	ND	10	ND	20
Iron	ND	20	ND	100
Lead	ND	2	ND	2
Magnesium	ND	10	ND	500
Manganese	ND	5	ND	20
Mercury	ND	0.5	ND	0.2
Nickel	ND	30	ND	50
Potassium	ND	1000	ND	200
Selenium	ND	5	ND	5
Silver	ND	5	ND	20
Sodium	ND	100	ND	500
Thallium	ND	2	ND	200
Vanadium	ND	10	ND	50
Zinc	ND	10	ND	50

SUMMARY: The primary and QA rinsate data agree with each other. The absence of targeted metals indicate that incidental field cross-contamination was unlikely during the sampling event.

CENPD-ET-EN-L (95-0450)
Table II-a cont.

11. Primary Methods: Inorganic Parameters (EPA 100-400 series, SW-846, Std. Methods)
QA Methods: Inorganic Parameters (EPA 100-400 series, Std. Methods) Units: mg/L (ppm)
Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab 207WA	Reporting Limits	QA Lab 208WA	Reporting Limits
Total Alkalinity as CaCO ₃	ND	10	ND	10.0
Total Hardness as CaCO ₃	ND	10	ND	5.0
TKN	ND	0.2	ND	0.1
Ammonia as N	ND	0.1	ND	0.05
Nitrate+Nitrite as N	ND	0.2	ND	0.03
Total Phosphorous as P	ND	0.01	ND	0.02
Total Cyanide	ND	0.01	ND	0.02
Surfactants (MBAS)	ND	0.5	ND	0.05
Chloride	ND #	0.2	ND	1.0
Sulfate	ND #	0.2	ND	1.0
pH *	7.42	NA	--	
Turbidity **	ND	0.5	ND	0.05
TDS	ND	5	ND	10.0
TOC	ND #	0.5	ND	1.0
COD	ND	5	ND	10.0
BOD	ND @	2.0	ND @@	5.0
Langelier Index	NC		-7.33	

-- Not reported

NA = Not applicable

* = Reported as pH units

** = Reported as NTU (Nephelometric Turbidity Units)

= Analysis performed by CAS- Kelso

@ = Analysis performed by National Testing Laboratories

@@ = Analysis performed by B&R Laboratories

NC = Not calculable as associated results below reporting limit (see report A9500829)

SUMMARY: The primary and QA rinsate data agree with each other. The absence of targeted analytes indicate that incidental field cross-contamination was unlikely during the sampling event.

CENPD-ET-EN-L (95-0450)

COMPARISON OF PRIMARY AND QA RINSATE BLANK RESULTS

Table II-b

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-

1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: ug/L (ppb)
 QA Method: Volatile Organic Compounds (EPA 5030/8260)
 Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

	Primary Lab	Reporting	QA Lab	Reporting
Date:	10-21-95	Limits	10-21-95	Limits
Analytes Detected	217WA		218WA	
Acetone	4 J,B	20	ND	8.0
2-Butanone	4 J	20	4.8	2.0
Methylene Chloride	1 B	1	ND	1.0

ND = Not detected
 J = Estimated concentration
 B = Found in method blank

SUMMARY: The primary and QA rinsate data agree within a factor of three with each other or their reporting limits for all targeted volatiles. The primary data of acetone and methylene chloride are attributable to laboratory contamination. 2-butanone was not detected in any associated samples and the VOC data quality was unaffected.

2. Primary Method: Polynuclear Aromatic Hydrocarbons (EPA 3510A/8310) Units: ug/L (ppb)
 QA Method: Polynuclear Aromatic Hydrocarbons (EPA 3510/8310)
 Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: BC Laboratories

	Primary Lab	Reporting	QA Lab	Reporting
Analytes Detected	217WA	Limits	218WA	Limits
	ND	0.1-0.5	ND	0.08-8.0

SUMMARY: The primary and QA rinsate data agree with each other for all targeted analytes. The absence of targeted analytes indicate that incidental field cross-contamination was unlikely during the sampling event.

CENPD-ET-EN-L (95-0450)

Table II-b cont.

3. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: µg/L (ppb)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 217WA</u>	<u>Reporting Limits</u>	<u>QA Lab 218WA</u>	<u>Reporting Limits</u>
GRO	ND	50	ND	50

SUMMARY: The primary and QA rinsate data agree with each other. The absence of gasoline range fuel hydrocarbons indicate that incidental field cross-contamination was unlikely during the sampling event.

4. Method: Diesel Range Organics (EPA 3510/ADEC 8100 Mod.) Units: mg/L (ppm)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 217WA</u>	<u>Reporting Limits</u>	<u>QA Lab 218WA</u>	<u>Reporting Limits</u>
DRO	ND	0.1	ND	0.1

SUMMARY: The primary and QA rinsate data agree with each other. The absence of diesel range fuel hydrocarbons indicate that incidental field cross-contamination was unlikely during the sampling event.

CENPD-ET-EN-L (95-0450)

Table II-b cont.

5. Primary Method: Total Metals (EPA 3010A, 3020A/6010, 7000 series) Units: $\mu\text{g/L}$ (ppb)QA Laboratory: Total Metals (EPA 3010, 3020/6010, 7000 series)Primary Laboratory: CAS (Alaska), Inc.QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 217WA</u>	<u>Reporting Limits</u>	<u>QA Lab 218WA</u>	<u>Reporting Limits</u>
Aluminum	ND	100	ND	200
Antimony	ND	5	ND	100
Arsenic	ND	5	ND	5
Barium	ND	5	ND	20
Beryllium	ND	5	ND	20
Cadmium	ND	5	ND	20
Calcium	ND	50	ND	500
Chromium	ND	10	ND	20
Cobalt	ND	10	ND	50
Copper	ND	10	ND	20
Iron	ND	20	ND	100
Lead	ND	2	ND	2
Magnesium	ND	10	ND	500
Manganese	ND	5	ND	20
Mercury	ND	0.5	ND	0.2
Nickel	ND	30	ND	50
Potassium	ND	1000	ND	200
Selenium	ND	5	ND	5
Silver	ND	5	ND	20
Sodium	ND	100	ND	500
Thallium	ND	2	ND	200
Vanadium	ND	10	ND	50
Zinc	ND	10	ND	50

SUMMARY: The primary and QA rinsate data agree with each other. The absence of targeted metals indicate that incidental field cross-contamination was unlikely during the sampling event.

CENPD-ET-EN-L (95-0450)

COMPARISON OF PRIMARY AND QA RINSATE BLANK RESULTS

Table II-c

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)QA Method: Volatile Organic Compounds (EPA 5030/8260)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Date:	Primary Lab	Reporting	QA Lab	Reporting
Analytes Detected	10-23-95	Limits	10-23-95	Limits
	219WA		220WA	
Acetone	8 J,B	20	ND	8.0
2-Butanone	10 J	20	6.6	2.0
Methylene Chloride	25 B	1	21.0	1.0
Toluene	0.3 J	0.5	ND	1.0

ND = Not detected

J = Estimated concentration

B = Found in method blank

SUMMARY: The primary and QA rinsate data agree within a factor of three with each other or their reporting limits for all targeted volatiles. The primary datum of acetone is attributable to laboratory contamination. The primary datum of methylene chloride is acceptable and should not be considered due to laboratory contamination as the result is greater than ten times the level in the associated method blank. Methylene chloride, at 0.1 ppb, was detected in the primary laboratory's associated trip blank (-215WA in Table I-f-1) but not in any other associated primary or QA samples. Based on this data, incidental methylene chloride cross-contamination during sampling was unlikely because the rinsate blank contained the highest concentration of methylene chloride in relation to the associated samples. Toluene was detected in field blind duplicate and QA split samples -168WA, -170WA, and -169WA at 1.9 ppb. The other associated primary and QA samples did not contain detectable concentrations of toluene. Based on this data, incidental toluene cross-contamination during sampling is unlikely. 2-butanone was not detected in any associated samples and the VOC data quality was unaffected.

CENPD-ET-EN-L (95-0450)

Table II-c cont.

2. Primary Method: Polynuclear Aromatic Hydrocarbons (EPA 3510A/8310) Units: µg/L (ppb)QA Method: Polynuclear Aromatic Hydrocarbons (EPA 3510/8310)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: BC Laboratories

<u>Analytes Detected</u>	<u>Primary Lab 219WA</u>	<u>Reporting Limits</u>	<u>QA Lab 220WA</u>	<u>Reporting Limits</u>
	ND	0.1-0.5	ND	0.08-8.0

SUMMARY: The primary and QA rinsate data agree with each other for all targeted analytes. The absence of targeted analytes indicate that incidental field cross-contamination was unlikely during the sampling event.

3. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: µg/L (ppb)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 219WA</u>	<u>Reporting Limits</u>	<u>QA Lab 220WA</u>	<u>Reporting Limits</u>
GRO	16 J	50	ND	50

SUMMARY: The primary and QA rinsate data agree with each other. The presence of GRO may be attributable to cross-contamination during sample shipment or incidental field cross-contamination during sampling as an estimated concentration of 7 ppb was detected in the associated trip blank (sample -215WA in Table I-f-2) and up to 1430 ppb in the associated samples of CAS report A9500853.

CENPD-ET-EN-L (95-0450)

Table II-c cont.

4. Method: Diesel Range Organics (EPA 3510/ADEC 8100 Mod.) Units: mg/L (ppm)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab 219WA</u>	<u>Reporting Limits</u>	<u>QA Lab 220WA</u>	<u>Reporting Limits</u>
DRO	0.2	0.1	ND	0.1

SUMMARY: The primary and QA rinsate data agree with each other. The presence of diesel range hydrocarbons indicate that incomplete decontamination procedures were used and that incidental field cross-contamination may have occurred during the sampling event as up to 2.1 ppm of DRO was detected in the four associated samples of CAS report A9500853.

CENPD-ET-EN-L (95-0450)

Table II-c cont.

5. Primary Method: Total Metals (EPA 3010A, 3020A/6010, 7000 series) Units: µg/L (ppb)QA Laboratory: Total Metals (EPA 3010, 3020/6010, 7000 series)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab 219WA	Reporting Limits	QA Lab 220WA	Reporting Limits
Aluminum	ND	100	ND	200
Antimony	ND	5	ND	100
Arsenic	ND	5	ND	5
Barium	ND	5	ND	20
Beryllium	ND	5	ND	20
Cadmium	ND	5	ND	20
Calcium	ND	50	ND	500
Chromium	ND	10	ND	20
Cobalt	ND	10	ND	50
Copper	ND	10	ND	20
Iron	ND	20	ND	100
Lead	ND	2	ND	2
Magnesium	ND	10	ND	500
Manganese	ND	5	ND	20
Mercury	ND	0.5	ND	0.2
Nickel	ND	30	ND	50
Potassium	ND	1000	ND	200
Selenium	ND	5	ND	5
Silver	ND	5	ND	20
Sodium	ND	100	ND	500
Thallium	ND	2	ND	200
Vanadium	10	10	ND	50
Zinc	ND	10	ND	50

SUMMARY: The primary and QA rinsate data agree with each other. The absence of targeted metals indicate that incidental field cross-contamination was unlikely during the sampling event.

CENPD-ET-EN-L (95-0450)

COMPARISON OF FIELD BLIND DUPLICATE AND QA RESULTS

Table III

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)QA Method: Volatile Organic Compounds (EPA 5030/8260)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 108WA	Reporting Limits
	106WA	110WA			
Acetone	8 J,B	5 J,B	20	ND	8.0
Methylene Chloride	0.1 J,B	0.2 J,B	1	ND	1.0
Dichlorodifluoromethane	0.8	1.1	0.5	ND	1.0
Chloromethane	1.2	0.3 J	0.5	ND	1.0
Chloroform	0.3 J	0.3 J	0.5	ND	1.0
Toluene	0.2 J	0.2 J	0.5	ND	1.0

ND = Not detected

J = Estimated concentration

B = Found in method blank

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable. The data of acetone and methylene chloride is attributable to laboratory contamination. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison.

CENPD-ET-EN-L (95-0450)

Table III cont.

2. Primary Method: Semi-Volatile Organics (EPA 3510/8270A) Units: µg/L (ppb)
 QA Method: Semi-Volatile Organics (EPA 3510/8270)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 108WA	Reporting Limits
	106WA	110WA			
	ND	ND	10-25	ND	10-50

SUMMARY: The field blind duplicate and QA data agree with each other for all targeted analytes and are comparable.

3. Primary Method: Organochlorine Pesticides and PCBs (EPA 3510A/8080) Units: µg/L (ppb)
 QA Method: Organochlorine Pesticides and PCBs (EPA 3510/8080)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 108WA	Reporting Limits
	106WA	110WA			
	ND	ND	0.04-1.0	ND	0.005-1.0

SUMMARY: The field blind duplicate and QA data agree with each other for all targeted analytes and are comparable.

4. Primary Method: Chlorinated Herbicides (EPA 3510/8150A) Units: µg/L (ppb)
 QA Method: Chlorinated Herbicides (EPA 3510/8150)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 108WA	Reporting Limits
	106WA	110WA			
	ND	ND	0.2-5.0	ND	0.1-100

SUMMARY: The field blind duplicate and QA data agree with each other for all targeted analytes and are comparable.

CENPD-ET-EN-L (95-0450)

Table III cont.

5. Primary Method: Organophosphorous Pesticides (EPA 3510A/8140) Units: ug/L (ppb)
 QA Method: Organophosphorous Pesticides (EPA 3510/8140)
 Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 108WA	Reporting Limits
	106WA	110WA			
Dichlorvos	0.2 J	ND	1.0	ND	0.4
Ethoprop	0.09 J	0.09 J	1.0	ND	0.2

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison.

6. Primary Method: Polynuclear Aromatic Hydrocarbons (EPA 3510A/8310) Units: ug/L (ppb)
 QA Method: Polynuclear Aromatic Hydrocarbons (EPA 3510/8310)
 Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: BC Laboratories

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 108WA	Reporting Limits
	106WA	110WA			
	ND	ND	0.1-0.5	ND	0.08-8.0

SUMMARY: The field blind duplicate and QA data agree with each other for all targeted analytes and are comparable.

7. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: ug/L (ppb)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 108WA	Reporting Limits
	106WA	110WA			
GRO	ND	ND	50	ND	50

SUMMARY: The field blind duplicate and QA data agree with each other and are comparable.

CENPD-ET-EN-L (95-0450)

Table III cont.

8. Method: Diesel Range Organics (EPA 3510/ADEC 8100 Mod.) Units: mg/L (ppm)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab</u>		<u>Reporting Limits</u>	<u>QA Lab 108WA</u>	<u>Reporting Limits</u>
	<u>106WA</u>	<u>110WA</u>			
DRO	ND	ND	0.1	ND	0.1

SUMMARY: The field blind duplicate and QA data agree with each other and are comparable.

9. Primary Method: Total Recoverable Petroleum Hydrocarbons (EPA 3510/418.1)
 QA Method: Total Recoverable Petroleum Hydrocarbons (EPA 3510A/418.1) Units: mg/L (ppm)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab</u>		<u>Reporting Limits</u>	<u>QA Lab 108WA</u>	<u>Reporting Limits</u>
	<u>106WA</u>	<u>110WA</u>			
TRPH	0.27 J	1.05	0.5	ND	1.0

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison.

CENPD-ET-EN-L (95-0450)

Table III cont.

10. Primary Method: Total Metals (EPA 3010A, 3020A/6010, 7000 series) Units: $\mu\text{g/L}$ (ppb)
 QA Laboratory: Total Metals (EPA 3010, 3020/6010, 7000 series)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab	Reporting Limits
	106WA	110WA		108WA	
Aluminum	ND	ND	100	ND	200
Antimony	ND	ND	5	ND	100
Arsenic	ND	ND	5	ND	5
Barium	10	6	5	ND	20
Beryllium	ND	ND	5	ND	20
Cadmium	ND	ND	5	ND	20
Calcium	53,600	54,200	50	51,000	500
Chromium	ND	ND	10	ND	20
Cobalt	ND	ND	10	ND	50
Copper	ND	ND	10	ND	20
Iron	8 J	12 J	20	ND	100
Lead	ND	ND	2	ND	2
Magnesium	8520	8560	10	8600	500
Manganese	ND	ND	5	ND	20
Mercury	ND	ND	0.5	ND	0.2
Nickel	ND	ND	30	ND	50
Potassium	ND	ND	1000	ND	200
Selenium	ND	ND	5	ND	5
Silver	ND	ND	5	ND	1
Sodium	2900 B	3000 B	100	3200	500
Thallium	ND	ND	2	ND	200
Vanadium	3 J,B	ND	10	ND	50
Zinc	ND	ND	10	ND	50

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable except for the QA data of barium due to the laboratory's higher but acceptable reporting limit used. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison. The primary datum of vanadium should be considered due to laboratory contamination. The primary data of sodium are acceptable as the results are greater than five times the level in the associated method blank.

CENPD-ET-EN-L (95-0450)

Table III cont.

11. Method: Dissolved Metals (EPA 3005/6010, 7000 series) Units: ug/L (ppb)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab	Reporting Limits
	106WA	110WA		108WA	
Aluminum	ND	ND	100	ND	200
Antimony	ND	ND	5	ND	100
Arsenic	ND	ND	5	ND	5
Barium	6	6	5	ND	20
Beryllium	ND	ND	5	ND	20
Cadmium	ND	ND	5	ND	20
Calcium	53,400	55,000	50	56,000	500
Chromium	ND	ND	10	ND	20
Cobalt	ND	ND	10	ND	50
Copper	ND	ND	10	ND	20
Iron	ND	ND	20	ND	100
Lead	ND	ND	2	ND	2
Magnesium	8510	8580	10	8600	500
Manganese	ND	ND	5	ND	20
Mercury	ND	ND	0.5	ND	0.2
Nickel	ND	ND	30	ND	50
Potassium	ND	ND	1000	ND	200
Selenium	ND	ND	5	ND	5
Silver	ND	ND	5	ND	20
Sodium	2900 B	2900 B	100	3300	500
Thallium	ND	ND	2	ND	200
Vanadium	6 J,B	5 J,B	10	ND	50
Zinc	5 J	ND	10	ND	50

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable except for the QA data of barium due to the laboratory's higher but acceptable reporting limit used. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison. The primary data of vanadium should be considered due to laboratory contamination. The primary data of sodium are acceptable as the results are greater than five times the level in the associated method blank.

CENPD-ET-EN-L (95-0450)

Table III cont.

12. Primary Method: Inorganic Parameters (EPA 100-400 series, SW-846 and Std Methods)
 QA Method: Inorganic Parameters (EPA 100-400 series, Std. Methods) Units: mg/L (ppm)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 108WA	Reporting Limits
	106WA	110WA			
Total Alkalinity as CaCO ₃	160	160	10	160	10.0
Total Hardness as CaCO ₃	170	170	10	160.0	5.0
TKN	0.2	0.1 J	0.2	0.13	0.1
Ammonia as N	ND	ND	0.1	0.09	0.05
Nitrate+Nitrite as N	0.5	0.7	0.2	0.66	0.03
Total Phosphorous	ND	ND	0.01	0.025	0.02
Total Cyanide	ND	ND	0.01	ND	0.02
Surfactants (MBAS)	ND	ND	0.5	ND	0.05
Chloride	8.0 #	8.0 #	0.2	7.0	1.0
Sulfate	18 #	18 #	0.2	18.0	1.0
pH *	7.42	7.51	NA	--	
Turbidity **	ND	ND	0.5	0.1	0.05
TDS	205	228	5	220.0	10.0
TOC	0.3 J #	0.2 J #	0.5	ND	1.0
COD	12	ND	5	34.0	10.0
BOD	ND @	ND @	2.0	ND @@	5.0
Langelier Index	-0.6	-0.5		+0.14	

NA = Not applicable

-- = Not reported

* = Reported as pH units

** = Reported as NTU (Nephelometric Turbidity Units)

= Analysis performed by CAS-Kelso

@ = Analysis performed by National Testing Laboratories

@@ = Analysis performed by B&R Laboratories

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable except for the COD comparison of -110WA and the QA datum. Since both laboratories had acceptable internal QC data, the discrepancy could not be analytically resolved. The primary COD datum for sample -106WA are accepted based on blind duplicate and QA data agreement. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison.

CENPD-ET-EN-L (95-0450)

COMPARISON OF FIELD BLIND DUPLICATE AND QA RESULTS

Table IV

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)QA Method: Volatile Organic Compounds (EPA 5030/8260)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 142WA	Reporting Limits
	140WA	141WA			
Acetone	ND	3 J,B	20	ND	8.0
2-Butanone	0.4 J	ND	20	ND	2.0
Chloromethane	0.3 J	0.3 J	0.5	ND	1.0
Chloroethane	0.4 J	ND	0.5	ND	1.0
1,1-Dichloroethane	0.4 J	0.5 J	0.5	ND	1.0
cis-1,2-Dichloroethene	12	13	0.5	9.7	1.0
trans-1,2-Dichloroethene	ND	0.1 J	0.5	ND	1.0
Trichloroethene	1.3	1.4	0.5	1.3	1.0
Benzene	0.2 J	0.2 J	0.5	ND	1.0
Ethylbenzene	0.3 J	0.3 J	2	ND	1.0
n-Propylbenzene	0.3 J	0.3 J	2	ND	4.0
Isopropylbenzene	1 J	1 J	2	ND	1.0
n-Butylbenzene	ND	ND	2	1.1	1.0
tert-Butylbenzene	0.2 J	0.2 J	2	ND	1.0
sec-Butylbenzene	2 J,B	2 J,B	2	1.6	1.0
4-Isopropyltoluene	0.7 J,B	0.7 J,B	2	ND	1.0
Vinyl Chloride	0.4 J	0.3 J	0.5	ND	1.0

ND = Not detected

J = Estimated concentration

B = Found in method blank

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable. The primary data of acetone, sec-butylbenzene, and 4-isopropyltoluene is attributable to laboratory contamination. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison.

CENPD-ET-EN-L (95-0450)
Table IV cont.

2. Primary Method: Polynuclear Aromatic Hydrocarbons (EPA 3510A/8310) Units: µg/L (ppb)
QA Method: Polynuclear Aromatic Hydrocarbons (EPA 3510/8310)
Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: BC Laboratories

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 142WA	Reporting Limits
	140WA	141WA			
Fluorene	0.5	0.5	0.2	ND	0.2

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other for all targeted analytes and are comparable.

3. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: µg/L (ppb)
Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 142WA	Reporting Limits
	140WA	141WA			
GRO	ND	ND	50	ND	50

SUMMARY: The field blind duplicate and QA data agree with each other and are comparable.

4. Method: Diesel Range Organics (EPA 3510/ADEC 8100 Mod.) Units: mg/L (ppm)
Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 142WA	Reporting Limits
	140WA	141WA			
DRO	1.0	1.0	0.1	1.3	0.1

SUMMARY: The field blind duplicate and QA data agree within a factor of two with each other and are comparable.

CENPD-ET-EN-L (95-0450)

Table IV cont.

5. Primary Method: Total Metals (EPA 3010A, 3020A/6010, 7000 series) Units: $\mu\text{g/L}$ (ppb)QA Laboratory: Total Metals (EPA 3010, 3020/6010, 7000 series)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab	Reporting Limits
	140WA	141WA		142WA	
Aluminum	70 J	70 J	100	ND	200
Antimony	ND	ND	5	ND	100
Arsenic	ND	ND	5	ND	5
Barium	13	12	5	ND	20
Beryllium	ND	ND	5	ND	20
Cadmium	ND	ND	5	ND	20
Calcium	47,400	45,100	50	44,000	500
Chromium	5 J	ND	10	ND	20
Cobalt	ND	ND	10	ND	50
Copper	ND	ND	10	ND	20
Iron	3760	3620	20	3600	100
Lead	ND	ND	2	ND	2
Magnesium	9840	9480	10	9800	500
Manganese	2890	2770	5	2800	20
Mercury	ND	ND	0.5	ND	0.2
Nickel	10 J	8 J	30	ND	50
Potassium	2000	800 J	1000	ND	200
Selenium	ND	ND	5	ND	5
Silver	ND	ND	5	1	1
Sodium	5510 B	5400 B	100	5800	500
Thallium	3	ND	2	ND	200
Vanadium	11 B	3 J,B	10	ND	50
Zinc	6 J	6 J	10	ND	50

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable except for the QA data of potassium. Since both laboratories had acceptable internal QC data, the discrepancy could not be analytically resolved. Silver was not detected in the primary sample because of the higher but acceptable reporting limit used. Thallium was not detected in the QA sample because of the different analytical methods used. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison. The primary data of vanadium should be considered due to laboratory contamination. The primary data of sodium are acceptable as the results are greater than five times the level in the associated method blank.

CENPD-ET-EN-L (95-0450)

Table IV cont.

6. Method: Dissolved Metals (EPA 3005/6010, 7000 series) Units: µg/L (ppb)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 142WA	Reporting Limits
	140WA	141WA			
Aluminum	30 J	ND	100	ND	200
Antimony	ND	ND	5	ND	100
Arsenic	ND	ND	5	ND	5
Barium	53	31	5	30	20
Beryllium	ND	ND	5	ND	20
Cadmium	ND	ND	5	ND	20
Calcium	47,000	45,200	50	48,000	500
Chromium	ND	ND	10	ND	20
Cobalt	ND	ND	10	ND	50
Copper	ND	ND	10	ND	20
Iron	3260	3180	20	3200	100
Lead	ND	ND	2	ND	2
Magnesium	9730	9460	10	10,000	500
Manganese	2880	2780	5	3000	20
Mercury	ND	ND	0.5	ND	0.2
Nickel	ND	ND	30	ND	50
Potassium	2000	700 J	1000	ND	200
Selenium	ND	ND	5	ND	5
Silver	ND	ND	5	ND	20
Sodium	5500 B	5400 B	100	6300	500
Thallium	ND	ND	2	ND	200
Vanadium	17 B	4 J,B	10	ND	50
Zinc	18	11	10	ND	50

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable except for the QA data of potassium and zinc. Since both laboratories had acceptable internal QC data, the discrepancy could not be analytically resolved. Zinc was not detected in the QA sample due to the higher but acceptable reporting limit used. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison. The primary data of vanadium should be considered due to laboratory contamination. The primary data of sodium are acceptable as the results are greater than five times the level in the associated method blank.

CENPD-ET-EN-L (95-0450)

COMPARISON OF FIELD BLIND DUPLICATE AND QA RESULTS

Table V

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)QA Method: Volatile Organic Compounds (EPA 5030/8260)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab	Reporting Limits
	144WA	146WA		145WA	
Acetone	4 J,B	5 J,B	20	ND	8.0
Carbon Disulfide	0.2 J	ND	0.5	--	
1,1-Dichloroethane	0.6	0.6	0.5	ND	1.0
1,2-Dichloroethane	1.2	1.2	0.5	ND	1.0
1,1,1-Trichloroethane	16	17	0.5	11.0	1.0
Trichloroethene	1.9	1.9	0.5	1.6	1.0
Tetrachloroethene	0.5	0.5	0.5	ND	1.0
Benzene	110	90	5	37.0	1.0
Toluene	440	370	5	130.0	10.0
Ethylbenzene	340	300	5	140.0	10.0
Total Xylenes	1200	1100	5	530.0†	10.0
1,2,4-Trimethylbenzene	180	150	20	82.0	10.0
1,3,5-Trimethylbenzene	16	20	2	14.0	1.0
Isopropylbenzene	13	15	2	8.7	1.0
n-Propylbenzene	18	20	2	12.0	4.0
n-Butylbenzene	ND	ND	2	2.5	1.0
sec-Butylbenzene	ND	ND	2	1.4	1.0
tert-Butylbenzene	ND	ND	2	ND	1.0
4-Isopropyltoluene	1.5 J,B	2 J,B	2	3.3	1.0
Naphthalene	87	80	20	32.0	1.0

† = Sum of o- and m,p-xylene isomers

-- = Not reported

ND = Not detected

J = Estimated concentration

B = Found in method blank

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits for all targeted volatiles and are comparable except for the primary (-144WA) and QA data comparison of toluene. Based on a high surrogate recovery, the primary laboratory's VOC data for both samples should be considered high estimates. The primary data of acetone is attributable to laboratory contamination. The primary data of 4-isopropyltoluene are acceptable as the results are greater than five times the level in the associated method blank.

CENPD-ET-EN-L (95-0450)

Table V cont.

2. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: µg/L (ppb)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 145WA	Reporting Limits
	144WA	146WA			
GRO	2300	1670	50	2200	50

SUMMARY: The field blind duplicate and QA data agree with each other and are comparable.

3. Method: Polychlorinated Biphenyls (EPA 3510/8080) Units: mg/L (ppm)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 145WA	Reporting Limits
	144WA	146WA			
Aroclor 1016	ND	ND	0.1	ND	0.5
Aroclor 1221	ND	ND	0.1	ND	1.0
Aroclor 1232	ND	ND	0.1	ND	0.5
Aroclor 1242	ND	ND	0.1	ND	0.6
Aroclor 1248	ND	ND	0.1	ND	0.5
Aroclor 1254	ND	ND	0.1	ND	0.5
Aroclor 1260	ND	ND	0.1	ND	0.5

SUMMARY: The field blind duplicate and QA data agree with each other and are comparable.

CENPD-ET-EN-L (95-0450)

COMPARISON OF FIELD BLIND DUPLICATE AND QA RESULTS

Table VI

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Primary Method: Polynuclear Aromatic Hydrocarbons (EPA 3510A/8310) Units: µg/L (ppb)QA Method: Polynuclear Aromatic Hydrocarbons (EPA 3510/8310)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: BC Laboratories

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 146WA	Reporting Limits
	144WA	145WA			
Naphthalene	16	14	0.5	ND	2.0
Acenaphthene	0.3 J	0.3 J	0.5	ND	8.0
Fluorene	ND	0.07 J	0.2	ND	0.2
Phenanthrene	0.2	0.2	0.1	ND	0.08

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits for all targeted analytes and are comparable except for the QA data of acenaphthene and naphthalene. The QA laboratory did not detect acenaphthene because of the higher reporting limit used; primary data are acceptable. Since both laboratories had acceptable internal QC data, the naphthalene discrepancy could not be analytically resolved. The primary data are accepted based on blind duplicate agreement.

2. Method: Diesel Range Organics (EPA 3510/ADEC 8100 Mod.) Units: mg/L (ppm)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 146WA	Reporting Limits
	144WA	145WA			
DRO	1.7	0.8	0.1	1.3	0.1

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other and are comparable. The primary laboratory noted in report A9500804 that the fuel pattern of the samples did not resemble diesel. A review of the primary and QA fuel chromatograms confirmed this notation. In the opinion of this reviewer, it is possible that the PAH analytes reported in Table VI-1 may account for the numerous individual peaks which make up the front half of the chromatographic pattern.

CENPD-ET-EN-L (95-0450)

Table VI cont.

3. Primary Method: Total Metals (EPA 3010A, 3020A/6010, 7000 series) Units: µg/L (ppb)
 QA Laboratory: Total Metals (EPA 3010, 3020/6010, 7000 series)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab	Reporting Limits
	144WA	145WA		146WA	
Aluminum	2600	2600	100	2600	200
Antimony	ND	ND	5	ND	100
Arsenic	7	7	5	6	5
Barium	25	27	5	30	20
Beryllium	ND	ND	5	ND	20
Cadmium	ND	ND	5	ND	20
Calcium	16,200	16,600	50	17,000	500
Chromium	ND	ND	10	ND	20
Cobalt	ND	ND	10	ND	50
Copper	10	10	10	ND	20
Iron	4680	4810	20	1600	100
Lead	4	3	2	2	2
Magnesium	3730	3800	10	4100	500
Manganese	1220	1320	5	1400	20
Mercury	ND	ND	0.5	ND	0.2
Nickel	ND	ND	30	ND	50
Potassium	ND	ND	1000	ND	200
Selenium	ND	ND	5	ND	5
Silver	ND	ND	5	ND	20
Sodium	7400	7500	100	8000	500
Thallium	ND	ND	2	ND	200
Vanadium	ND	ND	10	ND	50
Zinc	20	30	10	ND	50

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable.

CENPD-ET-EN-L (95-0450)

Table VI cont.

4. Method: Dissolved Metals (EPA 3005/6010, 7000 series) Units: µg/L (ppb)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab	Reporting Limits
	144WA	145WA		146WA	
Aluminum	ND	ND	100	ND	200
Antimony	ND	ND	5	ND	100
Arsenic	7	7	5	6	5
Barium	21	23	5	30	20
Beryllium	ND	ND	5	ND	20
Cadmium	ND	ND	5	ND	20
Calcium	16,400	16,100	50	17,000	500
Chromium	ND	ND	10	ND	20
Cobalt	ND	ND	10	ND	50
Copper	ND	ND	10	ND	20
Iron	1560	1470	20	1600	100
Lead	ND	6	2	ND	2
Magnesium	2920	2890	10	3000	500
Manganese	1290	1250	5	1400	20
Mercury	ND	ND	0.5	ND	0.2
Nickel	ND	ND	30	ND	50
Potassium	ND	ND	1000	ND	200
Selenium	ND	ND	5	ND	5
Silver	ND	ND	5	ND	20
Sodium	7500	7500	100	8300	500
Thallium	ND	ND	2	ND	200
Vanadium	ND	ND	10	ND	50
Zinc	ND	20	10	ND	50

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable.

CENPD-ET-EN-L (95-0450)

COMPARISON OF FIELD BLIND DUPLICATE AND QA RESULTS

Table VII

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-
 1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)
 QA Method: Volatile Organic Compounds (EPA 5030/8260)
 Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 156WA	Reporting Limits
	155WA	157WA			
Acetone	2 J,B	3 J,B	20	ND	8.0
Methylene Chloride	0.4 J,B	0.4 J,B	1	ND	1.0
Chloroform	0.2 J	0.2 J	0.5	ND	1.0
Carbon Tetrachloride	1.4	1.4	0.5	1.4	1.0
1,1,1-Trichloroethane	ND	0.1 J	0.5	ND	1.0

ND = Not detected

J = Estimated concentration

B = Found in method blank

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits for all targeted volatiles and are comparable. The primary data of acetone and methylene chloride are attributable to laboratory contamination. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison.

CENPD-ET-EN-L (95-0450)

Table VII cont.

2. Primary Method: Polynuclear Aromatic Hydrocarbons (EPA 3510A/8310) Units: µg/L (ppb)QA Method: Polynuclear Aromatic Hydrocarbons (EPA 3510/8310)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: BC Laboratories

<u>Analytes Detected</u>	<u>Primary Lab</u>		<u>Reporting Limits</u>	<u>QA Lab</u>	<u>Reporting Limits</u>
	<u>155WA</u>	<u>157WA</u>		<u>156WA</u>	
	ND	ND	0.1-0.5	ND	0.08-8.0

SUMMARY: The field blind duplicate and QA data agree with each other for all targeted analytes and are comparable.

3. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: µg/L (ppb)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab</u>		<u>Reporting Limits</u>	<u>QA Lab</u>	<u>Reporting Limits</u>
	<u>155WA</u>	<u>157WA</u>		<u>156WA</u>	
GRO	ND	ND	50	ND	50

SUMMARY: The field blind duplicate and QA data agree with each other and are comparable.

4. Method: Diesel Range Organics (EPA 3510/ADEC 8100 Mod.) Units: mg/L (ppm)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

<u>Analytes Detected</u>	<u>Primary Lab</u>		<u>Reporting Limits</u>	<u>QA Lab</u>	<u>Reporting Limits</u>
	<u>155WA</u>	<u>157WA</u>		<u>156WA</u>	
DRO	ND	ND	0.1	ND	0.1

SUMMARY: The field blind duplicate and QA data agree with each other and are comparable.

CENPD-ET-EN-L (95-0450)

Table VII cont.

5. Primary Method: Total Metals (EPA 3010A, 3020A/6010, 7000 series) Units: µg/L (ppb)
 QA Laboratory: Total Metals (EPA 3010, 3020/6010, 7000 series)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 156WA	Reporting Limits
	155WA	157WA			
Aluminum	ND	ND	100	ND	200
Antimony	ND	ND	5	ND	100
Arsenic	ND	ND	5	ND	5
Barium	6	6	5	ND	20
Beryllium	ND	ND	5	ND	20
Cadmium	ND	ND	5	ND	20
Calcium	58,800	55,800	50	59,000	500
Chromium	ND	ND	10	ND	20
Cobalt	ND	ND	10	ND	50
Copper	ND	ND	10	ND	20
Iron	ND	ND	20	ND	100
Lead	ND	ND	2	ND	2
Magnesium	8530	8120	10	9000	500
Manganese	ND	ND	5	ND	20
Mercury	ND	ND	0.5	ND	0.2
Nickel	ND	ND	30	ND	50
Potassium	ND	ND	1000	ND	200
Selenium	ND	ND	5	ND	5
Silver	ND	ND	5	ND	20
Sodium	3200 B	3200 B	100	3500	500
Thallium	ND	ND	2	ND	200
Vanadium	ND	ND	10	ND	50
Zinc	ND	ND	10	ND	50

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable except for the QA datum of barium due to the QA laboratory's higher but acceptable reporting limit used. The primary data of sodium are acceptable as the results are greater than five times the level in the associated method blank.

CENPD-ET-EN-L (95-0450)

Table VII cont.

6. Method: Dissolved Metals (EPA 3005/6010, 7000 series) Units: µg/L (ppb)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab	Reporting Limits
	155WA	157WA		156WA	
Aluminum	ND	ND	100	ND	200
Antimony	ND	ND	5	ND	100
Arsenic	ND	ND	5	ND	5
Barium	6	5	5	ND	20
Beryllium	ND	ND	5	ND	20
Cadmium	ND	ND	5	ND	20
Calcium	57,000	56,800	50	58,000	500
Chromium	ND	ND	10	ND	20
Cobalt	ND	ND	10	ND	50
Copper	ND	ND	10	ND	20
Iron	ND	ND	20	ND	100
Lead	ND	ND	2	ND	2
Magnesium	8310	8220	10	9300	500
Manganese	ND	ND	5	ND	20
Mercury	ND	ND	0.5	ND	0.2
Nickel	ND	ND	30	ND	50
Potassium	ND	ND	1000	ND	200
Selenium	ND	ND	5	ND	5
Silver	ND	ND	5	ND	20
Sodium	3100 B	3200 B	100	3600	500
Thallium	ND	ND	2	ND	200
Vanadium	ND	ND	10	ND	50
Zinc	ND	ND	10	ND	50

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable except for the QA datum of barium due to the QA laboratory's higher but acceptable reporting limit used. The primary data of sodium are acceptable as the results are greater than five times the level in the associated method blank.

CENPD-ET-EN-L (95-0450)

COMPARISON OF FIELD BLIND DUPLICATE AND QA RESULTS

Table VIII

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)QA Method: Volatile Organic Compounds (EPA 5030/8260)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 169WA	Reporting Limits
	168WA	170WA			
Acetone	4 J,B	20 J,B	20	14.0	8.0
Carbon Disulfide	0.5	1.4 J	0.5	--	
2-Butanone	2 J	3 J	0.5	ND	2.0
Chloromethane	ND	0.4 J	0.5	ND	1.0
1,2-Dichloroethane	3.5	3.6	0.5	4.4	1.0
Benzene	36	37	0.5	38.0	5.0
Toluene	1.9	1.9	0.5	1.9	1.0
Ethylbenzene	11	11	0.5	11.0	1.0
Total Xylenes	72	71	0.5	79.0†	1.0
n-Propylbenzene	5.1	5	2	4.2	1.0
Isopropylbenzene	4.4	4	2	3.9	1.0
1,2,4-Trimethylbenzene	94 B	79 B	20	86.0	5.0
1,3,5-Trimethylbenzene	54 B	46 B	20	47.0	4.0
4-Isopropyltoluene	3.4 B	3 B	2	8.5	5.0
Naphthalene	22 B	21 B	2	20.0	1.0

ND = Not detected

-- = Not reported

J = Estimated concentration

† = Sum of and o- and m,p-xylene isomers

B = Found in method blank

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits for all targeted volatiles and are comparable except for acetone. The primary data of acetone is due to laboratory contamination; QA datum is acceptable. The primary data of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-isopropyltoluene, and naphthalene are acceptable as the results are greater than five times the concentrations found in the associated method blank. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison.

CENPD-ET-EN-L (95-0450)

Table VIII cont.

2. Primary Method: Polynuclear Aromatic Hydrocarbons (EPA 3510A/8310) Units: µg/L (ppb)QA Method: Polynuclear Aromatic Hydrocarbons (EPA 3510/8310)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: BC Laboratories

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 169WA	Reporting Limits
	168WA	170WA			
Naphthalene	8.4	9.7	0.5	ND	2.0
Acenaphthylene	8.5	10	0.5	ND	1.0
Acenaphthene	0.9	1.1	0.2	ND	8.0
Fluorene	0.8	0.9	0.1	ND	0.2
Anthracene	ND	0.006 J	0.1	ND	8.0
Fluoranthene	0.008 J	0.009 J	0.2	ND	0.4
Phenanthrene	0.7	0.7	0.2	ND	0.08

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable except for the QA data of acenaphthene, naphthalene, acenaphthylene, fluorene and phenanthrene. The QA laboratory did not detect acenaphthene because of the higher reporting limit used; primary data are acceptable. Since both laboratories had acceptable internal QC data, the remaining four discrepancies could not be analytically resolved. For the above mentioned discrepancies, the primary data are accepted based on blind duplicate agreement. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison.

CENPD-ET-EN-L (95-0450)

Table VIII cont.

3. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: µg/L (ppb)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 169WA	Reporting Limits
	168WA	170WA			
GRO	1400	1430	50	1500	50

SUMMARY: The field blind duplicate and QA data agree within a factor of two with each other and are comparable.

4. Method: Diesel Range Organics (EPA 3510/ADEC 8100 Mod.) Units: mg/L (ppm)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 169WA	Reporting Limits
	168WA	170WA			
DRO	2.0	2.1	0.1	2.0	0.1

SUMMARY: The field blind duplicate and QA data agree within a factor of two with each other and are comparable. The primary laboratory noted in report A9500853 that the fuel pattern of the samples did not resemble diesel. A review of the primary and QA fuel chromatograms confirmed this notation. In the opinion of this reviewer, it is possible that the PAH analytes reported in Table VIII-2 may account for the numerous individual peaks which make up a substantial portion of the front half of the chromatographic pattern.

CENPD-ET-EN-L (95-0450)

Table VIII cont.

5. Primary Method: Total Metals (EPA 3010A, 3020A/6010, 7000 series) Units: µg/L (ppb)QA Laboratory: Total Metals (EPA 3010, 3020/6010, 7000 series)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 169WA	Reporting Limits
	168WA	170WA			
Aluminum	ND	ND	100	ND	200
Antimony	ND	ND	5	ND	100
Arsenic	7	5	5	ND	5
Barium	18	18	5	ND	20
Beryllium	ND	ND	5	ND	20
Cadmium	ND	ND	5	ND	20
Calcium	88,700	91,200	50	89,000	500
Chromium	ND	ND	10	ND	20
Cobalt	ND	ND	10	ND	50
Copper	ND	ND	10	ND	20
Iron	1890	1910	20	1900	100
Lead	ND	ND	2	ND	2
Magnesium	11,700	11,900	10	13,000	500
Manganese	1540	1580	5	1600	20
Mercury	ND	ND	0.5	ND	0.2
Nickel	ND	ND	30	ND	50
Potassium	900 J	900 J	1000	ND	200
Selenium	ND	ND	5	ND	5
Silver	ND	ND	5	ND	20
Sodium	3300 B	3300 B	100	3700	500
Thallium	ND	ND	2	ND	200
Vanadium	ND	10	10	ND	50
Zinc	ND	ND	10	ND	50

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable except for the QA datum of vanadium due to the QA laboratory's higher but acceptable reporting limits used. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison. The primary data of sodium are acceptable as the results are greater than five times the level in the associated method blank.

CENPD-ET-EN-L (95-0450)

COMPARISON OF FIELD BLIND DUPLICATE AND QA RESULTS

Table IX

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)QA Method: Volatile Organic Compounds (EPA 5030/8260)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 172WA	Reporting Limits
	171WA	173WA			
Acetone	3 J,B	4 J,B	20	ND	8.0
2-Butanone	0.9 J	0.9 J	20	ND	2.0
Carbon Disulfide	ND	0.7	0.5	--	
Chloromethane	ND	0.6	0.5	ND	1.0
1,2-Dichloroethane	ND	0.4 J	0.5	ND	1.0
Benzene	0.8	0.8	0.5	ND	1.0
Total Xylenes	0.4 J	ND	0.5	ND	1.0
1,2,4-Trimethylbenzene	0.8 J,B	0.2 J,B	2	ND	1.0
1,3,5-Trimethylbenzene	0.5 J,B	0.2 J,B	2	ND	1.0
4-Isopropyltoluene	ND	0.2 J,B	2	ND	1.0
Naphthalene	1 J,B	ND	2	1.6	1.0

ND = Not detected

-- = Not reported

J = Estimated concentration

B = Found in method blank

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits for all targeted volatiles and are comparable. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison. The primary data of acetone, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-isopropyltoluene, and naphthalene are due to laboratory contamination.

CENPD-ET-EN-L (95-0450)

Table IX cont.

2. Primary Method: Polynuclear Aromatic Hydrocarbons (EPA 3510A/8310) Units: µg/L (ppb)
 QA Method: Polynuclear Aromatic Hydrocarbons (EPA 3510/8310)
 Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: BC Laboratories

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 172WA	Reporting Limits
	171WA	173WA			
Acenaphthylene	1.4	0.9	0.5	ND	1.0
Acenaphthene	0.08 J	ND	0.5	ND	8.0
Pyrene	0.009 J	0.009 J	0.2	ND	0.8
Fluorene	0.08 J	0.09 J	0.2	ND	0.2

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison.

3. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: µg/L (ppb)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 172WA	Reporting Limits
	171WA	173WA			
GRO	57	54	50	70	50

SUMMARY: The field blind duplicate and QA data agree within a factor of two with each other and are comparable.

4. Method: Diesel Range Organics (EPA 3510/ADEC 8100 Mod.) Units: mg/L (ppm)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 172WA	Reporting Limits
	171WA	173WA			
DRO	0.9	0.9	0.1	0.52	0.1

SUMMARY: The field blind duplicate and QA data agree within a factor of two with each other and are comparable.

CENPD-ET-EN-L (95-0450)

Table IX cont.

5. Primary Method: Total Metals (EPA 3010A, 3020A/6010, 7000 series) Units: µg/L (ppb)
 QA Laboratory: Total Metals (EPA 3010, 3020/6010, 7000 series)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab 172WA	Reporting Limits
	171WA	173WA			
Aluminum	ND	ND	100	ND	200
Antimony	ND	ND	5	ND	100
Arsenic	2	ND	5	ND	5
Barium	23	23	5	20	20
Beryllium	ND	ND	5	ND	20
Cadmium	ND	ND	5	ND	20
Calcium	94,300	93,200	50	94,000	500
Chromium	ND	ND	10	ND	20
Cobalt	ND	ND	10	ND	50
Copper	ND	ND	10	ND	20
Iron	110	100	20	100	100
Lead	ND	1 J	2	ND	2
Magnesium	11,300	11,100	10	12,000	500
Manganese	421	415	5	440	20
Mercury	ND	ND	0.5	ND	0.2
Nickel	ND	ND	30	ND	50
Potassium	1000	3300	1000	ND	200
Selenium	ND	ND	5	ND	5
Silver	ND	20	5	ND	20
Sodium	3400 B	3300 B	100	4000	500
Thallium	ND	ND	2	ND	200
Vanadium	10	20	10	ND	50
Zinc	ND	ND	10	ND	50

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other and are comparable with the following exceptions. The field blind duplicate data of silver, and since the primary laboratory had acceptable internal QC data, the discrepancy could not be analytically resolved. The QA datum was not useful in resolving the discrepancy due to out of control internal QC data and the higher reporting limit used. The QA datum of potassium does not agree with the field blind duplicate results. Since both laboratories had acceptable internal QC data, the discrepancy could not be analytically resolved. The primary data are accepted based on blind duplicate agreement. The QA datum of vanadium does not agree due to the QA laboratory's higher but acceptable reporting limit used. The primary data of sodium are acceptable as the results are greater than five times the level in the associated method blank.

CENPD-ET-EN-L (95-0450)

Table IX cont.

6. Method: Dissolved Metals (EPA 3005/6010, 7000 series) Units: µg/L (ppb)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab	Reporting Limits
	171WA	173WA		172WA	
Aluminum	ND	ND	100	ND	200
Antimony	ND	ND	5	ND	100
Arsenic	4	ND	5	ND	5
Barium	22	22	5	20	20
Beryllium	ND	ND	5	ND	20
Cadmium	ND	ND	5	ND	20
Calcium	93,400	90,600	50	89,000	500
Chromium	ND	ND	10	ND	20
Cobalt	ND	ND	10	ND	50
Copper	ND	ND	10	ND	20
Iron	20	19 J	20	ND	100
Lead	ND	4	2	ND	2
Magnesium	11,100	10,800	10	12,000	500
Manganese	416	402	5	420	20
Mercury	ND	ND	0.5	ND	0.2
Nickel	ND	ND	30	ND	50
Potassium	1000	1000	1000	ND	200
Selenium	ND	ND	5	ND	5
Silver	ND	ND	5	ND	20
Sodium	3400 B	3200 B	100	4000	500
Thallium	ND	ND	2	ND	200
Vanadium	10	20	10	ND	50
Zinc	ND	ND	10	ND	50

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other and are comparable except for the QA data of iron of vanadium due to the QA laboratory's higher but acceptable reporting limit used. The QA datum of potassium does not agree with the field blind duplicate results. Since both laboratories had acceptable internal QC data, the discrepancy could not be analytically resolved. The primary data are accepted based on blind duplicate agreement. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison. The primary data of sodium are acceptable as the results are greater than five times the level in the associated method blank.

CENPD-ET-EN-L (95-0450)

COMPARISON OF FIELD BLIND DUPLICATE AND QA RESULTS

Table X

Project: Groundwater Study (Fall), Ft. Richardson Matrix: Water Prefix: 95FRGW-1. Primary Method: Volatile Organic Compounds (EPA 5030A/8260) Units: µg/L (ppb)QA Method: Volatile Organic Compounds (EPA 5030/8260)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab	Reporting Limits
	177WA	179WA		178WA	
Acetone	2 J,B	2 J,B	20	ND	8.0
Trichlorofluoromethane	0.1 J	0.1 J	0.5	ND	1.0
Bromochloromethane	0.1 J	0.1 J	0.5	ND	1.0
Chloroform	0.5 J	0.5	0.5	ND	1.0
Carbon Tetrachloride	0.7	0.7	0.5	ND	1.0

ND = Not detected

J = Estimated concentration

B = Found in method blank

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits for all targeted volatiles and are comparable. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison. The primary data of acetone is attributable to laboratory contamination.

CENPD-ET-EN-L (95-0450)

Table X cont.

2. Primary Method: Polynuclear Aromatic Hydrocarbons (EPA 3510A/8310) Units: µg/L (ppb)QA Method: Polynuclear Aromatic Hydrocarbons (EPA 3510/8310)Primary Laboratory: CAS (Kelso), Inc. QA Laboratory: BC Laboratories

Analytes Detected	Primary Lab		Reporting Limits	QA Lab	Reporting Limits
	177WA	179WA		178WA	
	ND	ND	0.1-0.5	ND	0.08-8.0

SUMMARY: The field blind duplicate and QA data agree with each other for all targeted analytes and are comparable.

3. Method: Gasoline Range Organics (EPA 5030/ADEC 8015 Mod.) Units: µg/L (ppb)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab	Reporting Limits
	177WA	179WA		178WA	
GRO	11 J,B	7 J,B	50	ND	50

SUMMARY: The field blind duplicate and QA data agree with each other. The primary data are due to laboratory contamination.

4. Method: Diesel Range Organics (EPA 3510/ADEC 8100 Mod.) Units: mg/L (ppm)Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab	Reporting Limits
	177WA	179WA		178WA	
DRO	0.1	0.1	0.1	ND	0.1

SUMMARY: The field blind duplicate and QA data agree within a factor of two with each other or their reporting limits and are comparable.

CENPD-ET-EN-L (95-0450)

Table X cont.

5. Primary Method: Total Metals (EPA 3010A, 3020A/6010, 7000 series) Units: µg/L (ppb)
 QA Laboratory: Total Metals (EPA 3010, 3020/6010, 7000 series)
 Primary Laboratory: CAS (Alaska), Inc. QA Laboratory: NET, Inc.

Analytes Detected	Primary Lab		Reporting Limits	QA Lab	Reporting Limits
	177WA	179WA		178WA	
Aluminum	2900 B	3100 B	100	2300	200
Antimony	ND	ND	5	ND	100
Arsenic	2 J	3 J	5	ND	5
Barium	85	88	5	70	20
Beryllium	ND	ND	5	ND	20
Cadmium	ND	ND	5	ND	20
Calcium	61,800	58,000	50	57,000	500
Chromium	8 J	6 J	10	ND	20
Cobalt	ND	ND	10	ND	50
Copper	7 J	6 J	10	ND	20
Iron	3350	3340	20	3400	100
Lead	2 J	2	2	ND	2
Magnesium	14,400	13,700	10	15,000	500
Manganese	120	115	5	120	20
Mercury	ND	ND	0.5	ND	0.2
Nickel	ND	ND	30	ND	50
Potassium	3000	3000	1000	2000	200
Selenium	ND	ND	5	ND	5
Silver	ND	ND	5	ND	20
Sodium	18,300	17,800	100	19,000	500
Thallium	ND	ND	2	ND	200
Vanadium	ND	ND	10	ND	50
Zinc	8 J	9 J	10	ND	50

SUMMARY: The field blind duplicate and QA data agree within a factor of three with each other or their reporting limits and are comparable. Estimated data (results which have been quantified below the reporting limit) should not be considered significant for purpose of data comparison. The primary data of aluminum are acceptable as the results are greater than five times the level in the associated method blank.