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AMW-18 Area
Investigation Report
Boomsnub/Airco Superfund Site
Hazel Dell, Washington

Prepared for

Linde, Inc.
575 Mountain Avenue
Murray Hill, New Jersey 07974

Prepared by

EA Engineering, Science, and Technology, Inc.
12011 NE 1st Street, Suite 100
Bellevue, Washington 98005

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LIST OF ACRONYMS AND ABBREVIATIONS

1,1,1-TCA	1,1,1-trichloroethane
1,1-DCE	1,1-dichloroethene
bgs	below ground surface
CAS	Columbia Analytical Services, Inc.
CFC-11	trichlorofluoromethane
DPT	direct push technology
EA	EA Engineering, Science, and Technology, Inc.
Ecology	Washington Department of Ecology
EPA	U.S. Environmental Protection Agency
ft	feet
IDW	investigation-derived waste
J	estimated value
Linde	Linde, Inc. (formerly BOC Gases)
MDL	method detection limit
MRL	method reporting limit
OU	Operable Unit
PCE	tetrachloroethene
PDB	passive diffusion bag
Permalume	Permalume Plastics Corporation
QASP	Quality Assurance and Sampling Plan
Site	Boomsnub/Airco Superfund Site
TCE	trichloroethene
VOC	volatile organic compound
µg/L	micrograms per liter

EXECUTIVE SUMMARY

Groundwater sampling activities were performed to investigate an increase in contaminant concentrations recently detected in a plume boundary monitoring well (AMW-18) at the Boomsnub/Airco Superfund Site (Site), in Hazel Dell, Washington. The primary constituents of concern at the Site are trichloroethene (TCE) and hexavalent chromium in two overlapping plumes of contaminated groundwater within the alluvial aquifer (Operable Unit [OU]-3). Groundwater within the alluvial aquifer flows to the west-northwest in the Site area. Impacted groundwater migrates downward in the aquifer with increasing distance from the source areas.

Site monitoring data indicate that the plumes have shown a significant decrease in concentrations, as well as a decrease in size, since 1995. However, TCE concentrations have recently increased in monitoring well AMW-18, located at the northern boundary of the OU-3 plume. The main objectives of this investigation were to evaluate the depth and concentration of TCE in groundwater in the well AMW-18 area, and to determine possible source areas for the TCE detected in this well.

Field activities included the collection of groundwater samples using direct push techniques and passive diffusion bag samplers. Seven Geoprobe borings were advanced near and upgradient of well AMW-18. Depth-specific groundwater samples were collected from the borings. Groundwater samples also were collected from selected Site monitoring wells. Samples were analyzed for volatile organic compounds (VOCs).

TCE was detected in groundwater from all seven borings at varying depths and concentrations. The highest TCE concentration was detected in boring GP2 (north of well AMW-18) at 95 feet below ground surface. This depth is similar to the screened interval in well AMW-18. The depth of TCE contamination decreased going upgradient. TCE concentrations also decreased going upgradient. The two furthest upgradient borings contained minor concentrations of TCE (near the cleanup level) in groundwater near the water table.

The source of the TCE present in groundwater samples collected in the vicinity of well AMW-18 is not the same as for the OU-3 VOC plume. In addition to being geographically distinct, a VOC marker used for OU-3 (trichlorofluoromethane or CFC-11) was not detected in groundwater samples collected from the AMW-18 area. The source of the TCE groundwater contamination in the vicinity of well AMW-18 has not been identified. However, based on the existing data, this contamination is not the result of actions by Linde or its predecessors.

Recommendations include more frequent sampling of selected Site monitoring wells to assist in monitoring the TCE contamination in the vicinity of well AMW-18.

1. INTRODUCTION

1.1 Background

On behalf of Linde, Inc. (Linde), EA Engineering, Science, and Technology (EA) has prepared this report on the results of groundwater investigation activities performed in the well AMW-18 area at the Boomsnub/Airco Superfund Site (Site). Participants in the investigations and remedial activities at the Site are the U.S. Environmental Protection Agency (EPA) and Linde, formerly BOC Gases. Work at the Site is conducted under a Consent Decree between the EPA and Linde (Docket Number C07-5163FDB), entered into on 29 June 2007.

The Site includes two facilities, the Linde property and the Boomsnub property, in Hazel Dell, Washington, just north of the city limits of Vancouver, Washington (Figure 1). Underlying the Site, within the alluvial aquifer, are two overlapping plumes of contaminated groundwater (trichloroethene [TCE] and hexavalent chromium [chromium]) extending approximately 4,000 feet (ft) in a west-northwest direction (Operable Unit [OU]-3). Underlying the alluvial aquifer and an aquitard is the Troutdale aquifer, which is used regionally for drinking water.

A groundwater extraction and treatment system has been in operation at the Site since 1991. This system pumps groundwater from the alluvial aquifer and removes volatile organic compounds (VOCs) and chromium. Treated groundwater is discharged to an infiltration gallery located on the Linde property, upgradient of the plumes. The monitoring and extraction system layout is presented on Figure 2.

Site monitoring data indicate that the TCE and chromium plumes have shown a significant decrease in concentrations, as well as a decrease in size, since 1995 (EA 2008b). Figure 3 shows the approximate extent of TCE contamination in 1995 and in 2007. Recently, however, routine groundwater monitoring data have shown an unexpected significant increase in TCE concentrations in well AMW-18, located at the northern boundary of the TCE plume, just northwest of the intersection of NE 78th Street and NE St. Johns Road. Field activities documented in this report were performed to investigate the increase in TCE concentrations in that vicinity of AMW-18.

1.2 Site Characteristics

Brief descriptions of the major hydrogeologic units are provided below. A detailed description of the site geology can be found in the Groundwater Modeling Summary Report (EA 2004a). Additional information regarding the site geology is provided in the Additional Hydrogeologic Investigation Report (EA 2005).

1.2.1 Alluvial Aquifer

The majority of the groundwater impacted by TCE and chromium at the Site is present within the alluvial aquifer. The groundwater flow direction of the alluvial aquifer is well established, with

groundwater moving to the west-northwest. Impacted groundwater migrates downward in the aquifer with increasing distance from the source areas. It should be noted that water levels in a limited area of the alluvial aquifer increased in 2006, following installation and operation of the infiltration gallery upgradient of the source areas on Linde property. Use of the infiltration gallery also impacts shallow groundwater flow in that portion of the Site.

The upper portion of the alluvial aquifer consists of sand with varying amounts of silt. The silt content tends to increase somewhat with depth in this unit. The alluvial aquifer ranges in thickness from about 60 to 140 ft. A general thickening of the alluvial aquifer occurs to the west of the Boomsnub property, in a band trending generally northeast-southwest in the vicinity of NE St. Johns Road. This is commonly referred to as the "trough" area.

1.2.2 Silt Unit and Aquitard

A silt unit occurs at the base of the alluvial aquifer. This unit generally consists of 10 to 20 ft of silt and clayey silt that grade into the aquitard. The aquitard consists of clay and silty clay. The thickness of the aquitard varies across the Site from about 10 to 30 ft; however, in some areas, including portions of the trough area, this unit thins to less than 10 ft. The silt unit and aquitard serve as a major barrier to vertical groundwater flow between the alluvial aquifer and the underlying Troutdale aquifer.

1.2.3 Troutdale Formation

Just below the aquitard, the Upper Troutdale Formation consists of gravel and cobbles in a sandy, silty matrix. This portion of the unit is characterized by less permeable material with higher silt content than in the underlying Upper Troutdale aquifer.

The Upper Troutdale aquifer consists of gravel and cobbles in a sandy matrix with limited silt. This highly-permeable unit comprises the primary drinking water aquifer for the area. Groundwater flow in this aquifer is generally to the west-southwest. The nearest public supply well is located approximately one mile west of the source areas for the alluvial aquifer plumes.

1.3 Previous Investigations and Groundwater Monitoring Data

Several previous investigations and sampling programs have provided information relevant to the northern portion of the OU-3 plume and possible upgradient/offsite contaminant sources, including the former Permalume Plastics Corporation (Permalume) property. Information on these investigations is provided in the AMW-18 Area Investigation Work Plan (EA 2008a).

Table 1 provides a summary of historic TCE results for groundwater samples from well AMW-18 and additional monitoring wells in the vicinity and upgradient of that well. These data were obtained primarily from the Linde database which generally includes data from 1995 to the present. Well screen depths also are provided in the table. The following wells are included in Table 1:

- AMW-18 – This well is located near the northern boundary of the OU-3 plume. Historic TCE concentrations in this well were below the cleanup level of 5 micrograms per liter (µg/L) from 1995 through 2006. In October 2006, TCE increased to 5.1 µg/L. One year later, in October 2007, the TCE concentration had increased to 330 µg/L. In January and May 2008, the TCE concentration in this well was 460 µg/L.

- AMW-4A, AMW-5A, and AMW-9A – These three wells are shallow water table monitoring wells located on the Linde property, near the northern property boundary. Other than a low, estimated TCE concentration reported when the wells were sampled in 1995, TCE has never been detected in any of these wells.

- AMW-8A – This shallow water table well is located on the eastern boundary of the Linde property, upgradient of the OU-3 TCE source but downgradient of the former Permalume site. Historic TCE concentrations have been on a decreasing trend in this well since the initial concentration of 1,700 µg/L detected in 1992. Recent results indicate possible dilution from the groundwater treatment system infiltration gallery on the Linde property, which became operational in February 2006.

- MW-15E – This monitoring well is located generally cross-gradient of AMW-18, and closer to the OU-3 plume axis. Historic TCE concentrations have been on a decreasing trend in this well since the initial concentration of 1,090 µg/L detected in 1995. In January 2008, the TCE concentration in this well was still slightly higher than the cleanup level at 9.2 µg/L.

- AMW-17 – This monitoring well is located approximately 400 ft downgradient of well AMW-18. TCE concentrations in this well have declined continually since the initial concentration of 66.9 µg/L detected in 1995. The TCE concentrations in samples from this well have been below the cleanup level since 1999. Well AMW-17 is used as a boundary well for the northern perimeter of the OU-3 plume. This well has not yet shown impacts from TCE in the AMW-18 area.

- Permalume – This well is located on the former Permalume property, immediately east (upgradient) of the Linde facility. Historic TCE concentrations have been on a decreasing trend in this well.

The OU-3 VOC plume is characterized primarily by TCE. Other VOCs frequently detected include tetrachloroethene (PCE); trichlorofluoromethane (CFC-11 or Freon 11); 1,1,1-trichloroethane (1,1,1-TCA); 1,1-dichloroethene (1,1-DCE); and cis-1,2-dichloroethene. CFC-11 is not typically associated with TCE, although it has been detected throughout the OU-3 plume. The Washington Department of Ecology (Ecology) has considered CFC-11 as a marker for VOCs from the Linde property.

1.4 AMW-18 Area Investigation Overview

In May 2008, groundwater sampling activities were performed to investigate the increase in the TCE concentration recently detected in groundwater from monitoring well AWM-18. Groundwater samples were collected from selected existing monitoring wells in the area of concern, and from soil borings advanced into the saturated zone using direct push technology (DPT) in seven locations where wells were not available. The main objectives of the investigation were as follows:

- Evaluate the depth and concentration of TCE in groundwater in the vicinity of well AMW-18.
- Evaluate possible source areas for the TCE detected in well AMW-18.

The investigation approach and rationale, including a discussion of previous investigations in and upgradient of the well AMW-18 area, were provided in the AMW-18 Area Investigation Work Plan (EA 2008a), which was approved by the EPA on 15 April 2008.

The remainder of this document is organized as follows: a summary of the field activities is provided in Section 2; analytical results for groundwater samples are discussed in Section 3; a discussion of the findings and recommendations is provided in Section 4; and a list of references is provided in Section 5. Copies of the laboratory reports are provided in Appendix A.

2. FIELD ACTIVITIES

Field activities were performed in accordance with the Investigation Work Plan (EA 2008a), as well as applicable requirements of the Site Quality Assurance and Sampling Plan (QASP; EA 2004b) and Health and Safety Plan (EA 2007).

Field activities included the following:

- Collecting depth-specific groundwater samples from seven soil borings (GP1, GP2, GP4, GP5, GP6, GP7, and GP8) using DPT (see Figure 4).
- Collecting groundwater samples from monitoring wells AMW-8A and AMW-18 using passive diffusion bag (PDB) samplers. Although not included in the Work Plan, a groundwater sample was also collected from monitoring well EC-1 using a submersible pump (see Section 2.2).
- Handling investigation-derived waste (IDW).

Exceptions to the planned activities are described in Section 2.1 and included the following:

- No drilling or sampling was performed at planned boring location number 3, as property access could not be obtained.
- The location of boring GP7 was shifted slightly northwest onto the Linde property.
- No 95 ft below ground surface (bgs) sample was collected from boring GP7.

Project activities were performed on several property parcels, as indicated in the following table.

Boring Number	Parcel Number	Property Owner
1, 2	144519-000	Tapper, Richard & Kay
4	099620-010	Heuvel Enterprises LLC
5, 6	144274-000, 604349-000, 610872-000	Clark County
7	099600-000	Linde, Inc.
8	156261-000	Thomas L. Brown Trust (Columbia Vet)
--	144529-000, 144495-000 [a]	Kolosford Parks LLC [a]
--	156786-000 [b]	Morgan Smith (former Permalume site) [b]

NOTES:
[a] Sampling on this parcel was planned; however, access was not obtained. See Section 2.1.
[b] This location was moved to the Linde property. See Section 2.1.

Laboratory analyses for this project were performed by Columbia Analytical Services (CAS) in Kelso, Washington.

2.1 Direct Push Groundwater Sampling

The DPT groundwater sampling took place from 13 to 21 May 2008. The sampling was performed using a Geoprobe® 6600 rig operated by Boart Longyear, Inc., of Milton, Washington, under the direction of EA field personnel. Samples were collected from seven locations near and upgradient of well AMW-18. Figure 4 shows the sampling locations in relation to well AMW-18.

Two planned DPT boring locations could not be accessed. Work was not performed at the location identified as number 3 in the Investigation Work Plan (on parcels 144529-000 and 144495-000, Kolosford Parks LLC). After several contacts and discussions, an access agreement could not be reached with the property owner in time for the scheduled performance of the field work; therefore, no boring was drilled in this area. The location identified as number 7 in the Investigation Work Plan (on parcel 156786-000, Morgan Smith [former Permalume site]), could not be accessed because the property owner could not be contacted. Mail addressed to the address of record, as well as an address on file with the Department of Ecology, was returned as undeliverable. Phone calls were not returned. Instead of sampling in the planned location, boring number 7 was shifted slightly to the northwest, and was completed in the northeast corner of the Linde property.

Depth-specific groundwater samples were collected in each of the seven sampling locations to evaluate the vertical and horizontal extent of TCE contamination. A Geoprobe SP-15-type sampler was used. The 4-ft long sampler was driven to the desired sample depth. The tool string was then pulled back approximately 4 ft to expose the screen. Because the bottom of the sampler was at the designated sample depth, the actual sample interval extended 4 ft upward (i.e., a sample designated at 45 ft bgs was actually collected from the 41 to 45 ft bgs interval).

Groundwater samples were collected using new polyethylene tubing with a stainless steel check valve, installed inside the tool string. Samples were collected for analysis of VOCs by oscillating the tubing up and down. The tubing was then withdrawn from the borehole and the samples were collected by draining water from the base of the tubing into the VOC sample vials.

Geoprobe rods were decontaminated by pressure washing between boring locations. The stainless-steel sampler was decontaminated between samples. Equipment rinsate blank samples were collected by pouring carbon-free, deionized water through the decontaminated sampler into sampling vials. Rinsate blank sample number 1 was collected after sampling at boring GP2 and before sampling at boring GP4. Rinsate blank sample number 2 was collected after sampling at boring GP4 and before sampling at boring GP7. Rinsate sample number 3 was collected after sampling at boring GP8 and before sampling at boring GP6. Additionally, three trip blanks were submitted for analysis; one with each cooler delivered to the laboratory.

Groundwater samples, equipment rinsate blanks, and trip blanks were analyzed for VOCs by EPA Method 8260B. Groundwater samples were collected from pre-selected depths at each boring location. In general, the samples were collected at 15-ft intervals from the water table, or

slightly below, to the top of the silt layer. Sampling continued to the depth indicated in the Investigation Work Plan (the approximate base of the alluvial aquifer). Sample depths are shown in Table 2. With the exception of boring location number 3, only one planned sample was not collected. Water was not produced in boring GP7 at 95 ft bgs. After waiting for one hour, the screen was pulled and inspected. The screen was intact but not wet. The rods and sampler were driven down to the next sampling depth and sampling resumed.

Each Geoprobe boring location was abandoned by filling the borehole with bentonite grout from the bottom of the hole to the surface. A Global Positioning System receiver was used to record the boring coordinates.

2.2 Monitoring Well Groundwater Sampling

Groundwater samples were collected from monitoring wells AMW-8A, AMW-18, and EC-1 on 7 May 2008, in conjunction with the Spring semiannual sampling event. Samples were collected from wells AMW-8A and AMW-18 using PDB samplers. PDBs in both wells were deployed near the bottom of the well screen. In well AMW-8A, the PDB was deployed from 32.1 to 34.1 ft bgs. In well AMW-18, the PDB was deployed from 99.5 to 101.5 ft bgs. The PDB samplers had been deployed in both wells during the January 2008 quarterly sampling event. Well EC-1 was sampled using a submersible pump. Samples were collected for VOC analysis in accordance with the procedures described in the Reference QASP (EA 2004b).

Well EC-1 was installed by Ecology in 1997. This well is located southeast of well AMW-18, across the intersection of NE St. Johns Road and NE 78th Street. Sampling of EC-1 was not included in the approved Investigation Work Plan; however, a sample was collected from the well because it is located in the AMW-18 investigation area and because it had not been sampled since 1997.

2.3 Investigation-Derived Waste Handling

IDW for this investigation included decontamination fluids and groundwater removed during borehole sampling. IDW was contained in 55-gal drums and transported back to the Boomsnub treatment facility for treatment and discharge.

3. GROUNDWATER ANALYTICAL RESULTS

3.1 Direct Push Groundwater Samples

Analytical results for VOCs in DPT groundwater samples are summarized in Table 2. TCE was detected in one or more samples from each boring. Detected TCE concentrations ranged from 0.070 µg/L to 92 µg/L. The highest TCE concentration was detected in a sample collected from boring GP2 at 95 ft bgs. Elevated TCE concentrations (exceeding the cleanup level of 5 µg/L) were detected at the following locations and depths;

- GP1 at 80 ft bgs (70 µg/L)
- GP2 at 95 ft bgs (92 µg/L) and 110 ft bgs (50 µg/L)
- GP5 at 65 ft bgs (5.1 µg/L) and 80 ft bgs (78 µg/L)
- GP8 at 35 ft bgs (8.0 µg/L).

Other VOCs detected included PCE; 1,1,1-TCA; 1,1-DCE; bromodichloromethane; and CFC-11. However, only TCE was detected at concentrations exceeding the cleanup level.

PCE was detected in nine groundwater samples from five borings (GP1, GP2, GP4, GP5, and GP6). All of these results were less than the method reporting limit (MRL) but greater than or equal to the method detection limit (MDL); therefore, the results were flagged "J" (estimated) by the laboratory. The highest concentration of PCE detected was 0.43 µg/L, well below the cleanup level of 5 µg/L.

1,1,1-TCA was detected in 16 groundwater samples from six borings (all except GP7). Detected concentrations ranged from 0.05 J to 2.6 µg/L. All results were well below the cleanup level of 200 µg/L.

1,1-DCE was detected in five groundwater samples from three borings (GP1, GP2, and GP5). Detected concentrations ranged from 0.11 J to 0.73 µg/L. All results were below the cleanup level of 1 µg/L.

Bromodichloromethane was detected in five groundwater samples from three borings (GP4, GP5, and GP8). Detected concentrations ranged from 0.040 J to 0.060 J µg/L. All results were well below the cleanup level of 1 µg/L.

CFC-11 was detected in one sample from boring GP4. The reported result, 0.11 J µg/L, was well below the cleanup level of 2,400 µg/L.

QC samples for this project included field duplicates, trip blanks, and equipment rinsates blanks. A quality assurance review of the data was performed and included a comparison of primary and duplicate sample analyses and a review of laboratory reporting limits, sample holding times,

chain-of-custody paperwork, and analytical results for blanks. Table 2 includes the higher of the primary and duplicate sample results, where applicable.

Methylene chloride was detected in all three rinsate blanks at low concentrations and 1,2-dichloroethane was detected in rinsate blank number 3 at 0.10 J µg/L. Neither of these compounds were detected in any field samples; therefore, no data was qualified. TCE was detected in trip blank number 1 at a concentration of 0.08 J µg/L. This sample was associated with all samples from borings GP1, GP2, and GP4 (lab sample numbers 0820002 through 0820020). Detectable results that are less than five times the concentration reported in the associated trip blank may be false positives. No data qualifiers were required based on this criterion. No other VOCs were detected in the trip blanks.

3.2 Monitoring Well Groundwater Samples

Analytical results for VOCs in monitoring well groundwater samples are summarized in Table 2. TCE was detected at a concentration of 1.4 µg/L in well AMW-8A; no other VOCs were detected in that sample. The TCE result for well AMW-8A was identical to that last obtained in January 2008.

In well AMW-18, TCE was detected at a concentration of 460 µg/L. Additional VOCs detected in AMW-18 included PCE (2.3 µg/L), 1,1,1-TCA (6.0 µg/L), and 1,1-DCE (2.4 µg/L). The result for 1,1-DCE exceeds the cleanup level of 1 µg/L. The TCE result for well AMW-18 was identical to that last obtained in January 2008. PCE increased slightly and 1,1,1-TCA and 1,1-DCE decreased slightly compared to the January 2008 results.

In well EC-1, TCE was detected at a concentration of at 0.21 J µg/L and PCE was detected at a concentration of 0.23 J µg/L. No other VOCs were detected in this sample. This well was sampled last during 1997. At that time, the TCE concentration was 0.5 µg/L and PCE was below the detection limit of 0.4 µg/L.

3.3 Summary of TCE Results

The DPT groundwater data are summarized in three schematic cross sections presented on Figures 5 through 7. The locations of the cross sections are indicated on Figure 4. Figure 5 shows cross section A-A' with the concentrations of detected VOCs indicated for each sampled depth in borings GP1 and GP2, along with well AMW-18. Figure 6 shows cross section B-B' with the concentrations of detected VOCs indicated for each sampled depth in borings GP4, GP5, and GP6. Figure 7 shows cross section C-C' with the concentrations of detected VOCs indicated for each sampled depth in borings GP7 and GP8, along with well AMW-8A. VOC concentrations exceeding the cleanup level are presented in red.

TCE concentrations detected in DPT groundwater samples and in nearby monitoring wells are shown on Figure 8. The TCE concentrations shown on the figure for the DPT borings are the highest detected at that respective location. TCE concentrations used for the monitoring wells are the most recent available; dates for these results are provided in Table 3. Also provided in

Table 3 are the well screen depths and the TCE concentration trend for each of the listed wells. For several of the wells, all results have been below the MRL. For the remaining wells, with the exception of AMW-18, the TCE concentrations have been decreasing over time.

4. DISCUSSION AND RECOMMENDATIONS

Generally, groundwater moves to the west-northwest in the Boomsnub/Airco Superfund Site area. Groundwater samples from the two furthest upgradient borings advanced during this investigation (GP7 and GP8) contained minor concentrations of TCE (near the cleanup level). The investigation results indicate TCE concentrations increased in downgradient groundwater samples.

In each boring location sampled, the depth of the highest detected TCE concentration was bracketed by lower concentrations, indicating that the most impacted depth interval was identified. In the easternmost borings, and in well AMW-8A, TCE was detected only near the water table at about 30 to 35 ft bgs. In the central borings, TCE occurred primarily at depths of approximately 60 to 80 ft bgs. In the westernmost borings, and in well AMW-18, TCE occurred primarily at depths of approximately 75 to 110 ft bgs. TCE impacted increasingly deeper intervals going from east to west (upgradient to downgradient). This is consistent with the contaminant distribution in the OU-3 groundwater plume.

Results of groundwater samples from borings GP1 and GP2, located south and north of well AMW-18, indicate that the highest TCE concentrations are immediately around well AMW-18, or near the center of cross section A-A' (Figure 5). Results of samples from the three borings located near the center of the investigation area (GP4, GP5, and GP6) indicate that the most impacted area is near the center of cross section B-B' (Figure 6).

The source of the TCE and other VOCs present in the groundwater samples from monitoring well AMW-18 is not the same as for the OU-3 VOC plume. In addition to being geographically distinct, the lack of CFC-11 indicates a separate source. CFC-11 has commonly been detected in groundwater samples from OU-3 and was used by Ecology to identify VOCs from the Linde source. This compound is not present in groundwater samples containing TCE that were collected in the well AMW-18 area. CFC-11 was present at an estimated concentration below the MRL in one groundwater sample collected from boring GP4. The location of this sample approximates the northern edge of the OU-3 TCE plume in 1995 (see Figure 3).

The source of the TCE groundwater contamination in the vicinity of well AMW-18 has not been identified. However, based on the existing data, this contamination is not the result of actions by Linde or its predecessors.

RECOMMENDATIONS

The following well sampling frequencies are recommended to assist in monitoring the TCE contamination in the vicinity of well AMW-18:

Well ID	Current Sampling Frequency	Recommended Sampling Frequency	Rationale
AMW-17	Annual	Quarterly *	Monitor arrival of elevated TCE.
AMW-18	Quarterly	Quarterly *	Monitor elevated TCE concentrations.
MW-15E	Biennial	Semiannual	Monitor possible arrival of elevated TCE.
NOTE: * Quarterly sampling until May 2009, then semiannual.			

5. REFERENCES

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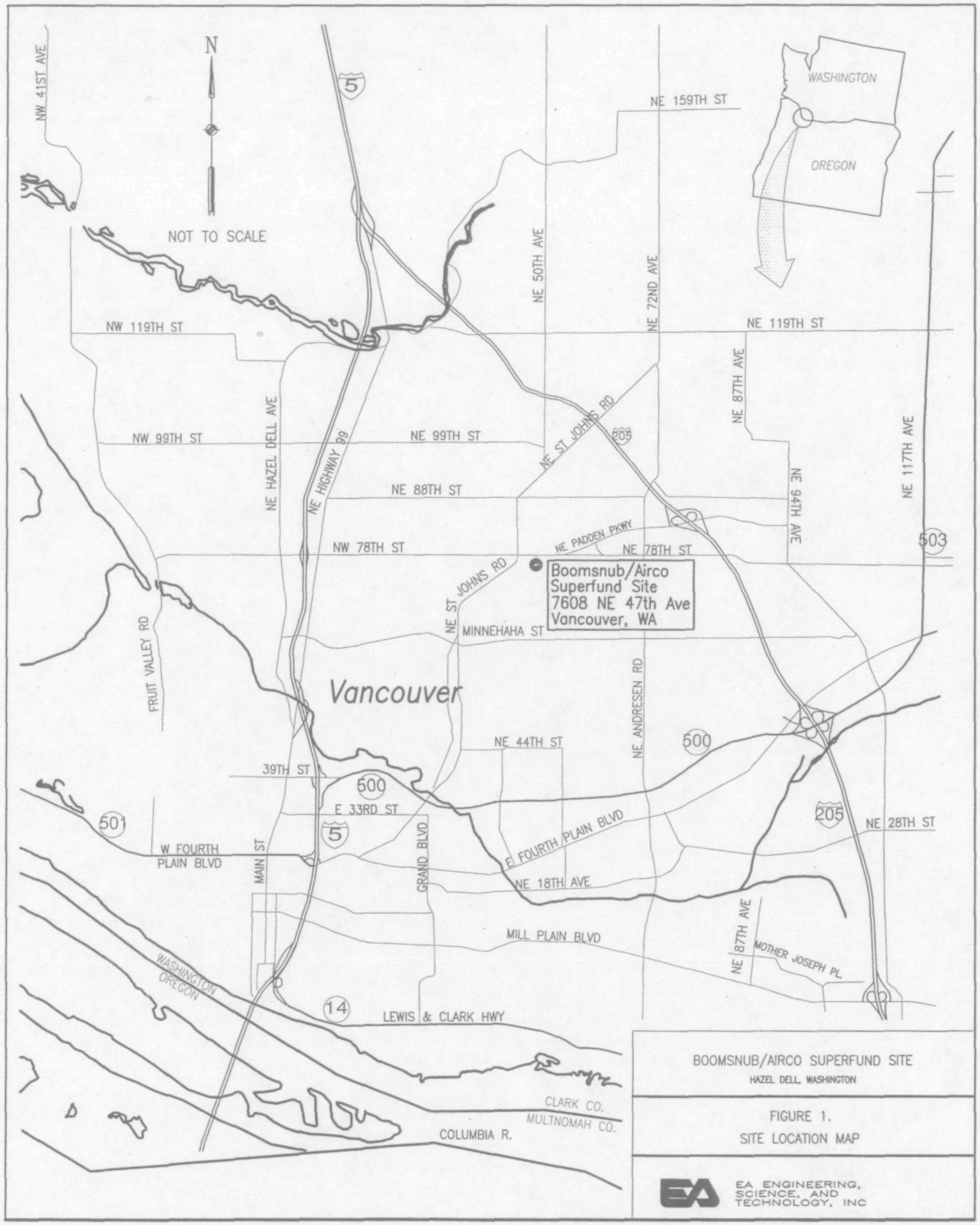
Figures

Figures



BOOMSNUB/AIRCO SUPERFUND SITE
HAZEL DELL, WASHINGTON

FIGURE 1.
SITE LOCATION MAP

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC

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LEGEND

- MW-17E — GROUNDWATER MONITORING WELL
- MW-10A — GROUNDWATER EXTRACTION WELL
- MW-3A, 3B — MULTIPLE WELLS IN PROXIMITY OR COMPLETED AS NESTED SETS
- GWSW-1 — GROUNDWATER SUPPLY WELL
- WELL SCREENED IN THE TROUTDALE AQUIFER
- EC1 — DEPARTMENT OF ECOLOGY WELL LOCATION
- EXTRACTION SYSTEM FORCEMAIN

N

200 100 0 200 400
GRAPHIC SCALE IN FEET

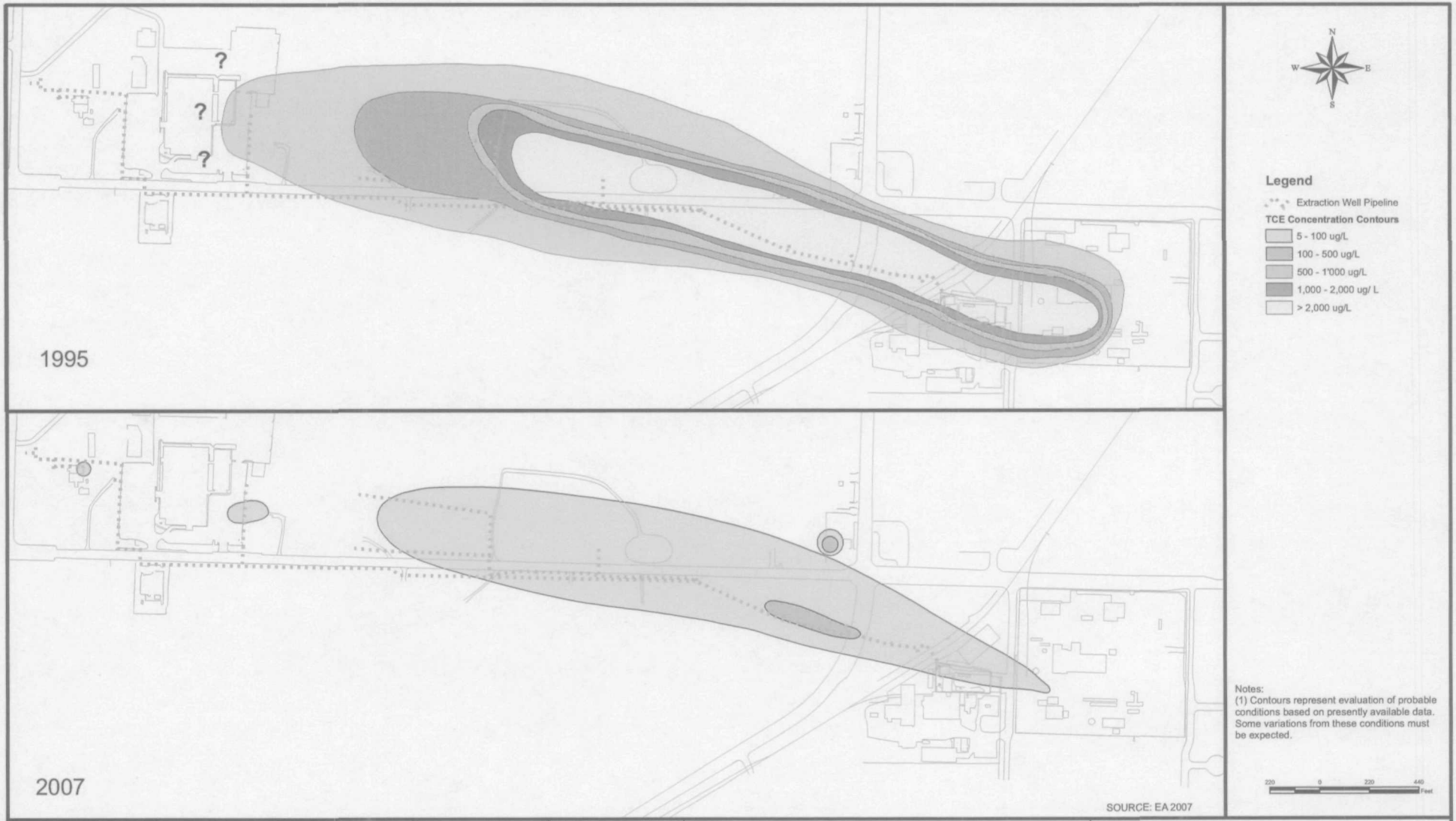
NOTE: MONITORING WELL LOCATIONS ARE APPROXIMATE.

BOOMSNUB/AIRCO SUPERFUND SITE
HAZEL DELL, WASHINGTON

FIGURE 2.
MONITORING WELL AND EXTRACTION SYSTEM LAYOUT

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC

F:\Projects\L14495.11 New Plume Investigation\Report\Figures\FIG 2 Site Map.dwg, 7/8/2008 11:30:48 AM, lwood



EA Engineering, Science, and Technology, Inc.	PROJECT MGR: CMB	DESIGNED BY: BSM	DATE: JANUARY 2008	FILE No.: GIS\BOC\BOCGIS\ARCGIS\MXD\TCE_FALL07_F3.MXD	BOOMSNUB/AIRCO SUPERFUND SITE HAZEL DELL, WASHINGTON
	CHECKED BY: GAH	DRAWN BY: WCM	PROJECT No.: 14495.05	SCALE: AS SHOWN	

FIGURE 3
TCE PLUME MAP
1995 vs. 2007

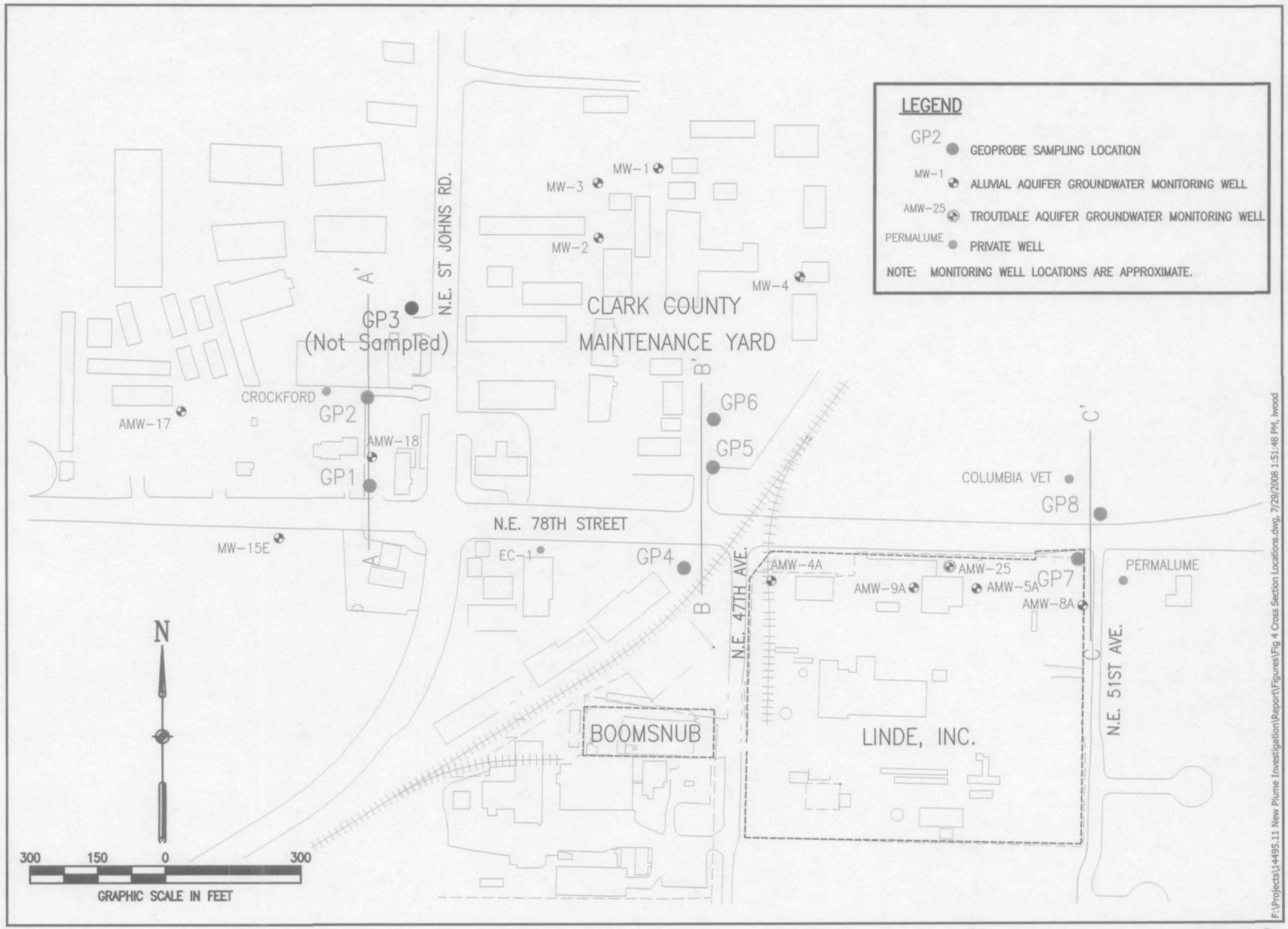


Figure 4. Geoprobe Boring and Cross Section Locations.

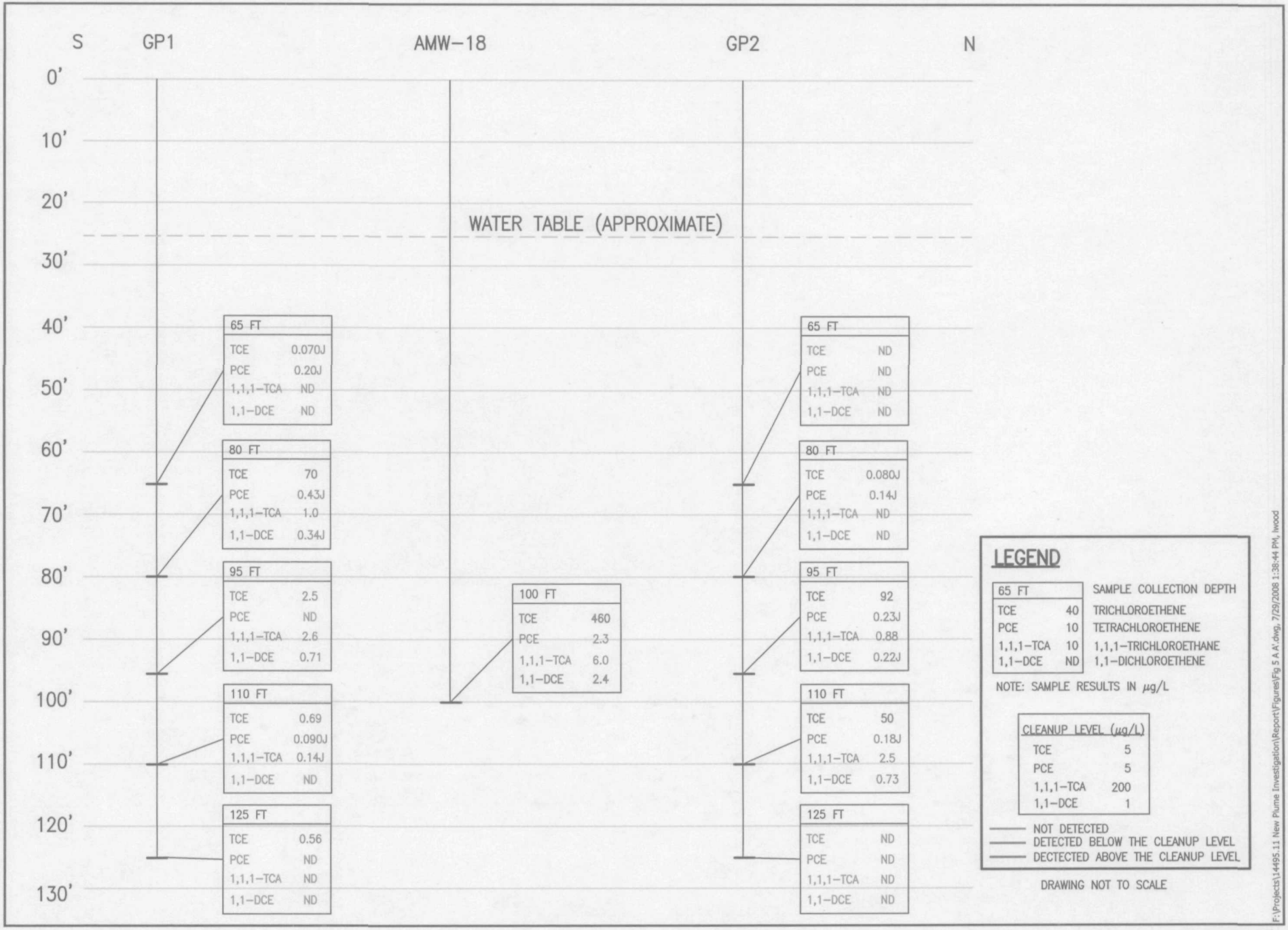


Figure 5. Schematic Cross Section Showing the Distribution of VOCs in Groundwater Samples – Section A–A'.

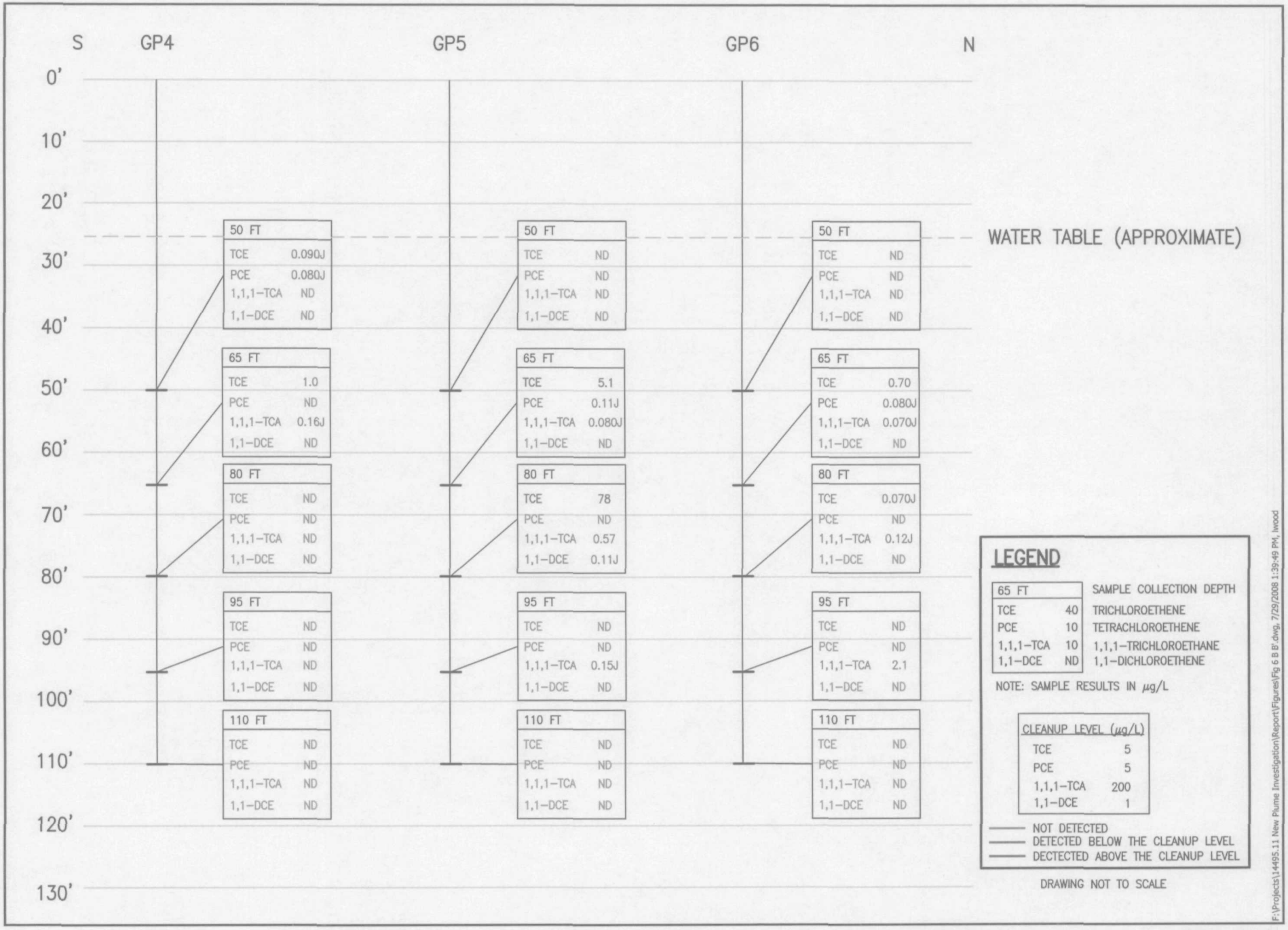


Figure 6. Schematic Cross Section Showing the Distribution of VOCs in Groundwater Samples – Section B–B'.

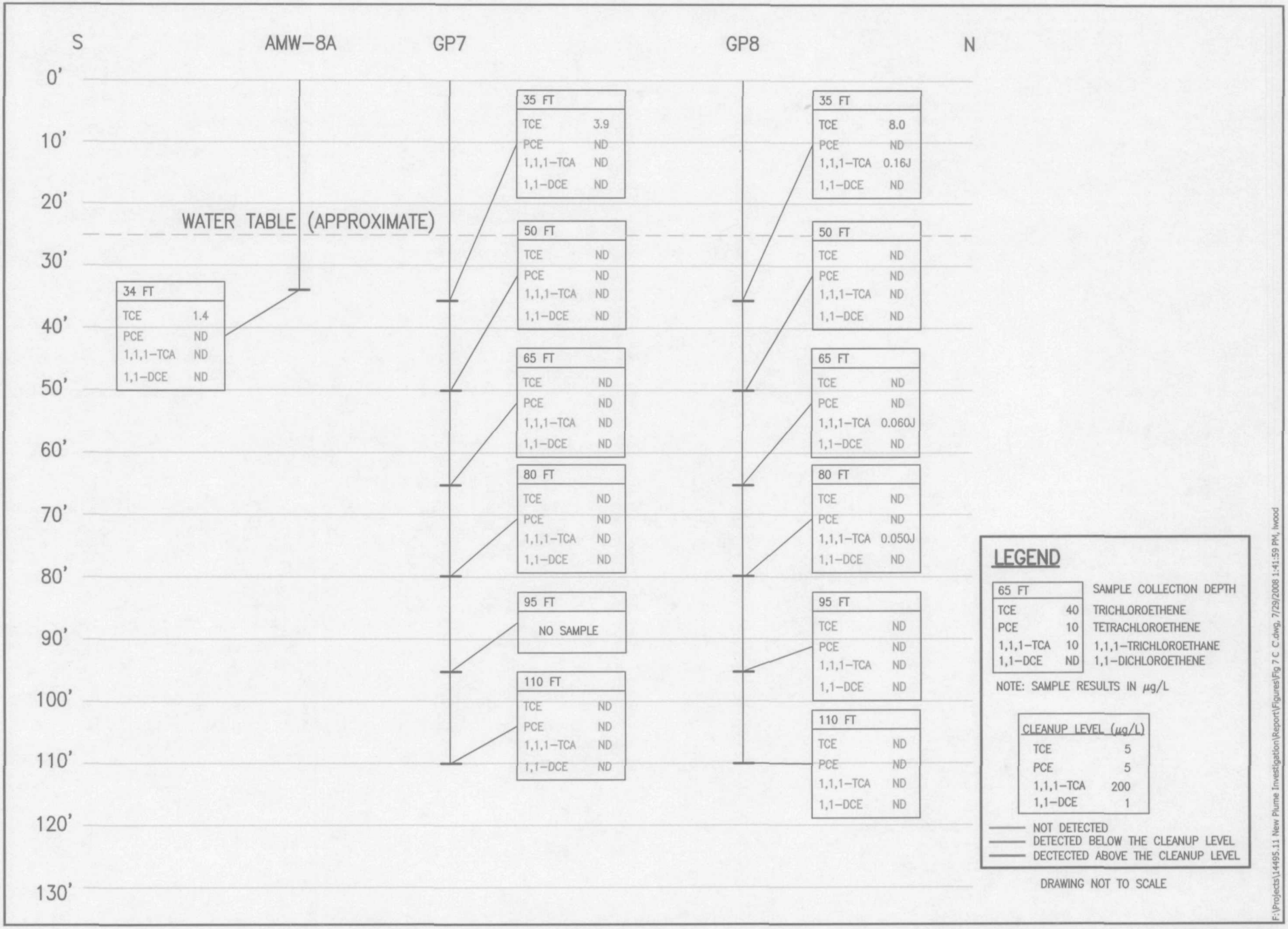


Figure 7. Schematic Cross Section Showing the Distribution of VOCs in Groundwater Samples – Section C–C'.

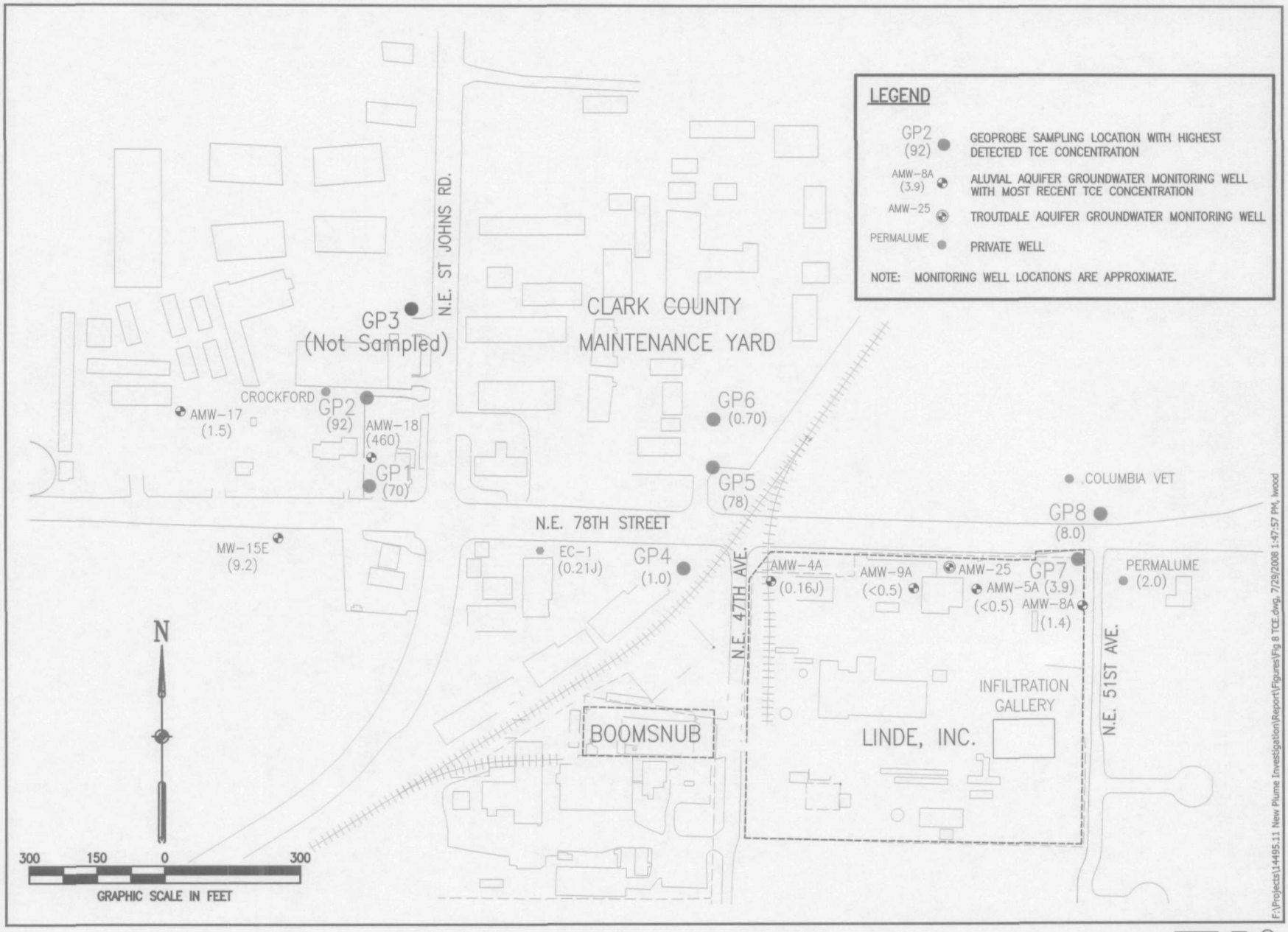


Figure 8. TCE Concentrations in Groundwater.

Tables

Tables

Table 1. Historical TCE Results for Selected Monitoring Wells (in ug/L).

	Well Number							
Date Sampled	AMW-18	AMW-4A	AMW-5A	AMW-8A	AMW-9A	MW-15E	AMW-17	Permalume
?-92	--	--	--	**1,700**	--	--	--	--
Mar-93	--	--	--	--	--	--	--	**130** [a]
Apr-95	0.73 J	0.4 J	0.43 J	**692**	0.57 J	**1090**	**66.9**	--
Oct-95	0.3 J	1 U	1 U	**570**	1 U	**597**	**42.5**	**76.9**
May-96	1 U	--	--	**128**	--	--	**39.6**	--
Oct-96	0.31 J	--	--	**239**	--	--	**20.5**	--
May-97	0.43 J	2 U	--	**226**	--	**1100**	**17.3**	--
Oct. 97	0.3 U	0.3 U	0.3 U	**100**	0.3 U	**450**	**12**	--
May-98	0.5 U	--	--	**65**	--	**170**	**7.0**	--
Oct-98	--	--	--	**100**	--	**50**	**8.0**	--
May-99	--	--	--	**41**	--	**59**	**5.0**	--
Oct-99	--	--	--	**150** J	--	**34**	3.4	--
May-00	--	--	--	**63**	--	--	--	--
Oct-00	--	--	--	**92**	--	--	--	--
May-01	--	--	--	**81**	--	--	--	--
Oct-01	1.1	--	--	**68**	--	**27**	2.7	--
May-02	--	0.5 U	--	**79**	--	--	--	**5.7** [b]
Oct-02	1.1	0.5 U	--	**38**	--	**21**	2.3	--
May-03	--	0.5 U	--	**59** D	--	--	--	ND [c]
Oct-03	0.95	0.5 U	--	**27**	--	--	2.2	**16.4** [d]
May-04	--	0.5 U	--	--	--	--	--	--
Oct-04	0.64	0.5 U	--	**40**	--	**17**	1.8	--
May-05	--	--	0.5 U	--	0.5 U	**12**	--	2.03 [e]
Oct-05	0.62	--	--	--	--	--	1.9	--
May-06	--	--	--	4.7	--	--	--	--
Oct-06	**5.1**	--	--	3	--	--	1.5	--
Oct-07	**330** D	--	--	1.4	--	--	1.5	--
Dec-07	**410** D	--	--	--	--	--	--	--
Jan-08	**460** D [f]	0.16 J	0.5 U	1.4	0.5 U	**9.2**	--	--
May-08	**460** D	--	--	1.4	--	--	--	--
Well Screen Depth	92.69 - 102.69	23.9 - 33.9	24.5 - 34.5	24.5 - 34.5	24.5 - 34.5	94.13 - 104.13	81 - 91	?

NOTES:

BOLD results exceed the cleanup level of 5.0 ug/L.

-- = Not sampled.

[a] = Sample collected on 10 March 1993 by the Department of Health.

[b] = Sample collected in April 2002 by CEC.

[c] = Not Detected; sample collected on 21 January 2003 by CEC.

[d] = Sample collected on 9 July 2003 by CEC.

[e] = Sample collected in May 2005 by CEC.

[f] = Two samples were collected using PDBs in January 2008 - results were 430 ug/L for the shallower sample and 460 ug/L for the deeper sample.

CEC = Coles Environmental Consulting, Inc.

D = The reported result is from a dilution.

J = The result is an estimated concentration that is less than the Method Reporting Limit but greater than or equal to the Method Detection Limit.

U = Analyte not detected above the specified reporting limit.

Table 2. Groundwater Sample Analytical Results (in ug/L)

Sample Name (Depth in ft)	Lab ID	Sample Date	Sample Time	TCE	PCE	1,1,1-TCA	1,1-DCE	Bromo-dichloro-methane	CFC-11
Geoprobe Borings									
GP1 - 65'	0820002	5/13/2008	9:15	0.070 J	0.20 J	0.50 U	0.50 U	0.50 U	0.50 U
GP1 - 80'	0820003	5/13/2008	11:30	**70 D**	0.43 J	1.0	0.34 J	0.50 U	0.50 U
GP1 - 95'	0820004	5/13/2008	12:30	2.5	0.50 U	2.6	0.71	0.50 U	0.50 U
GP1 - 110'	0820006	5/13/2008	15:10	0.69	0.090 J	0.14 J	0.50 U	0.50 U	0.50 U
GP1 - 125'	0820007	5/13/2008	16:50	0.56	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP2 - 65'	0820008	5/14/2008	9:00	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP2 - 80'	0820009	5/14/2008	9:55	0.080 J	0.14 J	0.50 U	0.50 U	0.50 U	0.50 U
GP2 - 95'	0820010	5/14/2008	11:10	**92 D**	0.23 J	0.88	0.22 J	0.50 U	0.50 U
GP2 - 110'	0820011	5/14/2008	12:20	**50**	0.18 J	2.5	0.73	0.50 U	0.50 U
GP2 -125'	0820012	5/14/2008	16:10	0.50 U	0.50 U	0.060 J	0.50 U	0.50 U	0.50 U
GP4 - 50'	0820014	5/15/2008	8:50	0.090 J	0.080 J	0.50 U	0.50 U	0.050 J	0.50 U
GP4 - 65'	0820015	5/15/2008	9:30	1.0	0.50 U	0.16 J	0.50 U	0.50 U	0.11 J
GP4 - 80'	0820016	5/15/2008	10:30	0.50 U	0.50 U	0.50 U	0.50 U	0.050 J	0.50 U
GP4 - 95'	0820018	5/15/2008	12:00	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP4 - 110'	0820019	5/15/2008	13:15	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP5 - 50'	0821041	5/21/2008	8:50	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP5 - 65'	0821042	5/21/2008	9:25	**5.1**	0.11 J	0.080 J	0.50 U	0.060 J	0.50 U
GP5 - 80'	0821043	5/21/2008	10:15	**78 D**	0.50 U	0.57	0.11 J	0.040 J	0.50 U
GP5 - 95'	0821044	5/21/2008	11:10	0.50 U	0.50 U	0.15 J	0.50 U	0.50 U	0.50 U
GP5 - 110'	0821045	5/21/2008	12:20	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP6 - 50'	0821035	5/20/2008	8:55	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP6 - 65'	0821036	5/20/2008	9:30	0.70	0.080 J	0.070 J	0.50 U	0.50 U	0.50 U
GP6 - 80'	0821037	5/20/2008	10:20	0.070 J	0.50 U	0.12 J	0.50 U	0.50 U	0.50 U
GP6 - 95'	0821039	5/20/2008	11:40	0.50 U	0.50 U	2.1	0.50 U	0.50 U	0.50 U
GP6 - 110'	0821040	5/20/2008	13:00	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP7 - 35'	0820022	5/16/2008	8:50	3.9	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP7 - 50'	0820023	5/16/2008	9:20	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP7 - 65'	0820024	5/16/2008	10:00	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP7 - 80'	0820026	5/16/2008	11:11	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP7 - 110'	0820027	5/16/2008	14:44	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP8 - 35'	0821028	5/16/2008	8:40	**8.0**	0.50 U	0.16 J	0.50 U	0.50 U	0.50 U
GP8 - 50'	0821029	5/19/2008	9:10	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP8 - 65'	0821030	5/19/2008	10:00	0.50 U	0.50 U	0.060 J	0.50 U	0.040 J	0.50 U
GP8 - 80'	0821031	5/19/2008	10:45	0.50 U	0.50 U	0.050 J	0.50 U	0.50 U	0.50 U
GP8 - 95'	0821032	5/19/2008	11:45	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GP8 - 110'	0821033	5/19/2008	13:20	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Wells									
AMW-8A	0819041	5/7/2008	15:50	1.4	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
AMW-18	0819042	5/7/2008	17:00	**460 D**	2.3	6	**2.4**	0.50 U	0.50 U
EC-1	0819062	5/7/2008	11:45	0.21 J	0.23 J	0.50 U	0.50 U	0.50 U	0.50 U
Cleanup Level				5	5	200	1	1	2,400

Table 2. Groundwater Sample Analytical Results (in ug/L)

NOTES:

Only detected compounds are included in this table.
Bold results exceed the cleanup level.
1,1-DCE = 1,1-Dichloroethene.
1,1,1-TCA = 1,1,1-Trichloroethane.
CFC-11 = Trichlorofluoromethane.
D = The reported result is from a dilution.
ft = Feet.
J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.
NA = Not applicable.
PCE = Tetrachloroethene.
TCE = Trichloroethene.
U = The compound was analyzed for but was not detected at or above the method reporting limit/method detection limit.
ug/L = micrograms per liter.

Table 3. Recent TCE Concentrations in Selected Monitoring Wells

Well ID	Screened Interval (ft bgs)	Sample Date	TCE (in ug/L)	TCE Concentration Trend
AMW-4A	23.9 - 33.9	1/29/2008	0.16 J	All below MRL
AMW-5A	24.5 - 34.5	1/29/2008	0.5 U	All below MRL
AMW-8A	24.5 - 34.5	5/13/2008	1.4	Downward
AMW-9A	24.5 - 34.5	1/29/2008	0.5 U	All below MRL
AMW-17	81 - 91	10/4/2007	1.5	Downward
AMW-18	92.69 - 102.69	5/14/2008	**460 D**	Upward since 2006
EC-1	~60 - 70 [a]	5/14/2008	0.21 J	All below MRL
MW-15E	95.70 - 105.70	1/29/2008	**9.2**	Downward
Permalume	? - 40	5/?/05 [b]	2.0 [b]	Downward
Cleanup Level			5	

NOTES:

[a] The reported well screen depth is 66 to 76 ft bgs; however, the measured total well depth on 5/14/08 was 67.43 ft bgs.

[b] Sampled by Coles Environmental Consulting, Inc.

Bold results exceed the cleanup level.

D = The reported result is from a dilution.

ft bgs = feet below ground surface.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

MDL = method detection limit.

MRL = method reporting limit.

TCE = Trichloroethene.

U = The compound was analyzed for but was not detected at or above the MRL/MDL.

ug/L = micrograms per liter.

Appendix A

Laboratory Data

Sample Names and Laboratory Codes

Sample Name	Laboratory Code	Sample Date	Sample Time
Geoprobe Samples			
Trip Blank 1	0820001	5/13/2008	
GP1 - 65'	0820002	5/13/2008	9:15
GP1 - 80'	0820003	5/13/2008	11:30
GP1 - 95'	0820004	5/13/2008	12:30
GP1 - 110'	0820005	5/13/2008	15:00
GP1 - 110' duplicate	0820006	5/13/2008	15:10
GP1 - 125'	0820007	5/13/2008	16:50
GP2 - 65'	0820008	5/14/2008	9:00
GP2 - 80'	0820009	5/14/2008	9:55
GP2 - 95'	0820010	5/14/2008	11:10
GP2 - 110'	0820011	5/14/2008	12:20
GP2 -125'	0820012	5/14/2008	16:10
Rinsate 1	0820013	5/14/2008	18:30
GP4 - 50'	0820014	5/15/2008	8:50
GP4 - 65'	0820015	5/15/2008	9:30
GP4 - 80'	0820016	5/15/2008	10:30
GP4 - 80' duplicate	0820017	5/15/2008	10:40
GP4 - 95'	0820018	5/15/2008	12:00
GP4 - 110'	0820019	5/15/2008	13:15
Rinsate 2	0820020	5/15/2008	16:15
Trip Blank 2	0820021	5/16/2008	
GP7 - 35'	0820022	5/16/2008	8:50
GP7 - 50'	0820023	5/16/2008	9:20
GP7 - 65'	0820024	5/16/2008	10:00
GP7 - 65' duplicate	0820025	5/16/2008	10:10
GP7 - 80'	0820026	5/16/2008	11:11
GP7 - 110'	0820027	5/16/2008	14:44
GP8 - 35'	0821028	5/16/2008	8:40
GP8 - 50'	0821029	5/19/2008	9:10
GP8 - 65'	0821030	5/19/2008	10:00
GP8 - 90'	0821031	5/19/2008	10:45
GP8 - 95'	0821032	5/19/2008	11:45
GP8 - 110'	0821033	5/19/2008	13:20
Rinsate 3	0821034	5/20/2008	8:30
GP6 - 50'	0821035	5/20/2008	8:55
GP6 - 65'	0821036	5/20/2008	9:30
GP6 - 80'	0821037	5/20/2008	10:20
Trip Blank 3	0821038	5/20/2008	
GP6 - 95'	0821039	5/20/2008	11:40
GP6 - 110'	0821040	5/20/2008	13:00
GP5 - 50'	0821041	5/21/2008	8:50
GP5 - 65'	0821042	5/21/2008	9:25
GP5 - 80'	0821043	5/21/2008	10:15
GP5 - 95'	0821044	5/21/2008	11:10
GP5 - 110'	0821045	5/21/2008	12:20
Monitoring Well Samples - collected with January Quarterly Event			
AMW-8A	0819041	5/7/2008	15:50
AMW-18	0819042	5/7/2008	17:00
EC-1	0819062	5/7/2008	11:45

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SR#: 08 09278

PAGE 1 OF 2 COC #

PROJECT NAME: Linde's AMW-18 Investigation
PROJECT NUMBER: 14495.11
PROJECT MANAGER: Mark Blinstrub
COMPANY/ADDRESS: EA Engineering, 12011 NE 1st Street, Suite 100
CITY/STATE/ZIP: Bellevue, WA 98005
E-MAIL ADDRESS: mblinstrub@eaestl.com
PHONE #: 425-451-7400 FAX#: 425-451-7800
SAMPLER'S SIGNATURE: Mark Blinstrub

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260 (B)	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8021☐ BTEX☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐ 8141A☐ 8151A☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond, Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle) NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020☐ AOX 1650☐ 506☐					REMARKS
0820001	5/13/08	—	1	W	2			X																
0820002	↓	0915	2	↓	3			↓																
0820003	↓	1130	3	↓	3			↓																
0820004	↓	1230	4	↓	3			↓																
0820005	↓	1500	5	↓	3			↓																
0820006	↓	1510	6	↓	3			↓																
0820007	↓	1650	7	↓	3			↓																
0820008	5/14/08	0900	8	↓	3			↓																
0820009	↓	0955	9	↓	3			↓																
0820010	↓	1110	10	↓	3			↓																

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION
P.O. # 14495.11
Bill To: EA Eng.

TURNAROUND REQUIREMENTS
___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: Temperature Blank Included

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Mark Blinstrub	Signature: [illegible]	Signature: [illegible]	Signature: [illegible]
Date/Time: 5/16/08 1100	Date/Time: 5/16/08 11:00	Date/Time: 5/16/08 12:10	Date/Time: 5/16/08 1230
Printed Name: Mark Blinstrub	Printed Name: [illegible]	Printed Name: [illegible]	Printed Name: [illegible]
Firm: EA Engineering	Firm: CAS	Firm: CAS	Firm: CAS

RCOC #1 06/03

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SR#: K0804278

PAGE 2 OF 2 COC #:

PROJECT NAME: Linde: AMW-18 Investigation
PROJECT NUMBER: 14495.11
PROJECT MANAGER: Mark Blinstrub
COMPANY/ADDRESS: ~~MBT~~ EA Engineering
12011 NE 1st Street, Suite 100
CITY/STATE/ZIP: Bellevue, WA 98005
E-MAIL ADDRESS: mblinstrub@eaest.com
PHONE #: 425-451-7400 FAX#: 425-451-7880
SAMPLER'S SIGNATURE: Mark Blinstrub

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐	Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☐ Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHS 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐ Hex-Chrom ☐	pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle) NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐	REMARKS
0820011	5/14/08	1220	11	W	3		X											
0820012	↓	1610	12	↓	↓		X											
0820013	↓	1830	13	↓	↓		X											
0820014	5/15/08	0850	14	↓	↓		X											
0820015	↓	0930	15	↓	↓		X											
0820016	↓	1030	16	↓	↓		X											
0820017	↓	1040	17	↓	↓		X											
0820018	↓	1200	18	↓	↓		X											
0820019	↓	1315	19	↓	↓		X											
0820020	↓	1515	20	↓	↓		X											

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION
P.O. # 14495.11
Bill To: EA Eng.

TURNAROUND REQUIREMENTS
___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results
Requested Report Date

Circle which metals are to be analyzed:
Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg
Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Mark Blinstrub	Signature: [illegible]	Signature: [illegible]	Signature: [illegible]
Date/Time: 5/16/08 1100	Date/Time: 5-16-08 11:00	Date/Time: 5/16/08 12:10	Date/Time: 5/16/08 1200
Printed Name: Mark Blinstrub	Printed Name: [illegible]	Printed Name: [illegible]	Printed Name: [illegible]
Firm: EA Engineering	Firm: CAS	Firm: CAS	Firm: CAS

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SR#: 10844458

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PAGE 1 OF 3 COC #

PROJECT NAME: Linde: AMW-18 Investigation
PROJECT NUMBER: 14495.11
PROJECT MANAGER: Mark Blimstrub
COMPANY/ADDRESS: EA Engineering, 12011 NE 1st Street, Suite 100
CITY/STATE/ZIP: Bellevue, WA 98005
E-MAIL ADDRESS: mblimstrub@eaest.com
PHONE #: 425-451-7400 FAX#: 425-451-7800
SAMPLER'S SIGNATURE: Mark Blimstrub

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐	Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐ 8021 ☐ BTEX ☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☐ Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHS 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐ Hex-Chrom ☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐	REMARKS
0820021	5/16/08	—		W	2			X													
0820022	↓	0850		↓	3			X													
0820023	↓	0920		↓	3			X													
0820024	↓	1000		↓	3			X													
0820025	↓	1010		↓	3			X													
0820026	↓	1111		↓	3			X													
0820027	↓	1444		↓	3			X													
0820028	5/19/08	0840		↓	3			X													
0821029	↓	0910		↓	3			X													
0821030	↓	1000		↓	3			X													

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION
P.O. # 14495.01
Bill To: EA Engineering

TURNAROUND REQUIREMENTS
___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results
Requested Report Date

Circle which metals are to be analyzed:
Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg
Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:
Temperature Blank Included.

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Mark Blimstrub; Date/Time: 5/22/08 0915	Signature: [illegible]; Date/Time: 5/22/08 0915	Signature:	Signature:
Printed Name: Mark Blimstrub; Firm: EA Eng.	Printed Name: [illegible]; Firm: OAS	Printed Name:	Printed Name:

RCOC #1 06/03

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SR#: K0804458

PAGE 2 OF 3 COC #

PROJECT NAME: Linde: AMW-18 Investigation
PROJECT NUMBER: 14495.11
PROJECT MANAGER: Mark Blinstrub
COMPANY/ADDRESS: EA Engineering, 12011 NE 1st Street, Suite 100
CITY/STATE/ZIP: Bellevue, WA 98005
E-MAIL ADDRESS: mblinstrub@eaest.com
PHONE #: 425-451-7400 FAX#: 425-451-7800
SAMPLER'S SIGNATURE: Mark Blinstrub

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260B	Hydrocarbons (*see below) Gas☐ 8021☐ BTEX☐ Diesel☐ Oil☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond, Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020☐ AOX 1650☐ 506☐					REMARKS
0821031	5/19/08	1045		W	3			X																	
0821032	↓	1145		↓	3			X																	
0821033	↓	1320		↓	3			X																	
0821034	5/20/08	0830		↓	3			X																	
0821035	↓	0855		↓	3			X																	
0821036	↓	0930		↓	3			X																	
0821037	↓	1020		↓	3			X																	
0821038	↓	—		↓	2			X																	
0821039	↓	1140		↓	3			X																	
0821040	↓	1300		↓	3			X																	

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION
P.O. # 14495.11
Bill To: EA Engineering

TURNAROUND REQUIREMENTS
___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results
Requested Report Date

Circle which metals are to be analyzed:
Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg
Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Mark Blinstrub	Signature: [illegible]	Signature:	Signature:
Date/Time: 5/22/08 0915	Date/Time: 5/22/08 0915	Date/Time:	Date/Time:
Printed Name: Mark Blinstrub	Printed Name: [illegible]	Printed Name:	Printed Name:
Firm: EA Eng.	Firm: GAS	Firm:	Firm:

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SR#: N080416B

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PAGE 3 OF 3 COC #

PROJECT NAME: Linde: AMW-18 Investigation
PROJECT NUMBER: 14495.11
PROJECT MANAGER: Mark Blinstrub
COMPANY/ADDRESS: EA Engineering
12011 NE 1st Street, Suite 100
CITY/STATE/ZIP: Bellevue, WA 98005
E-MAIL ADDRESS: mblinstrub
PHONE #: 425-451-7460 FAX#: 425-451-7800
SAMPLER'S SIGNATURE: Mark Blinstrub

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260B	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond, Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	REMARKS
0821041	5/21/08	0850		W	3		X												
0821042	↓	0925		W	3		X												
0821043	↓	1015		W	3		X												
0821044	↓	1110		W	3		X												
0821045	↓	1220		W	3		X												

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION
P.O. # 14495.11
Bill To: EA Eng.

TURNAROUND REQUIREMENTS
___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results
Requested Report Date

Circle which metals are to be analyzed:
Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg
Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Mark Blinstrub Date/Time: 5/22/08 0915	Signature: [signature] Date/Time: 5/22/08 0915	Signature: Date/Time:	Signature: Date/Time:
Printed Name: Mark Blinstrub Firm: EA Eng	Printed Name: A Armong Firm: CAS	Printed Name: Firm:	Printed Name: Firm:

RCOC #1 06/03

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde : AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804278
Date Collected: 05/13/2008
Date Received: 05/16/2008

Volatile Organic Compounds

Sample Name: 0820001
Lab Code: K0804278-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	**0.080**	J	0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	87	75-120	05/23/08	Acceptable
Toluene-d8	94	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	96	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde : AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804278
Date Collected: 05/13/2008
Date Received: 05/16/2008

Volatile Organic Compounds

Sample Name: 0820002
Lab Code: K0804278-002
Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	**0.070**	J	0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	**0.20**	J	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	86	75-120	05/23/08	Acceptable
Toluene-d8	93	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	95	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde : AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804278
Date Collected: 05/13/2008
Date Received: 05/16/2008

Volatile Organic Compounds

Sample Name: 0820003
Lab Code: K0804278-003

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	**0.34**	J	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	**1.0**		0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	**70**	D	5.0	0.61	10	05/27/08	05/27/08	KWG0804950	
Tetrachloroethene (PCE)	**0.43**	J	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	89	75-120	05/23/08	Acceptable
Toluene-d8	95	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	95	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804278
Project:	Linde : AMW-18 Investigation/14495.11	**Date Collected:**	05/13/2008
Sample Matrix:	Water	**Date Received:**	05/16/2008

Volatile Organic Compounds

Sample Name:	0820004	**Units:**	ug/L
Lab Code:	K0804278-004	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	**0.71**		0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	**2.6**		0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	**2.5**		0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	87	75-120	05/23/08	Acceptable
Toluene-d8	93	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	96	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde : AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804278
Date Collected: 05/13/2008
Date Received: 05/16/2008

Volatile Organic Compounds

Sample Name: 0820005
Lab Code: K0804278-005

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	**0.10**	J	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	**0.50**		0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	88	75-120	05/23/08	Acceptable
Toluene-d8	94	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	94	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804278
Project:	Linde : AMW-18 Investigation/14495.11	**Date Collected:**	05/13/2008
Sample Matrix:	Water	**Date Received:**	05/16/2008

Volatile Organic Compounds

Sample Name:	0820006	**Units:**	ug/L
Lab Code:	K0804278-006	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	**0.14**	J	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	**0.69**		0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	**0.090**	J	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	88	75-120	05/23/08	Acceptable
Toluene-d8	96	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	95	75-117	05/23/08	Acceptable

Comments:

Client: EA Engineering, Science, and Technology
Project: Linde : AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804278
Date Collected: 05/13/2008
Date Received: 05/16/2008

Volatile Organic Compounds

Sample Name: 0820007
Lab Code: K0804278-007

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	**0.56**		0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	89	75-120	05/23/08	Acceptable
Toluene-d8	95	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	96	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804278
Project:	Linde : AMW-18 Investigation/14495.11	**Date Collected:**	05/14/2008
Sample Matrix:	Water	**Date Received:**	05/16/2008

Volatile Organic Compounds

Sample Name:	0820008	**Units:**	ug/L
Lab Code:	K0804278-008	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	85	75-120	05/23/08	Acceptable
Toluene-d8	93	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	93	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804278
Project:	Linde : AMW-18 Investigation/14495.11	**Date Collected:**	05/14/2008
Sample Matrix:	Water	**Date Received:**	05/16/2008

Volatile Organic Compounds

Sample Name:	0820009	**Units:**	ug/L
Lab Code:	K0804278-009	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	**0.080**	J	0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	**0.14**	J	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	88	75-120	05/23/08	Acceptable
Toluene-d8	94	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	93	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804278
Project:	Linde : AMW-18 Investigation/14495.11	**Date Collected:**	05/14/2008
Sample Matrix:	Water	**Date Received:**	05/16/2008

Volatile Organic Compounds

Sample Name:	0820010	**Units:**	ug/L
Lab Code:	K0804278-010	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	**0.22**	J	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	**0.88**		0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	**92**	D	5.0	0.61	10	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	**0.23**	J	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	87	75-120	05/23/08	Acceptable
Toluene-d8	94	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	97	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804278
Project:	Linde : AMW-18 Investigation/14495.11	**Date Collected:**	05/14/2008
Sample Matrix:	Water	**Date Received:**	05/16/2008

Volatile Organic Compounds

Sample Name:	0820011	**Units:**	ug/L
Lab Code:	K0804278-011	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	**0.73**		0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	**2.5**		0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	**50**		0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	**0.18**	J	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	89	75-120	05/23/08	Acceptable
Toluene-d8	94	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	92	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804278
Project:	Linde : AMW-18 Investigation/14495.11	**Date Collected:**	05/14/2008
Sample Matrix:	Water	**Date Received:**	05/16/2008

Volatile Organic Compounds

Sample Name:	0820012	**Units:**	ug/L
Lab Code:	K0804278-012	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	**0.060**	J	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	87	75-120	05/23/08	Acceptable
Toluene-d8	94	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	94	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804278
Project:	Linde : AMW-18 Investigation/14495.11	**Date Collected:**	05/14/2008
Sample Matrix:	Water	**Date Received:**	05/16/2008

Volatile Organic Compounds

Sample Name:	0820013	**Units:**	ug/L
Lab Code:	K0804278-013	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	**2.0**	J	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	88	75-120	05/23/08	Acceptable
Toluene-d8	94	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	96	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804278
Project:	Linde : AMW-18 Investigation/14495.11	**Date Collected:**	05/15/2008
Sample Matrix:	Water	**Date Received:**	05/16/2008

Volatile Organic Compounds

Sample Name:	0820014	**Units:**	ug/L
Lab Code:	K0804278-014	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	**0.050**	J	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	**0.090**	J	0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	**0.080**	J	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	86	75-120	05/23/08	Acceptable
Toluene-d8	94	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	95	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804278
Project:	Linde : AMW-18 Investigation/14495.11	**Date Collected:**	05/15/2008
Sample Matrix:	Water	**Date Received:**	05/16/2008

Volatile Organic Compounds

Sample Name:	0820015	**Units:**	ug/L
Lab Code:	K0804278-015	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	**0.11**	J	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	**0.16**	J	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	**1.0**		0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	88	75-120	05/23/08	Acceptable
Toluene-d8	95	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	93	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804278
Project:	Linde : AMW-18 Investigation/14495.11	**Date Collected:**	05/15/2008
Sample Matrix:	Water	**Date Received:**	05/16/2008

Volatile Organic Compounds

Sample Name:	0820016	**Units:**	ug/L
Lab Code:	K0804278-016	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	**0.050**	J	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	87	75-120	05/23/08	Acceptable
Toluene-d8	94	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	93	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde : AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804278
Date Collected: 05/15/2008
Date Received: 05/16/2008

Volatile Organic Compounds

Sample Name: 0820017
Lab Code: K0804278-017

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	89	75-120	05/23/08	Acceptable
Toluene-d8	95	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	96	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804278
Project:	Linde : AMW-18 Investigation/14495.11	**Date Collected:**	05/15/2008
Sample Matrix:	Water	**Date Received:**	05/16/2008

Volatile Organic Compounds

Sample Name:	0820018	**Units:**	ug/L
Lab Code:	K0804278-018	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	85	75-120	05/23/08	Acceptable
Toluene-d8	94	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	94	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde : AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804278
Date Collected: 05/15/2008
Date Received: 05/16/2008

Volatile Organic Compounds

Sample Name: 0820019
Lab Code: K0804278-019

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	ND	U	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	90	75-120	05/23/08	Acceptable
Toluene-d8	94	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	94	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804278
Project:	Linde : AMW-18 Investigation/14495.11	**Date Collected:**	05/15/2008
Sample Matrix:	Water	**Date Received:**	05/16/2008

Volatile Organic Compounds

Sample Name:	0820020	**Units:**	ug/L
Lab Code:	K0804278-020	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/23/08	05/23/08	KWG0804853	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/23/08	05/23/08	KWG0804853	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/23/08	05/23/08	KWG0804853	
Methylene Chloride	**1.9**	**J**	2.0	0.23	1	05/23/08	05/23/08	KWG0804853	
Bromodichloromethane	ND	U	0.50	0.036	1	05/23/08	05/23/08	KWG0804853	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/23/08	05/23/08	KWG0804853	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/23/08	05/23/08	KWG0804853	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/23/08	05/23/08	KWG0804853	
Dibromochloromethane	ND	U	0.50	0.057	1	05/23/08	05/23/08	KWG0804853	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/23/08	05/23/08	KWG0804853	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/23/08	05/23/08	KWG0804853	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/23/08	05/23/08	KWG0804853	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/23/08	05/23/08	KWG0804853	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/23/08	05/23/08	KWG0804853	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/23/08	05/23/08	KWG0804853	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/23/08	05/23/08	KWG0804853	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	88	75-120	05/23/08	Acceptable
Toluene-d8	94	80-128	05/23/08	Acceptable
4-Bromofluorobenzene	94	75-117	05/23/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/16/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0820021
Lab Code: K0804458-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/27/08	05/27/08	KWG0804899	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/27/08	05/27/08	KWG0804899	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/27/08	05/27/08	KWG0804899	
Methylene Chloride	ND	U	2.0	0.23	1	05/27/08	05/27/08	KWG0804899	
Bromodichloromethane	ND	U	0.50	0.036	1	05/27/08	05/27/08	KWG0804899	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/27/08	05/27/08	KWG0804899	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/27/08	05/27/08	KWG0804899	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/27/08	05/27/08	KWG0804899	
Dibromochloromethane	ND	U	0.50	0.057	1	05/27/08	05/27/08	KWG0804899	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/27/08	05/27/08	KWG0804899	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/27/08	05/27/08	KWG0804899	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/27/08	05/27/08	KWG0804899	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/27/08	05/27/08	KWG0804899	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/27/08	05/27/08	KWG0804899	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/27/08	05/27/08	KWG0804899	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/27/08	05/27/08	KWG0804899	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	107	75-120	05/27/08	Acceptable
Toluene-d8	114	80-128	05/27/08	Acceptable
4-Bromofluorobenzene	102	75-117	05/27/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/16/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0820022
Lab Code: K0804458-002

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/27/08	05/27/08	KWG0804899	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/27/08	05/27/08	KWG0804899	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/27/08	05/27/08	KWG0804899	
Methylene Chloride	ND	U	2.0	0.23	1	05/27/08	05/27/08	KWG0804899	
Bromodichloromethane	ND	U	0.50	0.036	1	05/27/08	05/27/08	KWG0804899	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/27/08	05/27/08	KWG0804899	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/27/08	05/27/08	KWG0804899	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/27/08	05/27/08	KWG0804899	
Dibromochloromethane	ND	U	0.50	0.057	1	05/27/08	05/27/08	KWG0804899	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/27/08	05/27/08	KWG0804899	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/27/08	05/27/08	KWG0804899	
Trichloroethene (TCE)	**3.9**		0.50	0.061	1	05/27/08	05/27/08	KWG0804899	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/27/08	05/27/08	KWG0804899	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/27/08	05/27/08	KWG0804899	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/27/08	05/27/08	KWG0804899	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/27/08	05/27/08	KWG0804899	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	106	75-120	05/27/08	Acceptable
Toluene-d8	114	80-128	05/27/08	Acceptable
4-Bromofluorobenzene	103	75-117	05/27/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/16/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0820023
Lab Code: K0804458-003

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/27/08	05/27/08	KWG0804899	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/27/08	05/27/08	KWG0804899	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/27/08	05/27/08	KWG0804899	
Methylene Chloride	ND	U	2.0	0.23	1	05/27/08	05/27/08	KWG0804899	
Bromodichloromethane	ND	U	0.50	0.036	1	05/27/08	05/27/08	KWG0804899	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/27/08	05/27/08	KWG0804899	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/27/08	05/27/08	KWG0804899	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/27/08	05/27/08	KWG0804899	
Dibromochloromethane	ND	U	0.50	0.057	1	05/27/08	05/27/08	KWG0804899	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/27/08	05/27/08	KWG0804899	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/27/08	05/27/08	KWG0804899	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/27/08	05/27/08	KWG0804899	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/27/08	05/27/08	KWG0804899	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/27/08	05/27/08	KWG0804899	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/27/08	05/27/08	KWG0804899	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/27/08	05/27/08	KWG0804899	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	107	75-120	05/27/08	Acceptable
Toluene-d8	115	80-128	05/27/08	Acceptable
4-Bromofluorobenzene	103	75-117	05/27/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/16/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0820024
Lab Code: K0804458-004

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/27/08	05/27/08	KWG0804899	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/27/08	05/27/08	KWG0804899	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/27/08	05/27/08	KWG0804899	
Methylene Chloride	ND	U	2.0	0.23	1	05/27/08	05/27/08	KWG0804899	
Bromodichloromethane	ND	U	0.50	0.036	1	05/27/08	05/27/08	KWG0804899	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/27/08	05/27/08	KWG0804899	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/27/08	05/27/08	KWG0804899	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/27/08	05/27/08	KWG0804899	
Dibromochloromethane	ND	U	0.50	0.057	1	05/27/08	05/27/08	KWG0804899	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/27/08	05/27/08	KWG0804899	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/27/08	05/27/08	KWG0804899	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/27/08	05/27/08	KWG0804899	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/27/08	05/27/08	KWG0804899	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/27/08	05/27/08	KWG0804899	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/27/08	05/27/08	KWG0804899	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/27/08	05/27/08	KWG0804899	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	106	75-120	05/27/08	Acceptable
Toluene-d8	114	80-128	05/27/08	Acceptable
4-Bromofluorobenzene	102	75-117	05/27/08	Acceptable

Comments:

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/16/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0820025
Lab Code: K0804458-005

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804947	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804947	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804947	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804947	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804947	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804947	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804947	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/28/08	05/28/08	KWG0804947	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804947	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804947	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804947	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/28/08	05/28/08	KWG0804947	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804947	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804947	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804947	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804947	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	107	75-120	05/28/08	Acceptable
Toluene-d8	115	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	103	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/16/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0820026
Lab Code: K0804458-006
Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804947	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804947	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804947	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804947	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804947	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804947	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804947	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/28/08	05/28/08	KWG0804947	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804947	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804947	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804947	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/28/08	05/28/08	KWG0804947	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804947	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804947	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804947	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804947	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	108	75-120	05/28/08	Acceptable
Toluene-d8	115	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	101	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/16/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0820027
Lab Code: K0804458-007

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804947	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804947	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804947	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804947	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804947	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804947	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804947	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/28/08	05/28/08	KWG0804947	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804947	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804947	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804947	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/28/08	05/28/08	KWG0804947	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804947	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804947	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804947	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804947	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	109	75-120	05/28/08	Acceptable
Toluene-d8	116	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	103	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/19/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821028
Lab Code: K0804458-008

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804947	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804947	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804947	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804947	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804947	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804947	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804947	
1,1,1-Trichloroethane (TCA)	**0.16**	J	0.50	0.050	1	05/28/08	05/28/08	KWG0804947	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804947	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804947	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804947	
Trichloroethene (TCE)	**8.0**		0.50	0.061	1	05/28/08	05/28/08	KWG0804947	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804947	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804947	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804947	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804947	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	108	75-120	05/28/08	Acceptable
Toluene-d8	115	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	102	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/19/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821029
Lab Code: K0804458-009

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804947	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804947	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804947	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804947	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804947	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804947	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804947	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/28/08	05/28/08	KWG0804947	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804947	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804947	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804947	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/28/08	05/28/08	KWG0804947	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804947	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804947	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804947	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804947	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	108	75-120	05/28/08	Acceptable
Toluene-d8	115	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	102	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/19/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821030
Lab Code: K0804458-010

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804947	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804947	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804947	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804947	
Bromodichloromethane	**0.040**	J	0.50	0.036	1	05/28/08	05/28/08	KWG0804947	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804947	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804947	
1,1,1-Trichloroethane (TCA)	**0.060**	J	0.50	0.050	1	05/28/08	05/28/08	KWG0804947	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804947	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804947	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804947	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/28/08	05/28/08	KWG0804947	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804947	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804947	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804947	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804947	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	107	75-120	05/28/08	Acceptable
Toluene-d8	116	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	101	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/19/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821031
Lab Code: K0804458-011

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804947	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804947	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804947	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804947	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804947	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804947	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804947	
1,1,1-Trichloroethane (TCA)	**0.050**	J	0.50	0.050	1	05/28/08	05/28/08	KWG0804947	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804947	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804947	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804947	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/28/08	05/28/08	KWG0804947	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804947	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804947	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804947	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804947	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	108	75-120	05/28/08	Acceptable
Toluene-d8	115	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	101	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/19/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821032
Lab Code: K0804458-012

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804947	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804947	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804947	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804947	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804947	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804947	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804947	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/28/08	05/28/08	KWG0804947	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804947	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804947	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804947	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/28/08	05/28/08	KWG0804947	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804947	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804947	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804947	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804947	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	108	75-120	05/28/08	Acceptable
Toluene-d8	116	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	101	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/19/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821033
Lab Code: K0804458-013

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804947	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804947	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804947	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804947	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804947	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804947	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804947	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/28/08	05/28/08	KWG0804947	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804947	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804947	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804947	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/28/08	05/28/08	KWG0804947	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804947	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804947	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804947	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804947	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	109	75-120	05/28/08	Acceptable
Toluene-d8	116	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	101	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/20/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821034
Lab Code: K0804458-014

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804958	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804958	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804958	
Methylene Chloride	**1.6**	J	2.0	0.23	1	05/28/08	05/28/08	KWG0804958	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804958	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804958	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804958	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/28/08	05/28/08	KWG0804958	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804958	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804958	
1,2-Dichloroethane (EDC)	**0.10**	J	0.50	0.073	1	05/28/08	05/28/08	KWG0804958	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/28/08	05/28/08	KWG0804958	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804958	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804958	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804958	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804958	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	107	75-120	05/28/08	Acceptable
Toluene-d8	115	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	102	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/20/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821035
Lab Code: K0804458-015

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804958	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804958	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804958	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804958	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804958	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804958	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804958	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/28/08	05/28/08	KWG0804958	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804958	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804958	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804958	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/28/08	05/28/08	KWG0804958	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804958	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804958	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804958	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804958	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	108	75-120	05/28/08	Acceptable
Toluene-d8	116	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	100	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/20/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821036
Lab Code: K0804458-016

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804958	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804958	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804958	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804958	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804958	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804958	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804958	
1,1,1-Trichloroethane (TCA)	**0.070**	J	0.50	0.050	1	05/28/08	05/28/08	KWG0804958	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804958	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804958	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804958	
Trichloroethene (TCE)	**0.70**		0.50	0.061	1	05/28/08	05/28/08	KWG0804958	
Tetrachloroethene (PCE)	**0.080**	J	0.50	0.077	1	05/28/08	05/28/08	KWG0804958	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804958	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804958	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804958	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	108	75-120	05/28/08	Acceptable
Toluene-d8	115	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	100	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/20/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821037
Lab Code: K0804458-017

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804958	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804958	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804958	
Methylene Chloride	ND	U	-2.0	0.23	1	05/28/08	05/28/08	KWG0804958	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804958	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804958	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804958	
1,1,1-Trichloroethane (TCA)	**0.12**	J	0.50	0.050	1	05/28/08	05/28/08	KWG0804958	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804958	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804958	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804958	
Trichloroethene (TCE)	**0.070**	J	0.50	0.061	1	05/28/08	05/28/08	KWG0804958	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804958	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804958	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804958	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804958	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	108	75-120	05/28/08	Acceptable
Toluene-d8	115	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	100	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804458
Project:	Linde:AMW-18 Investigation/14495.11	**Date Collected:**	05/20/2008
Sample Matrix:	Water	**Date Received:**	05/22/2008

Volatile Organic Compounds

Sample Name:	0821038	**Units:**	ug/L
Lab Code:	K0804458-018	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804958	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804958	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804958	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804958	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804958	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804958	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804958	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/28/08	05/28/08	KWG0804958	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804958	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804958	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804958	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/28/08	05/28/08	KWG0804958	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804958	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804958	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804958	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804958	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	107	75-120	05/28/08	Acceptable
Toluene-d8	114	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	103	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/20/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821039
Lab Code: K0804458-019

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804958	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804958	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804958	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804958	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804958	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804958	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804958	
1,1,1-Trichloroethane (TCA)	**2.1**		0.50	0.050	1	05/28/08	05/28/08	KWG0804958	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804958	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804958	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804958	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/28/08	05/28/08	KWG0804958	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804958	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804958	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804958	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804958	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	107	75-120	05/28/08	Acceptable
Toluene-d8	115	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	102	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/20/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821040
Lab Code: K0804458-020

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/28/08	05/28/08	KWG0804958	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/28/08	05/28/08	KWG0804958	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/28/08	05/28/08	KWG0804958	
Methylene Chloride	ND	U	2.0	0.23	1	05/28/08	05/28/08	KWG0804958	
Bromodichloromethane	ND	U	0.50	0.036	1	05/28/08	05/28/08	KWG0804958	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/28/08	05/28/08	KWG0804958	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/28/08	05/28/08	KWG0804958	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/28/08	05/28/08	KWG0804958	
Dibromochloromethane	ND	U	0.50	0.057	1	05/28/08	05/28/08	KWG0804958	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/28/08	05/28/08	KWG0804958	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/28/08	05/28/08	KWG0804958	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	05/28/08	05/28/08	KWG0804958	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/28/08	05/28/08	KWG0804958	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/28/08	05/28/08	KWG0804958	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/28/08	05/28/08	KWG0804958	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/28/08	05/28/08	KWG0804958	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	109	75-120	05/28/08	Acceptable
Toluene-d8	115	80-128	05/28/08	Acceptable
4-Bromofluorobenzene	102	75-117	05/28/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/21/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821041
Lab Code: K0804458-021

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	06/03/08	06/03/08	KWG0805093	
Trichlorofluoromethane	ND	U	0.50	0.086	1	06/03/08	06/03/08	KWG0805093	
1,1-Dichloroethene	ND	U	0.50	0.10	1	06/03/08	06/03/08	KWG0805093	
Methylene Chloride	ND	U	2.0	0.23	1	06/03/08	06/03/08	KWG0805093	
Bromodichloromethane	ND	U	0.50	0.036	1	06/03/08	06/03/08	KWG0805093	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	06/03/08	06/03/08	KWG0805093	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	06/03/08	06/03/08	KWG0805093	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	06/03/08	06/03/08	KWG0805093	
Dibromochloromethane	ND	U	0.50	0.057	1	06/03/08	06/03/08	KWG0805093	
Carbon Tetrachloride	ND	U	0.50	0.068	1	06/03/08	06/03/08	KWG0805093	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	06/03/08	06/03/08	KWG0805093	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	06/03/08	06/03/08	KWG0805093	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	06/03/08	06/03/08	KWG0805093	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	06/03/08	06/03/08	KWG0805093	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	06/03/08	06/03/08	KWG0805093	
Hexachlorobutadiene	ND	U	2.0	0.19	1	06/03/08	06/03/08	KWG0805093	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	105	75-120	06/03/08	Acceptable
Toluene-d8	116	80-128	06/03/08	Acceptable
4-Bromofluorobenzene	102	75-117	06/03/08	Acceptable

Comments:

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/21/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821042
Lab Code: K0804458-022

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	06/03/08	06/03/08	KWG0805093	
Trichlorofluoromethane	ND	U	0.50	0.086	1	06/03/08	06/03/08	KWG0805093	
1,1-Dichloroethene	ND	U	0.50	0.10	1	06/03/08	06/03/08	KWG0805093	
Methylene Chloride	ND	U	2.0	0.23	1	06/03/08	06/03/08	KWG0805093	
Bromodichloromethane	**0.060**	J	0.50	0.036	1	06/03/08	06/03/08	KWG0805093	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	06/03/08	06/03/08	KWG0805093	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	06/03/08	06/03/08	KWG0805093	
1,1,1-Trichloroethane (TCA)	**0.080**	J	0.50	0.050	1	06/03/08	06/03/08	KWG0805093	
Dibromochloromethane	ND	U	0.50	0.057	1	06/03/08	06/03/08	KWG0805093	
Carbon Tetrachloride	ND	U	0.50	0.068	1	06/03/08	06/03/08	KWG0805093	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	06/03/08	06/03/08	KWG0805093	
Trichloroethene (TCE)	**5.1**		0.50	0.061	1	06/03/08	06/03/08	KWG0805093	
Tetrachloroethene (PCE)	**0.11**	J	0.50	0.077	1	06/03/08	06/03/08	KWG0805093	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	06/03/08	06/03/08	KWG0805093	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	06/03/08	06/03/08	KWG0805093	
Hexachlorobutadiene	ND	U	2.0	0.19	1	06/03/08	06/03/08	KWG0805093	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	106	75-120	06/03/08	Acceptable
Toluene-d8	115	80-128	06/03/08	Acceptable
4-Bromofluorobenzene	101	75-117	06/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/21/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821043
Lab Code: K0804458-023

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	06/03/08	06/03/08	KWG0805093	
Trichlorofluoromethane	ND	U	0.50	0.086	1	06/03/08	06/03/08	KWG0805093	
1,1-Dichloroethene	**0.11**	J	0.50	0.10	1	06/03/08	06/03/08	KWG0805093	
Methylene Chloride	ND	U	2.0	0.23	1	06/03/08	06/03/08	KWG0805093	
Bromodichloromethane	**0.040**	J	0.50	0.036	1	06/03/08	06/03/08	KWG0805093	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	06/03/08	06/03/08	KWG0805093	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	06/03/08	06/03/08	KWG0805093	
1,1,1-Trichloroethane (TCA)	**0.57**		0.50	0.050	1	06/03/08	06/03/08	KWG0805093	
Dibromochloromethane	ND	U	0.50	0.057	1	06/03/08	06/03/08	KWG0805093	
Carbon Tetrachloride	ND	U	0.50	0.068	1	06/03/08	06/03/08	KWG0805093	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	06/03/08	06/03/08	KWG0805093	
Trichloroethene (TCE)	**78**	D	2.5	0.31	5	06/03/08	06/03/08	KWG0805093	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	06/03/08	06/03/08	KWG0805093	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	06/03/08	06/03/08	KWG0805093	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	06/03/08	06/03/08	KWG0805093	
Hexachlorobutadiene	ND	U	2.0	0.19	1	06/03/08	06/03/08	KWG0805093	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	106	75-120	06/03/08	Acceptable
Toluene-d8	116	80-128	06/03/08	Acceptable
4-Bromofluorobenzene	101	75-117	06/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/21/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821044
Lab Code: K0804458-024

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	06/03/08	06/03/08	KWG0805093	
Trichlorofluoromethane	ND	U	0.50	0.086	1	06/03/08	06/03/08	KWG0805093	
1,1-Dichloroethene	ND	U	0.50	0.10	1	06/03/08	06/03/08	KWG0805093	
Methylene Chloride	ND	U	2.0	0.23	1	06/03/08	06/03/08	KWG0805093	
Bromodichloromethane	ND	U	0.50	0.036	1	06/03/08	06/03/08	KWG0805093	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	06/03/08	06/03/08	KWG0805093	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	06/03/08	06/03/08	KWG0805093	
1,1,1-Trichloroethane (TCA)	**0.15**	J	0.50	0.050	1	06/03/08	06/03/08	KWG0805093	
Dibromochloromethane	ND	U	0.50	0.057	1	06/03/08	06/03/08	KWG0805093	
Carbon Tetrachloride	ND	U	0.50	0.068	1	06/03/08	06/03/08	KWG0805093	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	06/03/08	06/03/08	KWG0805093	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	06/03/08	06/03/08	KWG0805093	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	06/03/08	06/03/08	KWG0805093	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	06/03/08	06/03/08	KWG0805093	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	06/03/08	06/03/08	KWG0805093	
Hexachlorobutadiene	ND	U	2.0	0.19	1	06/03/08	06/03/08	KWG0805093	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	106	75-120	06/03/08	Acceptable
Toluene-d8	115	80-128	06/03/08	Acceptable
4-Bromofluorobenzene	100	75-117	06/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: Linde:AMW-18 Investigation/14495.11
Sample Matrix: Water

Service Request: K0804458
Date Collected: 05/21/2008
Date Received: 05/22/2008

Volatile Organic Compounds

Sample Name: 0821045
Lab Code: K0804458-025

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	06/03/08	06/03/08	KWG0805093	
Trichlorofluoromethane	ND	U	0.50	0.086	1	06/03/08	06/03/08	KWG0805093	
1,1-Dichloroethene	ND	U	0.50	0.10	1	06/03/08	06/03/08	KWG0805093	
Methylene Chloride	ND	U	2.0	0.23	1	06/03/08	06/03/08	KWG0805093	
Bromodichloromethane	ND	U	0.50	0.036	1	06/03/08	06/03/08	KWG0805093	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	06/03/08	06/03/08	KWG0805093	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	06/03/08	06/03/08	KWG0805093	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	06/03/08	06/03/08	KWG0805093	
Dibromochloromethane	ND	U	0.50	0.057	1	06/03/08	06/03/08	KWG0805093	
Carbon Tetrachloride	ND	U	0.50	0.068	1	06/03/08	06/03/08	KWG0805093	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	06/03/08	06/03/08	KWG0805093	
Trichloroethene (TCE)	ND	U	0.50	0.061	1	06/03/08	06/03/08	KWG0805093	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	06/03/08	06/03/08	KWG0805093	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	06/03/08	06/03/08	KWG0805093	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	06/03/08	06/03/08	KWG0805093	
Hexachlorobutadiene	ND	U	2.0	0.19	1	06/03/08	06/03/08	KWG0805093	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	105	75-120	06/03/08	Acceptable
Toluene-d8	114	80-128	06/03/08	Acceptable
4-Bromofluorobenzene	100	75-117	06/03/08	Acceptable

Comments:

Monitoring Wells

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: LINDE/14495.05
Sample Matrix: Water

Service Request: K0804030
Date Collected: 05/07/2008
Date Received: 05/09/2008

Volatile Organic Compounds

Sample Name: 0819041 AMW-8A
Lab Code: K0804030-015

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/15/08	05/15/08	KWG0804545	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/15/08	05/15/08	KWG0804545	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/15/08	05/15/08	KWG0804545	
Methylene Chloride	ND	U	2.0	0.23	1	05/15/08	05/15/08	KWG0804545	
Bromodichloromethane	ND	U	0.50	0.036	1	05/15/08	05/15/08	KWG0804545	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/15/08	05/15/08	KWG0804545	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/15/08	05/15/08	KWG0804545	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/15/08	05/15/08	KWG0804545	
Dibromochloromethane	ND	U	0.50	0.057	1	05/15/08	05/15/08	KWG0804545	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/15/08	05/15/08	KWG0804545	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/15/08	05/15/08	KWG0804545	
Trichloroethene (TCE)	**1.4**		0.50	0.061	1	05/15/08	05/15/08	KWG0804545	
Tetrachloroethene (PCE)	ND	U	0.50	0.077	1	05/15/08	05/15/08	KWG0804545	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/15/08	05/15/08	KWG0804545	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/15/08	05/15/08	KWG0804545	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/15/08	05/15/08	KWG0804545	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	90	75-120	05/15/08	Acceptable
Toluene-d8	105	80-128	05/15/08	Acceptable
4-Bromofluorobenzene	95	75-117	05/15/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: EA Engineering, Science, and Technology
Project: LINDE/14495.05
Sample Matrix: Water

Service Request: K0804030
Date Collected: 05/07/2008
Date Received: 05/09/2008

Volatile Organic Compounds

Sample Name: 0819042 AMW-10
Lab Code: K0804030-016

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Not
Vinyl Chloride	ND	U	0.50	0.071	1	05/16/08	05/16/08	KWG0804593	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/16/08	05/16/08	KWG0804593	
1,1-Dichloroethene	**2.4**		0.50	0.10	1	05/16/08	05/16/08	KWG0804593	
Methylene Chloride	ND	U	2.0	0.23	1	05/16/08	05/16/08	KWG0804593	
Bromodichloromethane	ND	U	0.50	0.036	1	05/16/08	05/16/08	KWG0804593	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/16/08	05/16/08	KWG0804593	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/16/08	05/16/08	KWG0804593	
1,1,1-Trichloroethane (TCA)	**6.0**		0.50	0.050	1	05/16/08	05/16/08	KWG0804593	
Dibromochloromethane	ND	U	0.50	0.057	1	05/16/08	05/16/08	KWG0804593	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/16/08	05/16/08	KWG0804593	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/16/08	05/16/08	KWG0804593	
Trichloroethene (TCE)	**460**	D	5.0	0.61	10	05/16/08	05/16/08	KWG0804593	
Tetrachloroethene (PCE)	**2.3**		0.50	0.077	1	05/16/08	05/16/08	KWG0804593	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/16/08	05/16/08	KWG0804593	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/16/08	05/16/08	KWG0804593	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/16/08	05/16/08	KWG0804593	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	94	75-120	05/16/08	Acceptable
Toluene-d8	101	80-128	05/16/08	Acceptable
4-Bromofluorobenzene	94	75-117	05/16/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	EA Engineering, Science, and Technology	**Service Request:**	K0804030
Project:	LINDE/14495.05	**Date Collected:**	05/07/2008
Sample Matrix:	Water	**Date Received:**	05/09/2008

Volatile Organic Compounds

EC-1

Sample Name:	0819062	**Units:**	ug/L
Lab Code:	K0804030-020	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Vinyl Chloride	ND	U	0.50	0.071	1	05/16/08	05/16/08	KWG0804593	
Trichlorofluoromethane	ND	U	0.50	0.086	1	05/16/08	05/16/08	KWG0804593	
1,1-Dichloroethene	ND	U	0.50	0.10	1	05/16/08	05/16/08	KWG0804593	
Methylene Chloride	ND	U	2.0	0.23	1	05/16/08	05/16/08	KWG0804593	
Bromodichloromethane	ND	U	0.50	0.036	1	05/16/08	05/16/08	KWG0804593	
trans-1,2-Dichloroethene	ND	U	0.50	0.048	1	05/16/08	05/16/08	KWG0804593	
cis-1,2-Dichloroethene	ND	U	0.50	0.045	1	05/16/08	05/16/08	KWG0804593	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.050	1	05/16/08	05/16/08	KWG0804593	
Dibromochloromethane	ND	U	0.50	0.057	1	05/16/08	05/16/08	KWG0804593	
Carbon Tetrachloride	ND	U	0.50	0.068	1	05/16/08	05/16/08	KWG0804593	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.073	1	05/16/08	05/16/08	KWG0804593	
Trichloroethene (TCE)	**0.21**	J	0.50	0.061	1	05/16/08	05/16/08	KWG0804593	
Tetrachloroethene (PCE)	**0.23**	J	0.50	0.077	1	05/16/08	05/16/08	KWG0804593	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.064	1	05/16/08	05/16/08	KWG0804593	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	05/16/08	05/16/08	KWG0804593	
Hexachlorobutadiene	ND	U	2.0	0.19	1	05/16/08	05/16/08	KWG0804593	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	92	75-120	05/16/08	Acceptable
Toluene-d8	104	80-128	05/16/08	Acceptable
4-Bromofluorobenzene	95	75-117	05/16/08	Acceptable

Comments: