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January 31, 2006

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PERFUND SECTION

Ms. Cheryl Marks
Hydrogeologist, Groundwater Compliance Unit
Solid Waste Section, Division of Waste Management
North Carolina Department of Environment and Natural Resources
401 Oberlin Road, Suite 150
Raleigh, North Carolina 27605

Carmen Johnson
Scanned by | Date 6/6/12 | Doc ID # RCO
95-02

Re: Watauga County Landfill, Permit #95-02
Assessment Monitoring Program
DAA Job No. 6520-39

Dear Ms. Marks:

Please find enclosed a report presenting the results of the semiannual Assessment Monitoring event conducted at the Watauga County Landfill on October 3-4, 2005. Preliminary, unvalidated analytical result summary tables for the event were submitted on October 26, 2005. The report discusses sampling procedures, analytical results and overall conclusions of the monitoring event. The report concludes with a natural attenuation demonstration update incorporating the October 2005 data set and current guidance on developing a monitored natural attenuation remedial proposal.

The next assessment monitoring event is scheduled for April 2006. If you should have any questions or comments concerning the report or the next event, please do not hesitate to contact me.

Sincerely,
DRAPER ADEN ASSOCIATES

Jeffrey E. Smith
Project Geologist

Jes/JES
Attachments: Monitoring Report

cc: Mr. Robert Nelson, Watauga County Manager
Mr. James Potter, Watauga County Landfill Manager (with enclosure)
Mr. Michael Lawless, C.P.G., Groundwater Project Manager, DAA

Carmen Johnson

Scanned by: Date: 6/6/12 Doc ID #: RCO

95-02

Received
JUL 2006
Waste Management

Groundwater and Surface Water Assessment Monitoring Results Report April 4-5, 2006 Event

Watauga County Landfill
Watauga County, North Carolina
NCDENR Permit No. 95-02

Prepared for:

Watauga County Board of Commissioners

and

North Carolina Department of Environment and Natural Resources
Division of Solid Waste Management
Solid Waste Section

Prepared by:

Draper Aden Associates
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2206 S. Main Street
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DAA Job No. 6520-39

June 9, 2006

Draper Aden Associates (DAA) prepared this document (which may include drawings, specifications, reports, studies and attachments) in accordance with the agreement between DAA and Watauga County. The standard of care for all professional engineering, environmental and surveying and related services performed or furnished by DAA under this Agreement are the care and skill ordinarily used by members of these professions practicing under similar circumstances at the same time and in the same locality. DAA makes no warranties, express or implied, under this Agreement in connection with DAA's services. Conclusions presented are based upon a review of available information, the results of our field studies, and/or professional judgment. To the best of our knowledge, information provided by others is true and accurate, unless otherwise noted.

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The actual conditions and characteristics encountered in soils, groundwater, bedrock, weathered rock, colluvium, karst terrain, and other subsurface investigations may vary significantly between successive test points and sample intervals, and at locations other than where observations, explorations, and investigations have been made. Because of the inherent uncertainties in subsurface evaluations, changed or unanticipated subsurface conditions may occur that could affect total project costs and / or execution. Additional activities and expenses related to changed subsurface conditions are not the responsibility of the ENGINEER unless they are a result of the ENGINEER'S failure to exercise the standard of care set forth herein. Design shall reflect those subsurface conditions reasonably anticipated from data obtained from the subsurface investigations performed for this project.

Conclusions presented by DAA do not reflect variations in subsurface groundwater quality that might exist between or beyond sampling points or between specific sample collections events. DAA shall incur no liability resulting from information supplied by others.

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EXECUTIVE SUMMARY

This report presents the results of the first semiannual 2006 Assessment monitoring groundwater and surface water sampling event at the Watauga County Landfill, NCDENR Permit No. 95-02, Watauga County, North Carolina, conducted on April 4-5, 2006 by Draper Aden Associates. Assessment monitoring was conducted in accordance with the Watauga County Landfill Assessment Plan (DAA, Sept. 3, 1993) and subsequent monitoring program revisions as approved by the NCDENR.

In June 1998, the NCDENR approved the following monitoring program revisions:

1) the initiation of monitoring a smaller set of the core monitoring wells for semiannual monitoring and a larger set for annual monitoring,
2) annual rather than semiannual analysis for target metals, and
3) withdrawal of select non-impacted monitoring wells from routine groundwater monitoring.

The April 2006 event incorporated the core well subset and analysis for target metals.

A remedial cap was installed at the facility in the fall of 1996. The remedial cap focuses on source containment as an immediate remedial action, as established by the EPA's presumptive remedy directive (EPA 540-F-93-035, September 1993). Additional risk assessment activities address exposure pathways outside the source area. These activities include the extension of public water along the Route 421 alignment north of the facility and to select residences located south of the facility. These response actions for exposure pathways outside the source area are being combined with the presumptive remedy to develop a comprehensive site response. Source containment, implemented through a remedial cap, supplemented by risk assessment, institutional controls, natural attenuation, and continuing assessment investigation comprise the broad package of remedial actions currently being conducted at the site.

The northern edge of the occurrence of assessment target parameters in the groundwater continues to be approximated by the Route 421 bypass. South of the bypass, these parameters are concentrated between the southern saddle, located between the landfill and the Rocky Mountain Heights Subdivision, and the west and north drainages below the landfill. Significant decreases in target parameter concentrations, as well as reductions in the extent of impact, continue to be observed in impacted groundwater and surface water across the site.

Monitoring results continue to demonstrate the extent of impact is retreating and concentrations within the impacted area are diminishing. A general reduction trend from more highly chlorinated compounds (i.e., PCE, TCE, and 1,1,1-TCA) to less chlorinated compounds (i.e., cis-1,2-DCE, 1,1-DCA and CA) is observed.

In August 1999, the NCDENR requested that Watauga County present an updated site conceptual model. The initial site conceptual model was presented in the Assessment Plan, dated September 3, 1993. Specifics of the site conceptual model (i.e., geologic maps, potentiometric

maps, cross-sections, boring logs, etc.) have been refined in subsequent investigation reports (i.e., the Assessment Activity Report, dated July 1994; the Remedial Investigation and Alternatives Report, dated January 1996; and multiple semiannual monitoring event reports). The site conceptual model was revisited in the July 1999 Monitoring Event Report, dated January 5, 2000. The updated site conceptual model clearly demonstrated the reductions in extent and concentration of impact observed across the site.

The site conceptual model ~~was~~ is refined as additional data is collected. This updated site model, presented graphically with both concentration trend graphs and chronological delineation maps, illustrated the significant reductions in the extent and concentration of impact that have occurred across the site. Comparisons of relative concentrations over time demonstrate the role of reductive reactions in the natural attenuation processes active across the site. Although North Carolina Groundwater Protection Standards continue to be exceeded at the property boundary, the concentration, extent, and total mass of impact at the site is declining.

The natural attenuation demonstration is also refined as additional data is collected. Natural attenuation proceeds due to a wide variety of processes (i.e., advection, adsorption, biological degradation, chemical degradation, dispersion and volatilization). All of these attenuation processes can contribute to reducing toxicity, mobility or volume to levels protective of human health and the ecosystem. The natural attenuation demonstration update emphasized the combination of decreasing constituent concentrations and lack of plume migration, which provide evidence for the natural attenuation of groundwater impact at the site. Geochemical and organic changes within the groundwater that support biological and chemical degradation of impacts at the site were also characterized.

The natural attenuation demonstration illustrated how initial degradation of the more highly chlorinated solvents at the site (i.e., PCE, TCE, and 1,1,1-TCA) is driven by reductive dechlorination. The demonstration further illustrated how the daughter products of this process (i.e., cis-1,2-DCE, 1,1-DCA, CA, vinyl chloride, etc.) are further degraded by aerobic oxidation.

In order to provide the data necessary to demonstrate specific conditions affecting both reductive dechlorination and aerobic degradation at the site, the wells were sampled semiannually for several key geochemical MNA indicator parameters from February 2000 to July 2003. Relationships were established for these geochemical parameters (oxygen, total residual chlorine, total organic carbon, methane, nitrate, sulfate, etc.) that demonstrated the chemical dynamics at work to reduce the extent and concentration of impact. Select field MNA indicator parameters are currently sampled semiannually, during sampling of the larger core well set.

Graphical tests for evaluating plume stability and behavior that have been established for evaluating the performance of natural attenuation are presented at the conclusion of this report. These graphical tests use the site historical data to display statistically significant plume stabilization and a loss of plume mass over time. The combination of decreasing constituent concentrations and the lack of plume migration provide reasonable evidence for natural attenuation of impact at the site.

1.0 INTRODUCTION

This report presents the results of the first semiannual 2006 Assessment monitoring groundwater and surface water sampling event, conducted at the Watauga County Landfill, NCDENR Permit No. 95-02, Watauga County, North Carolina, on April 4-5, 2006 by Draper Aden Associates. The report discusses sampling procedures, analytical results, and overall conclusions of the monitoring event. Tables and figures are provided in Appendix A. A summary of analytical results is presented in Tables 2A, 2B, and 2C. Groundwater elevation measurements are provided in Table 4. Background Assessment analytical results are provided in Tables 5A-C and Table 6. The Groundwater and Surface Water Monitoring Program site map is provided as Figure 1. The potentiometric surface, inferred from data obtained on April 4, 2006, is provided as Figure 2.

Appendix E contains copies of the laboratory summary data sheets. Copies of all associated laboratory data with a data validation summary and completed Quality Assurance/Quality Control (QA/QC) criteria forms used to validate the data are also included in Appendix E. The comprehensive laboratory data report was scanned for inclusion on CD-ROM and will be combined with the laboratory reports generated from the next several events prior to distribution.

The report concludes with a discussion of the natural attenuation indicator sampling results and the relative distribution of target parameter concentrations. An updated review of concentration and distribution trends is also provided.

Assessment monitoring is conducted in accordance with the Watauga County Landfill Assessment Plan (DAA, September 3, 1993) and monitoring program revisions as detailed in the Remedial Investigation and Alternatives Report (DAA, January 12, 1996) and subsequent monitoring event reports. Appendix I of the Assessment Plan, The Groundwater and Surface Water Monitoring Program, details the schedule and procedures to be implemented for collecting groundwater and surface water samples, analyzing the samples for specified parameters, and evaluating and reporting data. The current monitoring schedule is summarized in Table 1.

1.1 Groundwater Monitoring Well Network

Nineteen groundwater monitoring wells (MW-1 through MW-19) have been installed at the Watauga County Landfill. Monitoring well locations are shown on the Groundwater and Surface Water Monitoring Program site map (Figure 1). As noted on the site map, MW-6 and MW-16 were abandoned subsequent to the second semiannual assessment monitoring event (April 1996). Abandonment of MW-6 was necessary to permit construction of the landfill cap and abandonment of MW-16 was necessary to permit construction of the 421 bypass. Abandonment of MW-7 was completed in October 2002 to permit the extension of transfer station access routes. Although it was presumed that a contractor had abandoned the un-impacted shallow well MW-19, located on BREMCO property, during preparation of the area for a parking area, it was discovered intact during the October 2005 event, protected in a manhole in the middle of the parking lot.

In order to maximize the effectiveness and efficiency of the groundwater monitoring program, the assessment well network is stratified into two groups of "core" and "boundary" wells. Core assessment wells are selected based on each well's ability to monitor and characterize migration of potential impacts. Boundary assessment wells are selected based on each well's ability to monitor and characterize the limits of the horizontal and vertical extent of impact.

In July 1995, after the first semiannual assessment event (fifth assessment event), NCDENR approved the withdrawal of non-impacted boundary wells from the routine compliance monitoring program on the condition that the boundary wells be rotated in and out of routine monitoring on a regular basis. The boundary wells were sampled again during 1997-1998. NCDENR subsequently approved withdrawal of select non-impacted boundary wells from routine groundwater monitoring. The wells were not sampled during 1999-2000. In February 2001 and February 2002, the six non-impacted boundary wells were sampled and analyzed for the target organic and other natural attenuation indicator parameters. The data collected from these wells continue to indicate that they are not impacted. Future monitoring of these wells will continue to be based on an annual review of temporal contaminant distribution trends and other site characterization needs.

In June 1998, NCDENR approved the initiation of monitoring a smaller set of the core monitoring well network for semiannual monitoring and a larger set for annual monitoring. The subset of the existing twelve core well network approved for semiannual monitoring includes the following six wells: MW-2, MW-3, MW-8, MW-9, MW-12 and MW-17. In 1998, the groundwater at these six monitoring points exceeded the EPA MCL for one or more organic target parameters.

The current stratification of the assessment monitoring well network is as follows:

CORE WELLS	BOUNDARY WELLS
MW-1	MW-4
MW-2*	MW-5
MW-3*	MW-13
MW-6 (abandoned 1996)	MW-14
MW-7 (abandoned 10/02)	MW-16 (abandoned 1996)
MW-8*	MW-18
MW-9*	
MW-10	
MW-11	
MW-12*	
MW-15	
MW-17*	
MW-19	

* - core-subset well

The core well subset was sampled on the April 2006 event.

1.2 Surface Water Sampling

The goal of the surface water monitoring system at Watauga County Landfill is to provide representative surface water samples for assessing the water quality downgradient of the waste disposal area. Six surface water monitoring points serve to meet this objective.

- (S-1) The last of the series of sediment ponds is sampled to assess the quality of the surface water originating from the landfill before the water discharges into the stream.

- (S-2) The spring capture outfall located adjacent to the last of the series of sediment ponds is sampled to provide a representative sample for assessing the quality of the water originating from the spring capture system located beneath the fill area.

- (S-3) The stream is sampled at the landfill property boundary (approximately 600 feet below the last sediment pond) to assess the water quality of the stream below the waste disposal area. No sampling location is available upstream of the waste disposal area since the stream originates immediately below and adjacent to the disposal area.

- (S-4) The stream located below the Bolick site is sampled approximately 30 feet below the landfill property boundary to assess the water quality of the surface water below the Bolick site. This sampling location is chosen instead of the sediment pond located on the Bolick site to provide a sample that is more representative of the potential influence of groundwater from the soil aquifer.

- (S-5) A seep, located below the waste disposal area and directly above the sediment pond, was observed flowing during the first quarter background event (June 1994). This seep is sampled in addition to the four originally proposed surface water sampling locations.

- (S-6) An additional surface water monitoring point, located approximately 800 feet below the existing surface water monitoring point S-4, was added subsequent to the first semiannual sampling event (July 1995). This monitoring point is sampled to assess the persistence of surface water impacts observed at S-4 further downgradient along this drainage.

A reconnaissance of the landfill is conducted concurrent with the sampling event to document the presence or absence of leachate production. No leachate production has been observed during the sampling events since the initiation of monitoring in 1994. Leachate generated in the waste drains via the spring capture outfall (S-2) and groundwater flow paths.

1.3 Sampling and Analysis Schedule

1.3.1 Groundwater

During the first year of Assessment groundwater monitoring (1994-1995) four quarterly background sampling events were conducted on each groundwater monitoring well. Semiannual sampling is currently conducted. The most recent semiannual monitoring event was conducted on April 4-5, 2006. The groundwater Assessment monitoring schedule is outlined in Table 1.

Monitoring Parameters

The analytical scans performed on each monitoring well during the first year of assessment background monitoring were designed to analyze for all the target parameters detected and tentatively confirmed as a result of the initial comprehensive sampling event performed on the previously existing well network MW-1 through MW-7 (March 1993). The initial analytical list was comprised of the complete EPA Appendix II List of Hazardous Inorganic and Organic Parameters (40 CFR, Part 258) required for Assessment Monitoring under the NCDENR requirements for Municipal Solid Waste Landfills (15A NCAC 13B Section .1600). A summary results table of the initial March 1993 sampling event is contained in Appendix C of this report and the results are detailed in Sections II and III of the Assessment Plan (DAA, September 3, 1993).

The complete EPA Appendix II analysis was repeated on the network of core wells during the first semiannual event (July 1995). Additional parameters detected, and verified through Quality Assurance / Quality Control (QA/QC) validation procedures as being present, that were not identified in prior Assessment monitoring events, were added to the assessment target parameter list. Target parameters not detected during all five previous assessment monitoring program events, and verified through QA/QC validation procedures as not being present, were deleted from the assessment target parameter list. As required, amendments to the existing target parameter list were evaluated and approved by the NCDENR, prior to implementation. For amended target parameters, it was proposed that four independent samples be collected and analyzed for those additional parameters during the following four semiannual sampling events to establish background.

Revisions to the target inorganic parameter list involved adding four metal parameters (chromium, cobalt, nickel, and vanadium) and deleting two other metal parameters (cadmium and mercury). The presence of cadmium and mercury in the groundwater at the site was not supported by the analytical results of all four assessment background or the first semiannual monitoring events. Chromium, cobalt, nickel, and vanadium were observed in three or more wells, although also at levels far below EPA MCL and NC groundwater standards (NCSs), as a result of the comprehensive EPA Appendix II analytical scan performed during the first semiannual event.

As a result of four successive assessment sampling events, all the assessment target metal parameters (including chromium, cobalt, nickel, and vanadium) were observed at levels far below EPA MCL and NCSs. Subsequent to the January 1998 Assessment monitoring event NCDENR

approved completing target metal analysis annually rather than semiannually. Metals were analyzed on the April 2006 event.

Past target organic parameter list revisions involved deleting trans-1,3-dichloropropene. The analytical results of the four background monitoring events and the first semiannual assessment sampling event confirmed the absence of trans-1,3-dichloropropene in the groundwater and surface waters at the site. Thus, per the decision criteria outlined in the Assessment Plan, trans-1,3-dichloropropene was removed from the target parameter list. Due to repeated detection, five constituents (chlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, trans-1,2-dichloroethene, and 1,2-dichloropropane) were added to the target list in 2001. Although none of these additional constituents were detected in March 2004 or March 2005, and only trans-1,2-dichloroethene was detected in July 2003, all the additional constituents except 1,2-dichloropropane were detected in September 2004, and all the additional constituents were detected in October 2005.

As approved by NCDENR, monitoring of additional EPA Appendix II parameters that have not been confirmed in any of monitoring wells to date is no longer required.

Analytical Methods

During the first year of background Assessment Monitoring (1994-1995), analyses of the core wells utilized EPA Contract Laboratory Program – Statements of Work (CLP-SOW) for all four quarterly events. Organic analyses of the boundary wells alternated between CLP and Low Level Risk Assessment (LLRA) analytical methods for each quarterly event. Metal analyses of all monitoring wells utilized CLP methods on all events. Since completing the first year of quarterly background sampling (April 1995), the core wells have been monitored on a semiannual basis. The first semiannual assessment monitoring event analyzed for the EPA Appendix II List of Hazardous Inorganic and Organic Parameters (40 CFR Part 258), utilizing LLRA analytical methods for organic parameters and CLP analytical methods for metal parameters.

Monitoring continues to be conducted on a semiannual basis for the organic target parameters detected as a result of the complete EPA Appendix II analysis. Monitoring is conducted on an annual basis for the metal target parameters. Reevaluation of the site network and monitoring scheme is conducted after review of the results of each sampling event. The monitoring program continues to follow a two-tiered analytical approach utilizing both EPA CLP-SOW analytical methods and LLRA screening by EPA-SW846 analytical methods. The CLP-SOW are utilized to generate high-level quality data with documented QA/QC protocols. The LLRA methods (EPA-SW-846) are utilized for risk assessment screening to preliminarily identify low levels of parameters that may be present. The groundwater analysis schedule provides an outline of analytical methodology designated for each event (Table 1).

The assessment monitoring schedule alternates between CLP and LLRA analytical methods for groundwater organic analyses each semiannual event. Groundwater was analyzed on the March 2006 event utilizing CLP methods and on the next semiannual event (September 2006) utilizing LLRA methods. Note that the assessment program has completed semiannual monitoring of natural

attenuation indicator field parameters from February 2000 through 2006. The groundwater sampling program for these geochemical and organic indicator parameters are discussed further at the conclusion of this report.

1.3.2 Surface Water

Surface water monitoring has been conducted on a semiannual basis since the initiation of the Assessment Plan monitoring program. The analytical scans that are performed on the surface water samples utilize CLP SOW and are designed to analyze for all target parameters detected as a result of the comprehensive Appendix II analysis. The surface water assessment monitoring schedule is also outlined in Table 1.

2.0 GROUNDWATER AND SURFACE WATER SAMPLING FIELD PROCEDURES

Groundwater and surface water samples were collected according to the Watauga County Landfill Groundwater and Surface Water Monitoring Plan (DAA, September 3, 1993). Field notes, contained in Appendix B, document sample collection procedures.

2.1 Well Purging and Sample Collection

Dedicated stainless steel and TEFLON electrical submersible pumps were permanently installed in the monitoring well network subsequent to the first Assessment event in 1994. Draper Aden Associates' environmental technicians used the dedicated pumps to purge and collect groundwater samples from the well network during the April 2006 sampling event. All non-dedicated equipment was decontaminated between sampling of each monitoring well.

A minimum of three well casing volumes of groundwater was removed from each monitoring well prior to sample collection. Well casing volumes were calculated from measurements of depth to water, and total well depth taken prior to purging. Stabilization of field analyses for pH and specific conductivity were used to verify that stagnant water within the well as removed during purging, and that groundwater representative of the near-aquifer was being sampled. Field notes summarize and document well purging calculations and results (Appendix B).

2.2 Field Meter Equipment and Calibration

Field measurements of pH, specific conductivity, oxidation/reduction potential (ORP), dissolved oxygen (DO) and temperature, were analyzed at each well by completing multiple measurements during purging utilizing a flow through cell.

A YSI model 650 pH/conductivity/ORP/DO/temperature meter was used for the field measurement of these parameters. The meter was calibrated in the field using laboratory-grade buffers for pH, and KCl solution for specific conductivity. Field notes contained in Appendix B document field pH and specific conductivity meter calibration methods for the sampling event.

2.3 Quality Control Blank Samples

Trip blanks were utilized as part of the assessment monitoring program. Trip blanks were prepared by the analyzing laboratory to accompany the sample kits at all times. The trip blanks employed sample containers and volumes identical in physical and chemical integrity to the samples used for actual sample collection. The trip blank was analyzed for all parameters included in the sampling event. The trip blank served as a control on sample kit preparation, analysis in the laboratory, and sample kit transportation.

Field blanks were not collected, due to the use of dedicated purging/sampling equipment.

2.4 Sample Containers and Shipment

Groundwater samples were collected in U.S. EPA approved containers prepared and supplied by the analyzing laboratory. Where applicable, the analyzing laboratory prepared organic sample containers with hydrochloric acid (HCl) prior to sample collection. Total metal samples were preserved in the field using nitric acid supplied by the analyzing laboratory. All samples were placed on ice in a cooler at approximately 4°C immediately after collection. A chain of custody seal was placed on each sample and each cooler to verify samples were not disturbed during transport. The coolers were shipped to the analyzing laboratory by overnight courier service.

2.5 Chain of Custody Documentation

Chain of Custody (COC) documentation and analysis requests are contained with the comprehensive laboratory report. Laboratory analytical data summery sheets are found in Appendix E. COC forms provided by the analyzing laboratory or developed by Draper Aden Associates were used to document the custody of the samples from the time they were collected in the field to the time the custody of the samples was relinquished by Draper Aden personnel. Relinquishing custody of the samples was accomplished by shipping through an overnight carrier service.

The information recorded in the COC included sampling location, sampling points, number of samples, type of sampling containers, sample preservation procedures, matrix spike samples, if any, blanks accompanying the samples, date and time of sample collection, and the date and time custody was relinquished. These COC forms were sent with the samples to the analyzing laboratory. Analysis request forms, with lists of required analytes for the different analytical methods to be used, were also attached along with the COC forms.

3.0. LABORATORY ANALYSIS

3.1 List of Laboratories

Lancaster Laboratories of Lancaster, Pennsylvania performed volatile organic analyses by EPA Method 524.2 on all private well samples.

CompuChem Environmental Corporation, a division of Liberty Analytical Corporation of Cary, North Carolina, performed inorganic and volatile organic analyses on all monitoring well samples, and volatile organic analyses on all surface water samples, by EPA CLP-SOW.

3.2 Analytical Methods

All CLP analytical techniques used were in accordance with the procedures listed in the CLP-SOW Inorganics ILM4.1 and Organics OLMO4.3.

3.3 Data Quality Objectives

Quality Assurance Objectives for Measurements

Data quality objectives (DQO) are established to ensure that the data collected throughout is sufficient and of adequate quality for the intended use. Overall DQO included the following:

- Precision - A measurement of the reproducibility of measurements compared to their average value. Precision is measured by the use of splits, replicate samples, or co-located samples and field audit samples.
- Accuracy - This measures the bias in a measurement system by comparing a measured value to a true or standard value. Accuracy is measured by the use of standards, spiked samples, and field audit samples.
- Representativeness - This is the degree to which a sample represents the characteristic of the population being measured. Representativeness is controlled by defining sample collection protocols and adhering to them throughout the evaluation.
- Completeness - This is the ratio of validated data points to the total samples collected. Completeness is achieved through duplicate sampling and resampling, when necessary.
- Comparability - This is the confidence that one data set can be compared to another. Comparability is achieved through the use of standard methods to control the precision and accuracy of the data sets to be compared by use of field audit samples.

The CLP-SOWs are utilized to generate a high level quality data with documented QA/QC protocols. The SW-846 methods are utilized to generate organic data for risk assessment to preliminary identify low levels of analytes that may be present. Estimated CLP SOW results are

similarly provided for preliminary assessment purposes only. Estimated data is not intended for use in determining regulatory compliance issues.

Internal Quality Control

i. **Field Quality Control** - Field QC procedures are summarized in Section 2.0.

ii. **Analytical Quality Control** - Analytical QC procedures for CLP analytical techniques are guided by adherence to CLP deliverables. All QC data and records generated by the laboratory were examined for adherence to method requirements by Draper Aden Associates. A laboratory QC report generally consists of the following components:

- spikes
- blanks
- duplicates
- raw data
- surrogate parameters
- instrument adjustment
- calibration
- quantification
- chromatograms
- additional QC requirements (organic and inorganic)

For this project, QC reports are provided with the target parameter analytical results for all sampling events.

4.0. DATA VALIDATION

The CLP analyses were performed in adherence to the relevant CLP-SOW. Results of the CLP-SOW analyses were summarized and reported by the analyzing laboratory in standard CLP reporting format. SW-846 analyses were performed in adherence to relevant SW-846 method requirements and guidance. Draper Aden Associates conducted data validation of each data set. The results from each sampling event were evaluated in association with corresponding QA/QC information provided by the analyzing laboratory.

4.1 Laboratory Reporting Qualifiers

Two different types of qualifiers were associated with laboratory analyses and data validation: **laboratory reporting qualifiers** and **data validation qualifiers**. The laboratory used **laboratory reporting qualifiers** to flag sample results with reference to relevant QA/QC criteria. Laboratory reporting qualifiers were unique to the analyzing laboratory and are defined in the laboratory data package. In addition to the laboratory reporting qualifiers, project specifications required the laboratory performing the analytical services to utilize the following additional data qualifiers and definitions:

Qualifiers

D - Denotes the sample was diluted to obtain the result.
S - Method of Standard Additions was utilized to obtain the result.
E - Laboratory recoveries fell outside EPA control limits. Results are approximate.

TI - The laboratory tentatively identified the parameter.

Definitions

CRDL	Contract Required Detection Limit (associated with CLP-inorganics only).
IDL	Instrument Detection Limit (Associated with CLP-inorganics only). Inorganic Data qualified with a "U" refers to IDL.
CRQL.	Contract Required Quantitation Limit (associated with CLP organics only). Organic Data qualified with a "U", refer to CRQL.

4.2 Data Validation Qualifiers

Data validation was completed using guidance from the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", (Document 1) USEPA, February, 1993.

Data Validation was performed on the results presented in the laboratory analysis report, and the validated results were flagged, where required, using the appropriate CLP data validation qualifiers. Definitions of the nationally recognized data validation qualifiers used by Draper Aden Associates in the validation process and for the reported results are presented below.

Organic Data Validation Qualifiers

U - The parameter was analyzed for, but was not detected (the numerical value associated with the data validation qualifier is the reported sample LOQ for organics and the reported sample IDL for inorganics).

J - The parameter was positively identified; the associated numerical value is the approximate concentration of the parameter in the sample.

N - The analysis indicates the presence of a parameter for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of a parameter that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The parameter was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the parameter in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the parameter cannot be verified.

Inorganic Data Validation Qualifiers

U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is the sample detection limit.

J - The associated value is an estimated quantity.

R - The data are unusable. (Note: Parameter may not be present)

UJ - The material was analyzed for, but was not detected. The associated result is an estimate and may be inaccurate or imprecise.

4.3 Organic Data Review

CLP Volatile Organic Data Review

Draper Aden Associates performed a limited review of the analytical results for volatile organic parameters analyzed according to the requirements of EPA CLP 5/99 SOW document number OLM04.3. The reduced list of twelve target parameters included dichlorodifluoromethane.

CompuChem performed the CLP analysis and submitted results to Draper Aden Associates in a final certificate of analysis, which included sample analytical results as well as relevant documentation to validate and verify the analytical results.

The evaluation of CompuChem's compliance with the method was based on a limited review of the following items: QC deliverables package, case narrative, technical holding time and preservation requirements, instrument performance check, instrument calibrations, blank analysis, system monitoring recoveries, matrix spike/matrix spike duplicate (MS/MSD) analysis, internal standard requirements, laboratory control samples (LCS), and confirmation of detected analytes. Review of transcriptions from raw data to summary sheets was performed. Specific representative calculations were not performed except where noted. The following information is intended to summarize data review results and any observed significant deviations from method and/or contractual requirements.

The original certificate of analysis presented data which were of acceptable quality. All holding time, preservation, BFB tuning, initial and continuing calibration, blank, system (surrogate) monitoring, MS/MSD, internal standard and LCS requirements were met, unless where noted below. No transcription errors were noted.

Target analytes were detected both above and below the contract required quantitation limit (CRQL). Based on historical data, sample MW-2 required a 1:5 dilution.

4.4 Inorganic Data Review

CLP Inorganic Data Review

Draper Aden Associates performed a limited review of the analytical results for six inorganic target parameters: barium, chromium, cobalt, iron, nickel and vanadium analyzed per EPA CLP ICP Method ILM04.1. Sample MW-3 was designated as the quality control (QC) sample for duplicate and matrix spike analyses.

CompuChem performed all the inorganic analyses and submitted results in a final certificate of analysis which included sample analytical results as well as relevant documentation to verify and validate the results. The results of this data validation presented here are based

upon a review of QA/QC information including holding times, preservation procedures and standards, spike analysis on sample matrix, blank samples analyses (method, trip, and calibration blanks), duplicate sample analyses, interference check sample results, laboratory control samples (LCS), serial dilution criteria, IDL/CRDL information. Review was performed on all summary sheets provided by the laboratory, unless a notable discrepancy in the data package required additional review of the raw data. The completeness of this data package was verified including the presence of raw analytical data, chain of custody and preparation logs.

All applicable holding time and preservation criteria were met.

CLP-ICP SOW ILM04.1

The original certificate of analysis appeared complete in its presentation and the data were of acceptable quality. The certificate of analysis demonstrated the ability of the laboratory to achieve the reported contract required detection limit (CRDL) for each target parameter. All CRDLs were equal to or less than the respective USEPA MCL drinking water standard and North Carolina groundwater quality standards, where applicable.

All relevant instrument calibration and calibration verification criteria were met. All CRDL standards recovered within control limits, where applicable. Interference check sample (ICS-AB), spike sample and laboratory control samples recovered within control limits. Representative duplicate sample analysis results were also within control limits. All applicable serial dilution criteria were met. No blank detections influenced sample results.

All sample results greater than the CRDL and unaffected by the above data validation process were recorded as reported by the laboratory. Sample results reported between the instrument detection limit (IDL) and CRDL were qualified as estimated and flagged "J."

5.0 DISCUSSION OF RESULTS

Tables 2A-C (Appendix A) provide a summary of the target analytical results obtained from the April 2006 sampling event. A review of the concentration trends obtained from twenty assessment events conducted since 1994 (Tables 5A-C) indicates significant decreases in target parameter concentrations have occurred in both the groundwater and surface water across the site since the remedial cap was installed in the fall of 1996. The target parameter delineation maps provided in the July 1999 and August 2002 event reports illustrated these decreases in terms of the site conceptual model.

Draper Aden Associates validated the results according to the discussion provided in Sections 3.0 and 4.0 of this report. Tables 2A-C list for each parameter, as applicable, an MCL established by the USEPA and groundwater quality standard established by the state of North Carolina, the CRQL/LOQ, and the analytical method. Estimated analytical results are provided for preliminary assessment purpose only and are not intended for use in determining regulatory compliance issues.

5.1 Assessment Monitoring Results

Target Organic Parameters

The analytical results for the ten target organic parameters detected during the April 2006 Assessment sampling event are summarized in Tables 2A and 2B. Six core subset monitoring wells and five surface water locations were analyzed on this event. Two potable-use private wells, one non-potable use private well, and the former BREMCO well were also sampled. With the exception of a laboratory contaminant, no organic constituents were detected in the private wells. The results are individually discussed for each target parameter below.

Benzene. Benzene was estimated at 3 µg/l, below the quantitation limit of 10 µg/l, but above the NC groundwater quality standard of 1 µg/l, at one well (MW-9). Note that benzene concentrations, historically detected above the EPA MCL at only one monitoring well, MW-8, have only been observed at levels below the EPA MCL since 1997. Benzene was not detected at MW-8 in April 2006.

Chloroethane. Chloroethane was detected at concentrations above the quantitation limit of 10 µg/l at three wells (MW-3, MW-8, and MW-12), and estimated at a concentration below the quantitation limit at one well (MW-9). All concentrations were considerably below the NC groundwater quality standard of 2800 µg/l. No EPA MCL has been established for chloroethane.

Dichlorodifluoromethane. Dichlorodifluoromethane was estimated at 2 J µg/l, below the quantitation limit of 10 µg/l, at one well (MW-9), considerably below the NC groundwater quality standard of 1400 µg/l. No EPA MCL has been established for dichlorodifluoromethane.

1,1-Dichloroethane (1,1-DCA). The daughter product 1,1-DCA is the most commonly detected target parameter at the site. 1,1-DCA was detected above the quantitation limit at five of the six core subset wells, and below the quantitation limit at the remaining well (MW-17). No concentrations were above the NC groundwater quality standard of 700 µg/l. No EPA MCL exists for 1,1-DCA. Note that after decreasing between 1994 and 2002, significant increases in concentrations of 1,1-DCA were observed at MW-2 between 2002 and 2005. In April 2006, concentrations of 1,1-DCA at MW-2 have decreased again.

1,1-Dichloroethene (1,1-DCE). 1,1-DCE was detected at one core subset well (MW-2). The concentration of 1,1-DCE at MW-2 of 110 µg/l exceeded the EPA MCL and NCS of 7 µg/l. Note that after decreasing between 1994 and 2002, significant increases in concentrations of 1,1-DCE have been observed at MW-2 between 2002 and 2005. In April 2006, concentrations of 1,1-DCA at MW-2 have decreased again.

cis-1,2-Dichloroethene (cis-1,2-DCE). The daughter product cis-1,2-DCE was detected at five core subset wells (MW-2, MW-3, MW-9, MW-12, and MW-17). The concentration was above the EPA MCL and NCS of 70 µg/l at MW-3 (i.e., 98 µg/l).

Note that except for recent concentrations at MW-3 in 2005 and 2006, cis-1,2-DCE concentrations in the west drainage, historically detected above the EPA MCL and NCS, have generally decreased to levels below the MCL and NCS.

Tetrachloroethene (PCE). PCE was estimated at concentrations below the quantitation limit of 10 µg/l at all six core subset wells. PCE concentrations were estimated above the EPA MCL of 5 µg/l at MW-3 (6 J µg/l), and above the lower NCS of 0.7 µg/l at the remaining five wells.

Note that except for a March 2004 exceedance at MW-2, PCE concentrations at MW-2 have decreased to levels below the EPA MCL. PCE concentrations in the west drainage, although steadily decreasing, had not reached concentrations at or below the EPA MCL until recent events. In April 2006, no PCE concentrations were above the EPA MCL in the west drainage.

Trichloroethene (TCE). TCE was estimated at concentrations below the quantitation limit of 10 µg/l at five core subset wells (all except MW-2). TCE was detected at concentrations below the EPA MCL, but above the lower NCS of 2.8 µg/l, at two wells (MW-3 and MW-12).

Note that until March 2004, TCE concentrations at MW-9, located in the southern saddle, had decreased to levels below both the EPA MCL and lower NCS. In 2003, no TCE was detected in MW-9, yet in March 2004, TCE concentrations were equal to the EPA MCL in MW-9. Between September 2004 and April 2006, TCE concentrations at MW-9 decreased back to levels below both the EPA MCL and lower NCS. TCE concentrations in the west drainage, steadily decreasing, reached concentrations below the EPA MCL in 2003, when no TCE concentrations were above the EPA MCL, yet in March 2004 and October 2005, TCE concentrations were above the EPA MCL in two wells in the west drainage. No TCE concentrations we above the MCL in April 2006.

1,1,1-Trichloroethane (1,1,1-TCA). 1,1,1-TCA was detected above the quantitation limit at MW-2 (700 µg/l) and below the quantitation limit at MW-9 (1 J µg/l). Similar to 1,1-DCE, the 1,1,1-TCA concentrations at MW-2 were considerably above the EPA MCL and NCS of 200 µg/l. Note that prior to July 2003, 1,1,1-TCA concentrations in MW-2 had decreased to levels below the EPA MCL.

Vinyl Chloride. Vinyl chloride was estimated at concentrations below the quantitation limit of 10 µg/l at two wells (MW-3 and MW-12). Concentrations were above the EPA MCL of 2 µg/l, and above the lower NCS of 0.015 µg/l, at both wells.

Chlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichloroethane, trans-1,2-Dichloroethene, 1,2-Dichloropropane, and Methylene Chloride. The remaining six target parameters, as identified above, which were not detected on the April 2006 event (via CLP analytical methods).

Note that all were detected at low concentrations, near the quantitation limit of 0.5 µg/l, in September 2005 (via method 8260B, 25 ml).

Non-Target Organic Parameters

Two non-target parameters were detected at select monitoring wells or surface water sampling locations. Ethyl ether was tentatively identified at the same estimated concentrations of 6.47 µg/l and 6.48 µg/l at three monitoring wells (MW-3, MW-8, and MW-12) and one surface water sampling point (S-2). The distribution and similar concentrations of the ethyl ether detections indicate a laboratory/sampling origination rather than groundwater impact. Trimethylsilanol was also tentatively identified at an estimated concentration of 8.75 µg/l at MW-8. Both of these non-target parameter constituents do not have established EPA MCLs or NCS.

5.2 Potable Well Sampling Results

The initial domestic and commercial use potable well sampling event was developed and conducted by Draper Aden Associates on March 5, 1993 at the direction of Watauga County and approval of State officials to protect public health and welfare. Between 1994 and 2000, the potable water well sampling and analysis program was jointly conducted by the Appalachian District Health Department (ADHD) and the NC State Laboratory of Public Health. Recent potable well sampling events between 2001 and 2005 have been conducted by Draper Aden Associates at the direction of Watauga County and oversight of State officials.

The objective of the potable well sampling and analysis program is to investigate and evaluate the potential influence and associated risks of the landfill on neighboring groundwater resources. Samples collected by the ADHD (prior to 2000) were analyzed for volatile organic compounds by the State Laboratory utilizing EPA Method 502.2. The State laboratory confirmed any detect via mass spectrometry. Samples collected by Draper Aden Associates (after 2000) were analyzed via GC/mass spectrometry utilizing EPA Method 524.2. The EPA Method 524.2 employs automatic confirmation. Potable water well locations with accompanying sampled well reference number can be found on the Site Map (Figure 1). A summary of the analytical results of the potable well testing program collected to date are presented in Appendix D.

The analytical results obtained in 1993 and 1994 indicated organic constituents at concentrations above health-based standards at two of forty-five sampled potable wells neighboring the landfill. These two wells, the Carroll residence well (well reference no. 12) and the Nissan-Mazda Dealership well (well reference no. 4), were replaced by connections to the Town of Boone's public water system in 1995.

To date, fifty-five wells neighboring the landfill have been sampled. At this time, the cause or source of all the organics detected in the potable well sampling program cannot be determined. It should be noted that eight of twenty-one compounds that were detected in the Carroll residence well in 1993 have not been detected in the landfill monitoring well network. The differences in parameter "fingerprints" in groundwater beneath these sites compared to "fingerprints" for landfill

wells tends to indicate potential impacts resulting from activities specifically undertaken on these sites and/or immediately around the private well heads and/or components of the well systems.

Between 1995 and 1999, concentrations of target organics in wells located south of the southern saddle steadily diminished to non-detect levels. Despite the absence of target organics in the potable wells located south of the southern saddle, the County and the Town provided public water to nine residences located south of the southern saddle in 2000. Trace levels of target organic compounds were previously detected in the wells serving these residences. The subject wells include well reference numbers 11, 12, 14, 24, 20 and 33. Well reference number 14 serves four residences. Wells that have been replaced with connections to public water are noted on Figure 1. Connections to public water are also indicated on the summary tables (Appendix D).

Ten residential wells located south of the southern saddle, just outside the area current served by public water, were sampled in March 2005. Although a suspected laboratory contaminant (methylene chloride) was detected at one well at an estimated concentration equal to the detection limit of 0.5 µg/l, no other constituents were detected. This well, located at 142 Green Briar Lane (well reference no. 21), was resampled during the October 2005 event, and no constituents were detected. The residence, only seasonally occupied, was unoccupied and not sampled in April 2006.

As noted above, trace organic levels detected in wells located south of the southern saddle in 1992 and 1993, have diminished to non-detect levels. Between June 1997 and May 2001, trace organic levels, below the minimum detection limit, were only detected in one well located south of the saddle, reference no. 24. The residence declined to be connected to public water and was unoccupied in 2005. Since 2001, only three trihalomethanes (chloroform, bromodichloromethane and dibromochloromethane) have been detected in well reference no. 24, in February and August of 2002, these compounds were not detected in January or July of 2003, or March 2004. Trihalomethanes have not been detected in the groundwater monitoring wells surrounding the landfill and are a known byproduct of well chlorination. Chloroform, in particular, is frequently detected in chlorinated residential wells.

The April 2006 sampling results from are comparable to previous results and concentration trends. Review of the analytical results from all the potable well sampling conducted previous to 2001 was performed by the NC Department of Epidemiology. The reviews indicated that the sampled residential well waters are acceptable for all uses due to non-detection of organic analytes. Individual analytical results obtained in April 2006 are discussed below.

April 2006 Sampling

Draper Aden Associates sampled two business wells, one no longer in-use, and three residential wells, on April 5, 2006. The well samples were analyzed for 59 organic constituents via EPA Method 524.2, by Lancaster Laboratories of Lancaster Pennsylvania, a NC state-certified lab for EPA Method 524.2. Samples were collected from the following five wells:

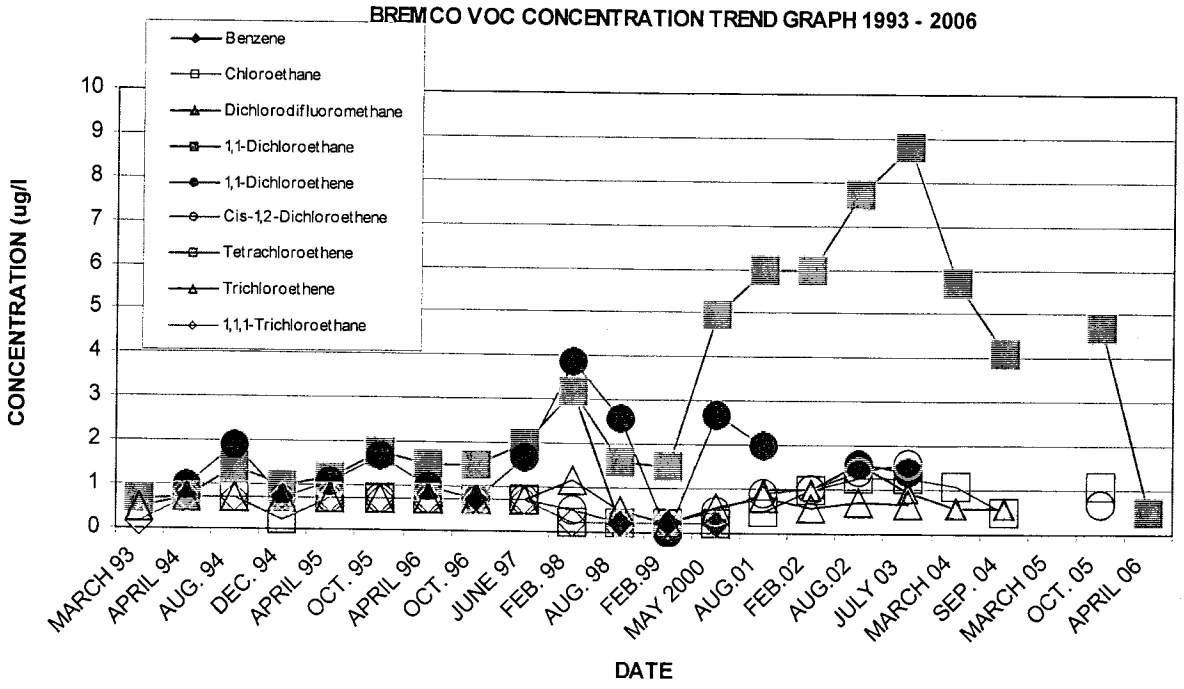
BREMCO, 2491 Hwy 421 South (well reference no. 3)

Hollar and Greene Produce (well reference no.4)
Mrs. Bolick, 2239 Hwy 421 South (well reference no. 1)
Mr. and Mrs. Greer, 2711 Hwy 421 South (well reference no. 15)
Mr. and Mrs. Williamson, 2737 Hwy 421 South (well reference no. 16)

A suspected lab contaminant, methylene chloride, was reported at the same trace concentrations (0.8 and 0.9 ug/l) in the samples from all five wells. Methylene chloride has never been detected at any of these five locations. No additional constituents were detected in four of the sampled wells and only one additional constituent (1,1-DCA) was detected at the BREMCO well.

All of these wells have been sampled previously. The Williamson and Greer residences' potable wells have been re-sampled semiannually since August 2001, after the detection of tetrachloroethene at less than 1.0 ppb in February 2001; tetrachloroethene has not been detected since. Note the Williamson residence was connected to public water in 2004; the Greer residence declined to be connected to public water.

As indicated by the concentration graph provided below, organic concentrations in the BREMCO well are typically less than 2 µg/l for most of the detected constituents. Only 1,1-DCA and 1,1-DCE concentrations range higher, historically ranging up to 4 µg/l, 8 µg/l, respectively. All concentrations are below associated NCS or EPA MCLs.



After using bottled water since 1993, BREMCO was connected to public water in 2003. The County arranged for approval for hookup of BREMCO without Town annexation and assisted with installation of the BREMCO connection. The Williamson residence, BREMCO, the Bolick residence and the Bolick rental residence, all situated along route 421, were connected to public

water in 2003 and 2004. The Greer residence declined to be connected to public water. The County covered availability fees, tap on fees, and the connection costs associated with the private residences. In order to complete the connection to the Williamson residence, the County also completed a survey and arranged purchase of an easement across the Greer property.

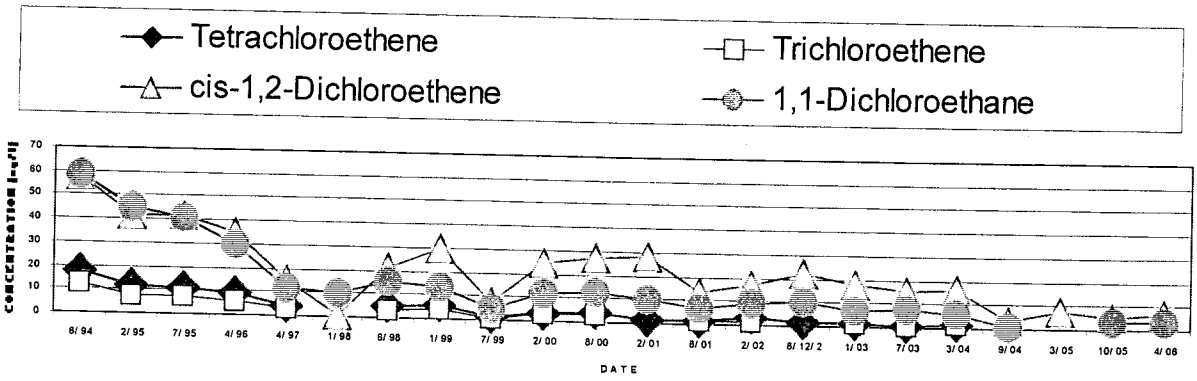
5.3 Distribution Trend Evaluation

Monitoring results indicate significant reductions in the extent and concentration of impact have occurred across the site. Although the northern edge of the occurrence of assessment target constituents in the groundwater continues to primarily exist within the right-of-way for the Route 421 bypass, reductions of concentrations and extent are observed to the south. South of the bypass, the detection of assessment target constituents continues to be concentrated between the saddle, located between the landfill and the Rocky Mountain Heights Subdivision, and the west and north drainages below the landfill.

West Drainage - In October 2005, ten target constituents (no benzene, dichlorodifluoromethane, or methylene chloride) were detected at select west drainage wells (MW-3, MW-8, MW-12, and MW-17). Cis-1,2-DCE, PCE, and vinyl chloride were detected above the EPA MCL at MW-3; no constituents were detected above the EPA MCL at the adjacent deeper well MW-17. Vinyl chloride was detected above the EPA MCL at MW-12. PCE was additionally detected above the lower NCS of 0.7 µg/l at MW-8, MW-12 and MW-17, and TCE was detected above the lower NCS of 2.8 µg/l at MW-3 and MW-12.

Historically, four constituents are typically detected at the west drainage surface water sampling point S-4 (PCE, TCE, cis-1,2-DCE and 1,1-DCA). No organic parameters are detected at location S-6, located approximately 800 feet downstream from S-2. Prior to September 2004, these four organic constituents were consistently detected at S-4. Presently only 1,1-DCE and cis-1,2-DCE are detected at S-4, and only cis-1,2-DCE was detected in March 2005. As indicated in the following trend graph, concentrations have decreased significantly since 1994.

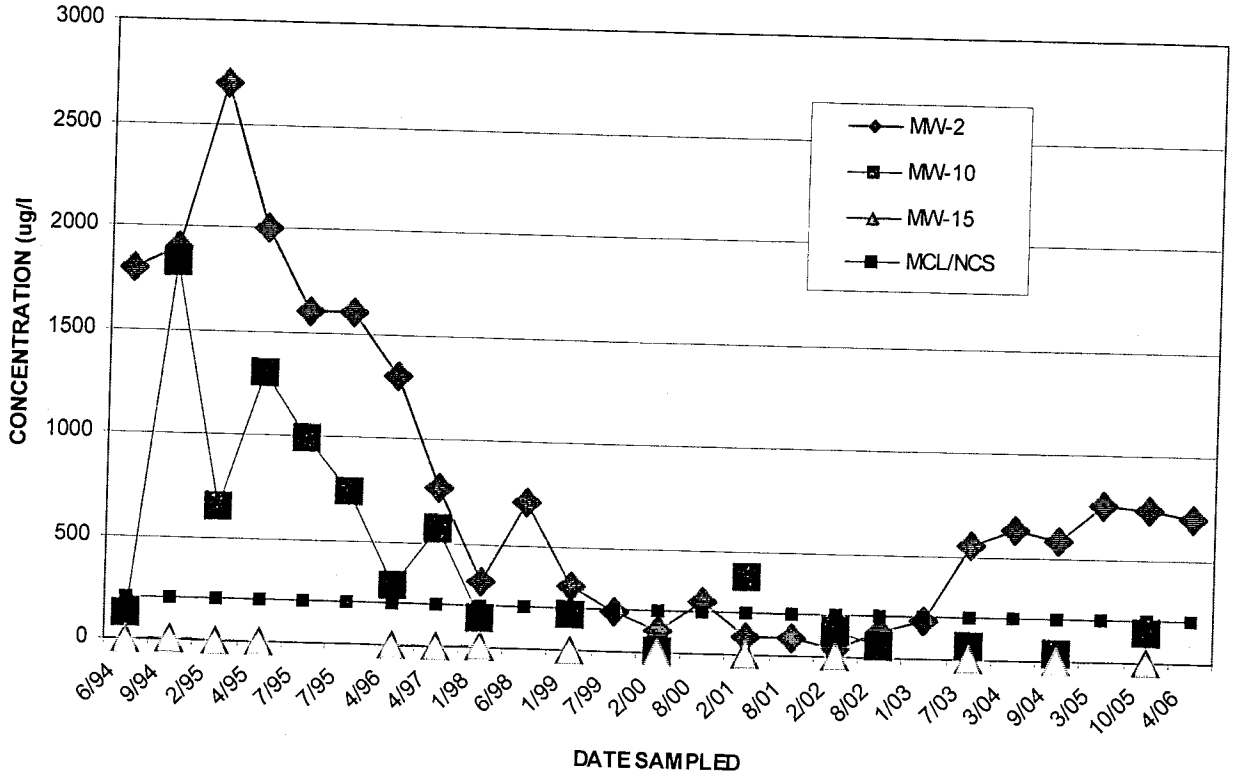
S-4 VOC CONCENTRATION TRENDS 1994-2006



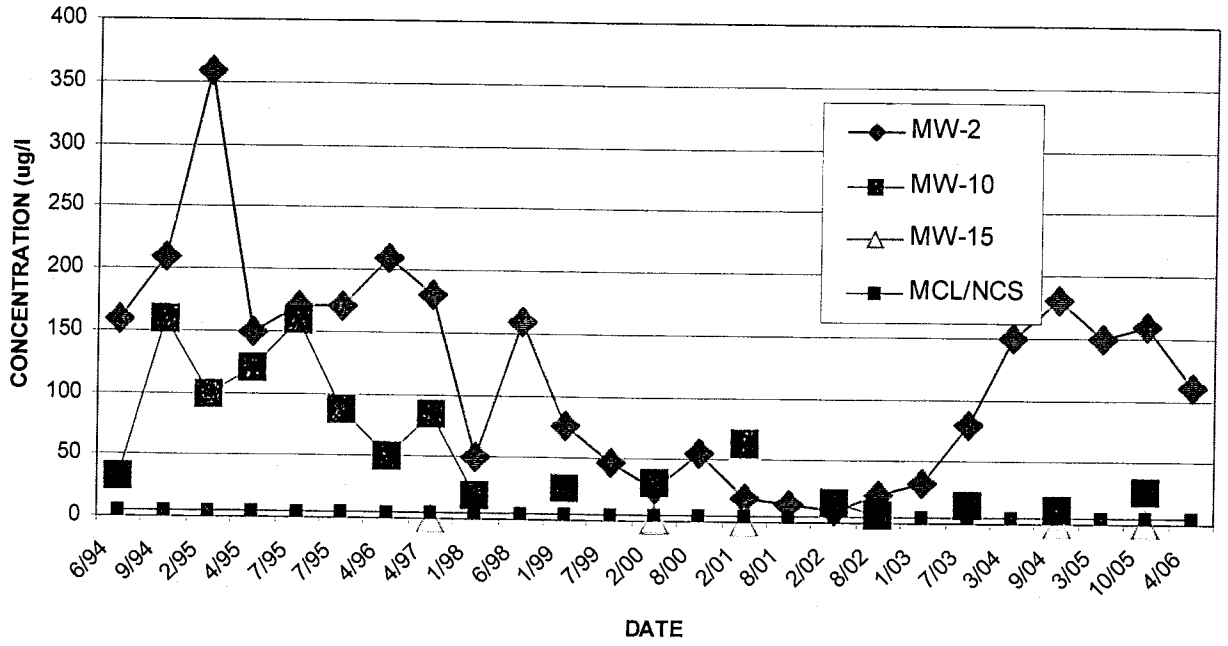
North Drainage - In the north drainage, the detection of organic constituents is confined to the bedrock aquifer. Historically, a total of four organic constituents (1,1-DCA, 1,1-DCE, 1,1,1-TCA and PCE) are typically detected in the north drainage at bedrock wells MW-2 and MW-10. These same four organic constituents were detected at MW-2 in April 2006.

Elevated concentrations of 1,1-DCE and 1,1,1-TCA historically observed at MW-2 indicate preferential migration to deeper fracture zones within the bedrock in the north drainage. The concentration of three constituents, 1,1-DCE, 1,1,1-TCA and PCE, historically exceeded their respective EPA MCLs in both MW-2 and MW-10. As noted by the following concentration trend graphs, between 1998 and 2000, the concentrations of 1,1,1-TCA and PCE decreased to levels below their respective EPA MCLs in the north drainage. Note that after steadily decreasing from 1995 to 2002, 1,1-DCE and 1,1,1-TCA concentrations have increased during the past two years. In 2004 and 2005, all three constituents, 1,1-DCE, 1,1,1-TCA and PCE, were above the EPA MCL, and in March 2005, TCE was also estimated at a concentration above the EPA MCL at MW-2.

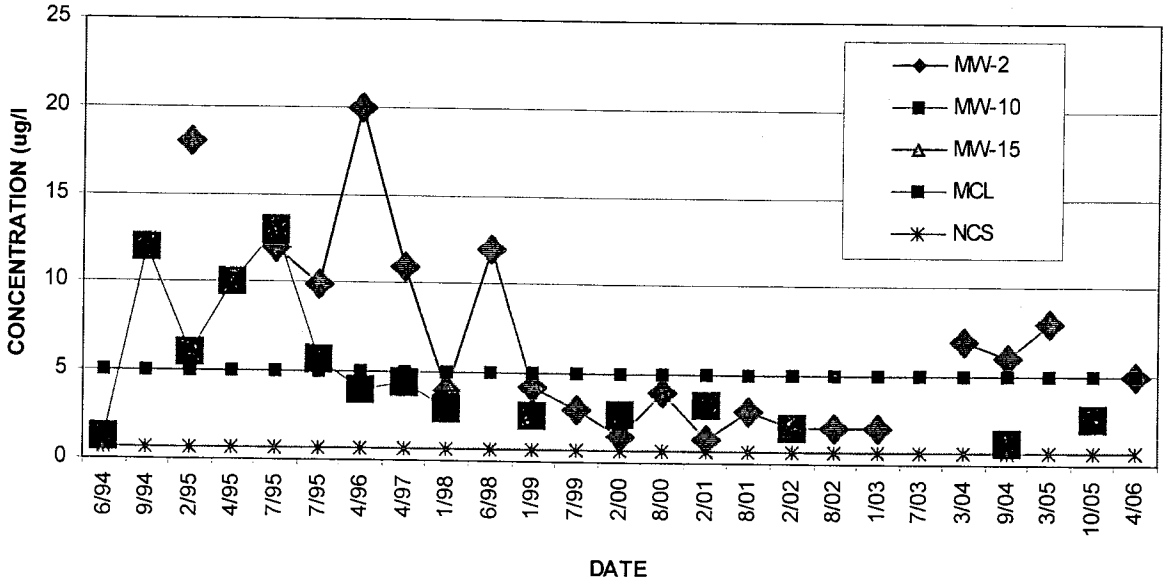
1,1,1-TRICHLOROETHANE CONCENTRATION TREND GRAPH
NORTH DRAINAGE
1994-2006



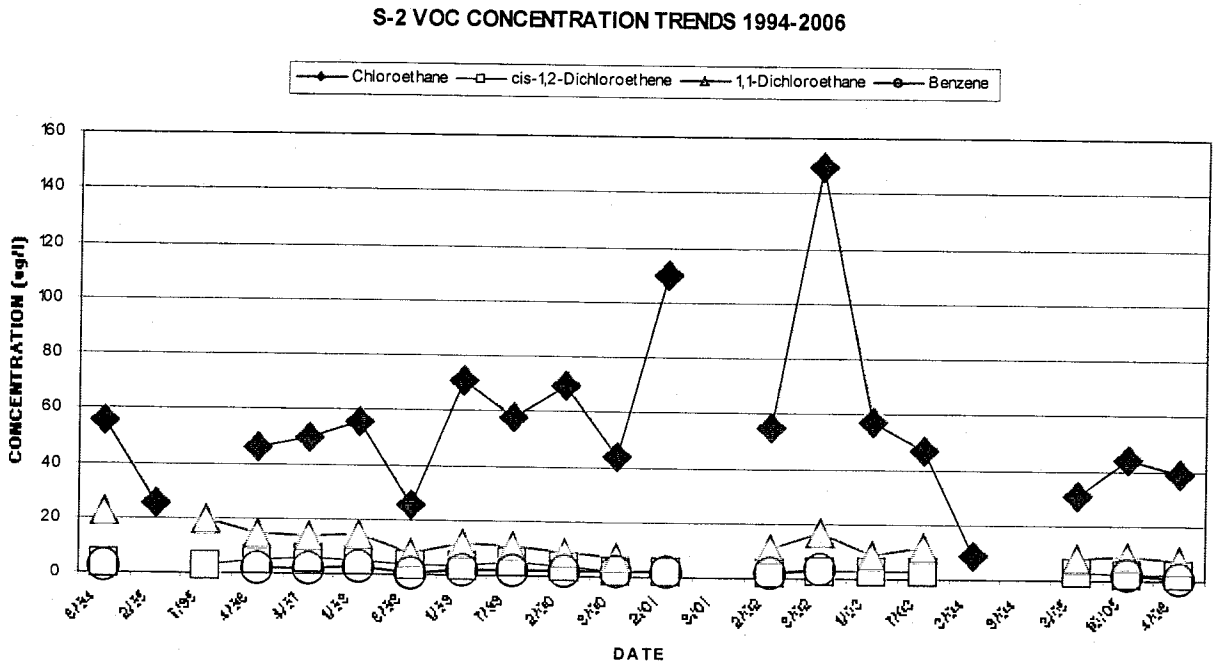
1,1-DICHLOROETHENE CONCENTRATION TREND GRAPH
NORTH DRAINAGE
1994-2006



TETRACHLOROETHENE CONCENTRATION TREND GRAPH
NORTH DRAINAGE
1994-2006



The following trend graph illustrates the concentrations of four organic constituents detected at the landfill spring capture outfall, S-2, located in the north drainage, since 1994.



Historically, four or five target organic constituents were typically detected at the landfill spring capture outfall, S-2, located in the north drainage. No constituents were detected at the surface water locations in September 2004, but in March 2005 and April 2006, five organic constituents, primarily daughter products, were detected at S-2. No organic parameters are detected at location S-3, located approximately 600 feet downstream from S-2. The concentrations are both currently and historically below NC surface water quality standards.

Downgradient of the northern drainage, groundwater within the bedrock aquifer system flows into the central Rocky Branch watershed aquifer and is apparently significantly diluted. The low-level detection of 1,1,1-TCA at MW-15 indicates that groundwater flow continues to follow the northern drainage orientation before reaching the apex of the watershed at Rocky Branch. 1,1-TCA was detected at 0.86 µg/l at MW-15 in October 2005.

Southern Saddle - Several organic compounds detected in MW-9, located along the southern saddle between the landfill and the Rocky Mountain Heights subdivision, particularly methylene chloride, have been historically observed at markedly different concentrations than the levels of the organic compounds detected in the remainder of the monitoring well network. In 1993, the abandoned Carroll residence well (reference no. 12), located approximately 100 feet from MW-9, was impacted by many of the same organic compounds. It should be noted that eight (8) of twenty-one (21) compounds detected in the Carroll residence well in 1993 were not detected in the landfill monitoring well network (including MW-9). The cause or source of the organics detected in the Carroll well was not established, although differences in the constituents detected in the Carroll

well compared to other landfill wells (including MW-9) indicates impact resulting from a source other than the landfill.

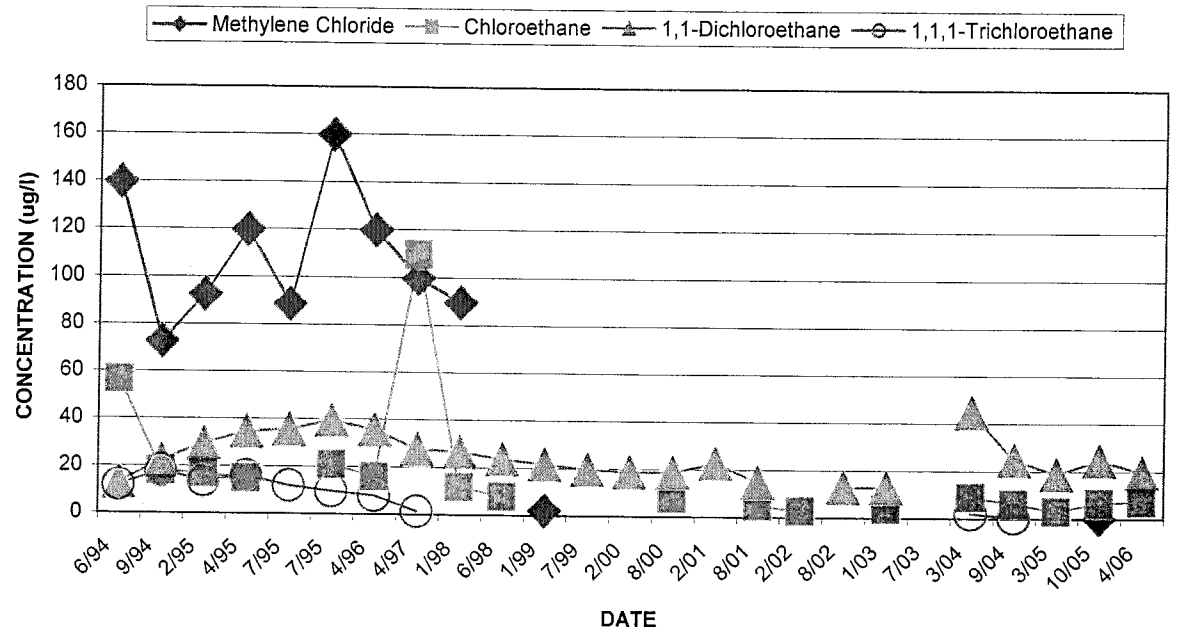
Trace levels of the same organic constituents detected in both the Carroll well and the landfill monitoring well network have also been previously detected in several other potable wells located south of the saddle. The frequency of detection of these trace levels has declined significantly between 1993 and 1999. Since June 1997, landfill related trace organic levels have only been detected in one well located south of the saddle (well reference no. 24). Only trace levels of the daughter product 1,1-DCA have been detected in well reference no. 24 since 1998, on only two of nine events, in 1999 and 2001. No landfill related trace organic levels have been detected in well reference no. 24 on six semiannual sampling events conducted since 2001. The residence at well reference no. 24 was unoccupied in 2005.

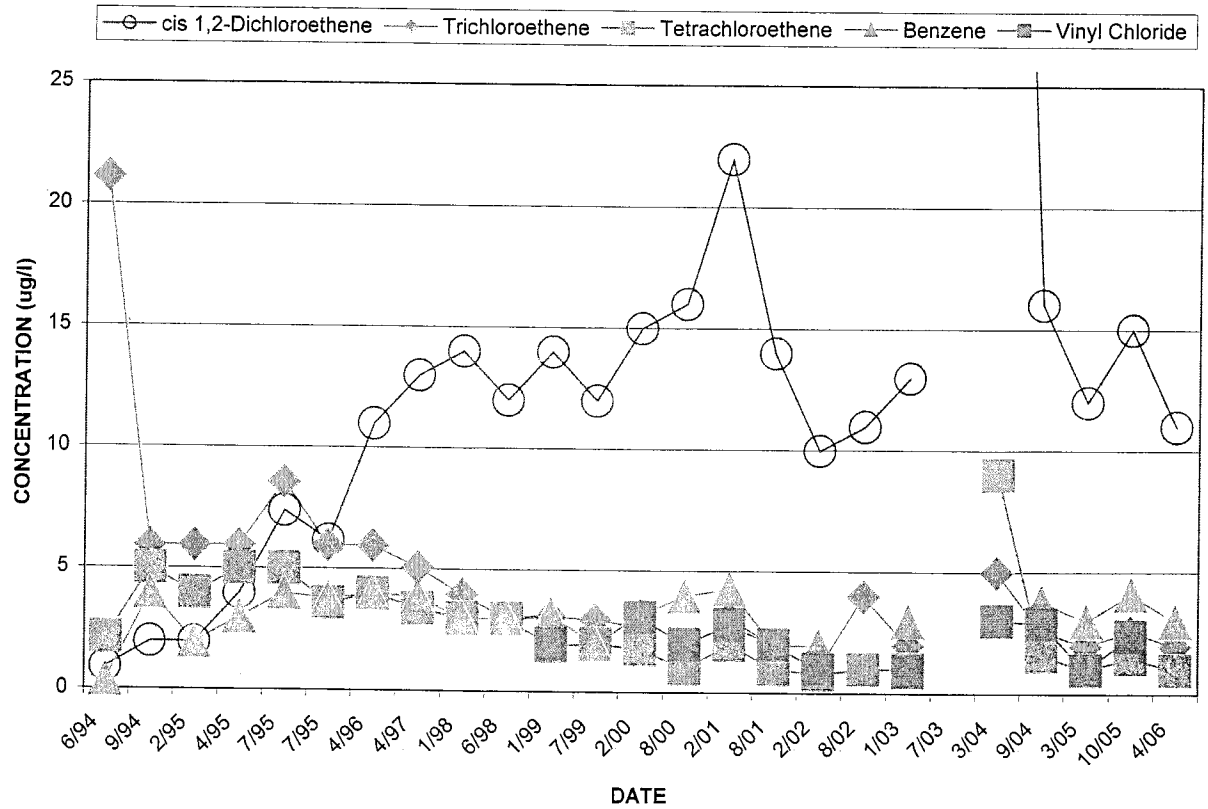
Ten residential wells located south of the southern saddle, just outside the area current served by public water, were sampled in March 2005. As discussed further below, although a suspected laboratory contaminant (methylene chloride) was detected at one well (well ref. no 21) at an estimated concentration equal to the detection limit of 0.5 µg/l, no other constituents were detected in any well located south of the southern saddle. Well reference No 21 was re-sampled in April 2006 and no organic constituents were detected.

As indicated by the following graphs, concentrations of target organic constituents have generally experienced declines at MW-9. Methylene chloride and trichloroethene concentrations, which historically exceeded their respective EPA MCLs at MW-9, have decreased to levels below their respective EPA MCLs since 1998. Prior to the April 2006 detection (below 1.0 µg/l), methylene chloride was last detected at MW-9 in January 1999. 1,1-dichloroethene was last detected at a concentration equal to the EPA MCL and NCS of 7 µg/l in August 2002, and tetrachloroethene and vinyl chloride were detected above respective NCS of 0.7 and 0.015 µg/l in August 2002, July 2003, and September 2004.

Although no organic constituents were detected at MW-9 in July 2003, the concentrations of several organic constituents (1,1-DCA, cis-1,2-DCE, and PCE) were at the highest levels recorded at MW-9 in March 2004. Three constituents (PCE, TCE, and VC) were at or above the EPA MCL and/or NCS. In October 2005, only VC was above the EPA MCL, and benzene and PCE were above the NCS, at MW-9. In April 2006, although no constituents were above the EPA MCL at MW-9, benzene and PCE continued to be above the NCS.

MW-9 VOC CONCENTRATION TRENDS 1994-2006





5.4 MNA Implementation

Site-specific sampling provides historical data for indirect evidence of the natural attenuation processes at the site and the rate of reduction of impact. Although North Carolina Groundwater Protection Standards continue to be exceeded at the site, the site conceptual model supports that contention that natural attenuation processes are successfully reducing the concentration, extent, and total mass of impact.

When compelling evidence has been presented to warrant selection of MNA as component of the remedial response, performance monitoring is initiated. MNA performance monitoring should evaluate the following:

- Physical and chemical changes in aquifer conditions,
- Physical changes in plume characteristics, and
- Chemical changes in the plume.

The performance monitoring network at Watauga County Landfill currently consists of sixteen monitoring wells screened at various select points of the contaminated portion of the aquifer as well as upgradient, sidegradient, and downgradient of impacted groundwater. Three additional monitoring wells have been abandoned. The semiannual monitoring program, initiated in 1994, has demonstrated a capability for evaluating these physical and chemical aquifer and plume characteristics. The potable well monitoring program, involving greater than 50 private wells in the vicinity of the site to date, provides additional performance monitoring capabilities. The current semiannual monitoring program at the site should continue to enable the evaluation of these physical and chemical changes.

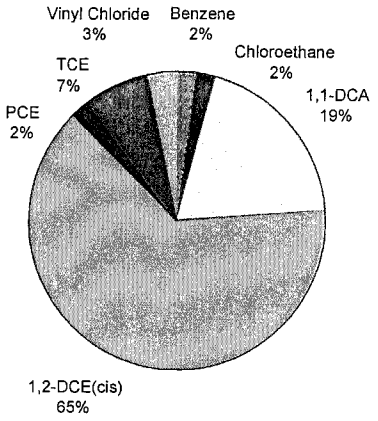
The collection of performance monitoring data will enable a determination of efficacy of the MNA remedial option. As demonstrated by the following evaluations of relative concentration trends and plume stability and behavior, ongoing monitoring confirms that constituent concentrations continue to trend as expected.

5.5 Relative Concentration Trend Evaluation

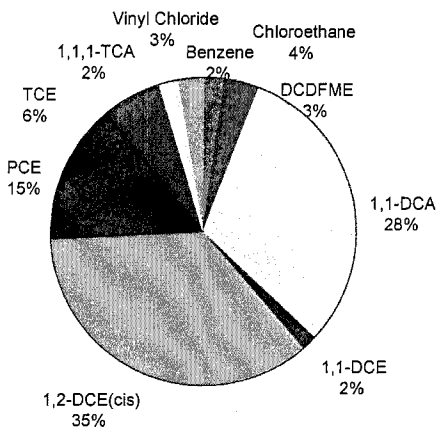
The comparisons of relative concentrations over time demonstrate the role of reductive reactions in the natural attenuation processes active across the site. PCE and TCE are common industrial solvents; 1,1-DCA and cis-1,2-DCE are not. When 1,1-DCA and cis-1,2-DCE are detected in groundwater, they are typically generated from the breakdown of PCE and TCE. Often this degradation process begins prior to placement of the solvent source. The reduction of PCE and TCE is a major factor in the shift in relative concentrations at the site to cis-1,2-DCE and 1,1-DCA. Although cis-1,2-DCE can be reduced to vinyl chloride in sulfate-reducing and methanogenic conditions, these reactions are much slower than the preceding reduction of TCE to cis-1,2-DCE. Note that further degradation can also be promoted via aerobic oxidation by cometabolism and therefore is favored in an aerobic zone.

The following relative concentration pie charts presentation was adapted from the SCR Update, dated January 2000. The pie charts illustrate the shift from parent to daughter products, as well as the shift from ethenes to ethanes, that has occurred in the west drainage since 1995. As shown below by the 1995 relative concentration pie charts for MW-6 and MW-8, the ethenes (PCE, TCE, 1,2-DCE) predominated in the upper portion of the west drainage prior to closure.

MW-6 (1995)

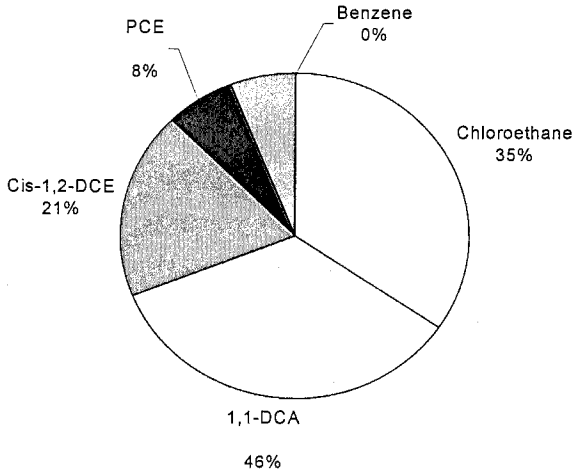


MW-8 (1995)



As shown below, the chlorinated ethanes, 1,1-DCA and chloroethane, are predominant in April 2005. This shift from ethenes to ethanes that has occurred since 1995 illustrates the role of reductive reactions in the natural attenuation processes active in the area adjacent to the waste.

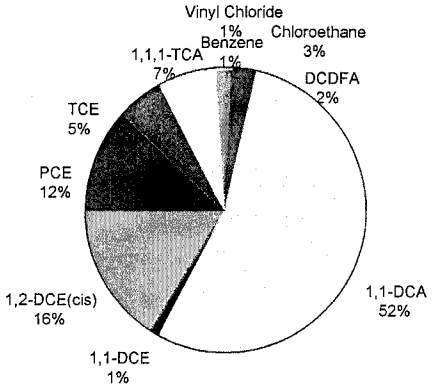
MW-8
APRIL 2005



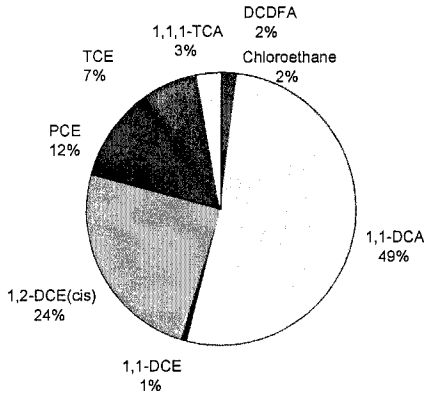
Of course, significant decreases in total organic concentrations have also occurred across the site, as illustrated in the graphs in Section 5.6.

As shown below by the 1995 relative concentration pie charts for MW-3 and MW-17, 1,1-DCA was prevalent downgradient along the west drainage in 1995. Note that the ethenes continued to persist in this area along the property boundary.

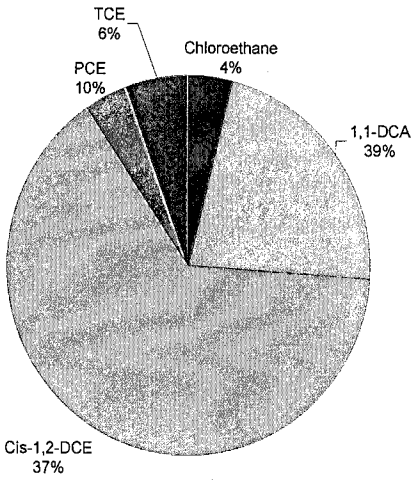
MW-3 (1995)



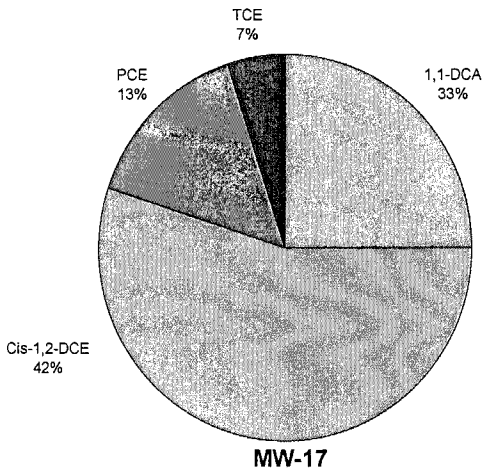
MW-17 (1995)



As shown below by the relative concentration pie charts for MW-3 and MW-17 in October 2005, a shift in relative concentrations from 1,1-DCA to cis-1,2-DCE has occurred since 1995. A primary daughter product of the anaerobic degradation of the more highly chlorinated ethenes is cis-1,2-DCE. The increased presence of cis-1,2-DCE is the result of reductive



MW-3
APRIL 2006



MW-17
APRIL 2006

processes naturally attenuating the organic parameters at this location. Note that although the shift in relative concentrations from 1,1-DCA to cis-1,2-DCE suggests that the system at this location is not degrading cis-1,2-DCE as efficiently, significant decreases in the concentrations both ethenes and ethanes are observed across the site, including this location.

Dechlorination is more rapid for highly chlorinated compounds than for compounds that are less chlorinated. The accumulation of cis-1,2-DCE may be attributed to the slower rates of DCE halorespiration when compared with TCE or PCE. Although many researchers have commented that reductive chlorination will result in the accumulation of vinyl chloride, at many sites, including the subject site, vinyl chloride accumulation is much lower than cis-1,2-DCE. This may occur because the vinyl chloride can migrate to zones that support direct oxidation of vinyl chloride, either aerobically and/or anaerobically (Wiedemeier et al., 1999).

1,1,1-TCA, which occurred at elevated concentrations in the north drainage in 1996, also appears to have been reduced by anaerobic degradation. Under anaerobic conditions, 1,1,1-TCA is known to degrade abiotically to 1,1-DCE and biotically to 1,1-DCA (EPA, 1992). 1,1,1-TCA is transformed to 1,1-DCE via dehydrohalogenation, 1,1 DCE is then reductively dehalogenated to vinyl chloride. The vinyl chloride is then either reductively dehalogenated to ethene or consumed as a substrate in an aerobic reaction and converted to carbon dioxide.

Both abiotic and biotic anaerobic reduction mechanisms appear to be contributing to the 1,1-DCE and 1,1-DCA currently found in the north drainage. 1,1-DCA appears to be the most widespread solid waste constituent at the site. Although not determined to be a health hazard, 1,1-DCA is reported as a fairly recalcitrant compound, with a low degradation rate in an anaerobic zone and an even lower degradation rate in an aerobic zone. This persistence contributes to the prevalence of 1,1-DCA at the site.

The indicator data currently being collected will further investigate the role of these natural attenuation reactions within various locations of the aquifer system. Although the ongoing collection of data should continue to demonstrate the natural attenuation processes active across the site, the collection of data relating to redox conditions will assist further characterization of the aerobic/anaerobic systems existing at the site. Information concerning other factors that may also limit degradation, including nutrient limitations, substrate availability, toxicity, pH, etc. can also assist in characterizing the state of the aerobic/anaerobic systems existing at the site.

5.6 Site Conceptual Model Refinement

MNA guidance recommends that parent and daughter product contour maps and cross-sections be prepared to allow interpretation of the data and the distribution and relative transport and degradation rates of constituents in the subsurface. Site Conceptual Model Updates provided in 2000 and 2002, presented both the past and current extent of parent and daughter products. Comparisons of past and current, parent and daughter product concentrations and extent were presented graphically in the SCM with both trend graphs and chronological vertical and horizontal

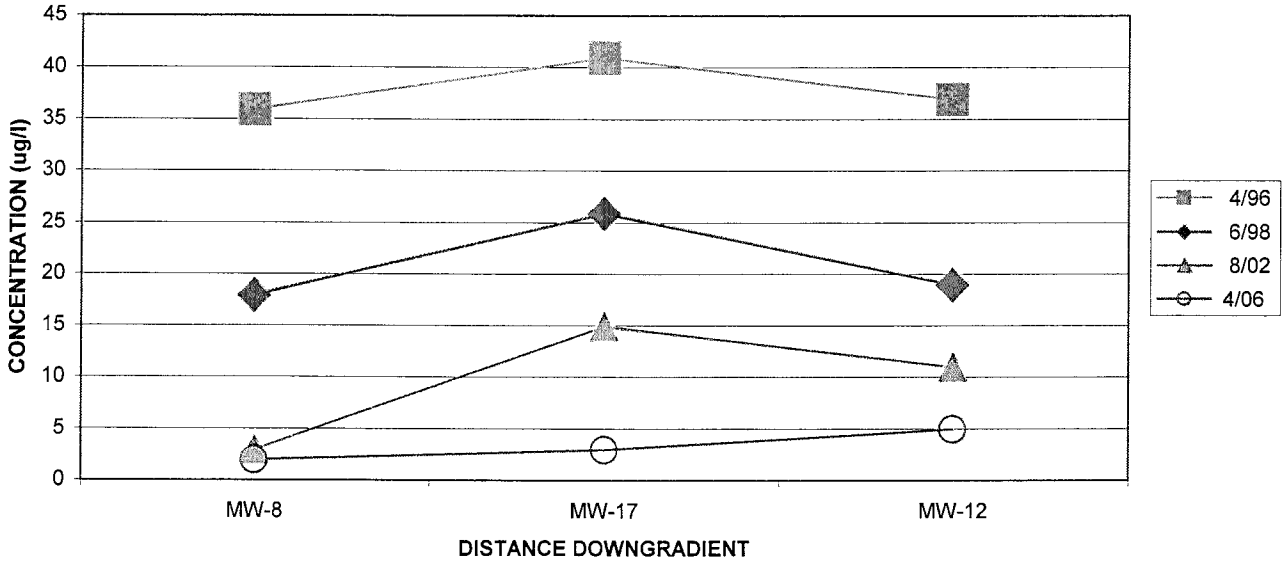
contour maps. Comparisons of relative concentrations over time were presented graphically with pie charts to illustrate the role of reductive reactions in natural attenuation processes across the site.

MNA guidance also recommends that contour maps be prepared for the natural attentuation indicator parameters as well. The SCM and subsequent monitoring event reports have included MNA indicator delineation maps. These delineation maps are provided to illustrate map indicator trends and chemical reactions influencing natural attenuation processes at the site. Updated indicator contour maps for data obtained in August 2002, involving the complete well network, was provided in the August 2002 Monitoring Event Report.

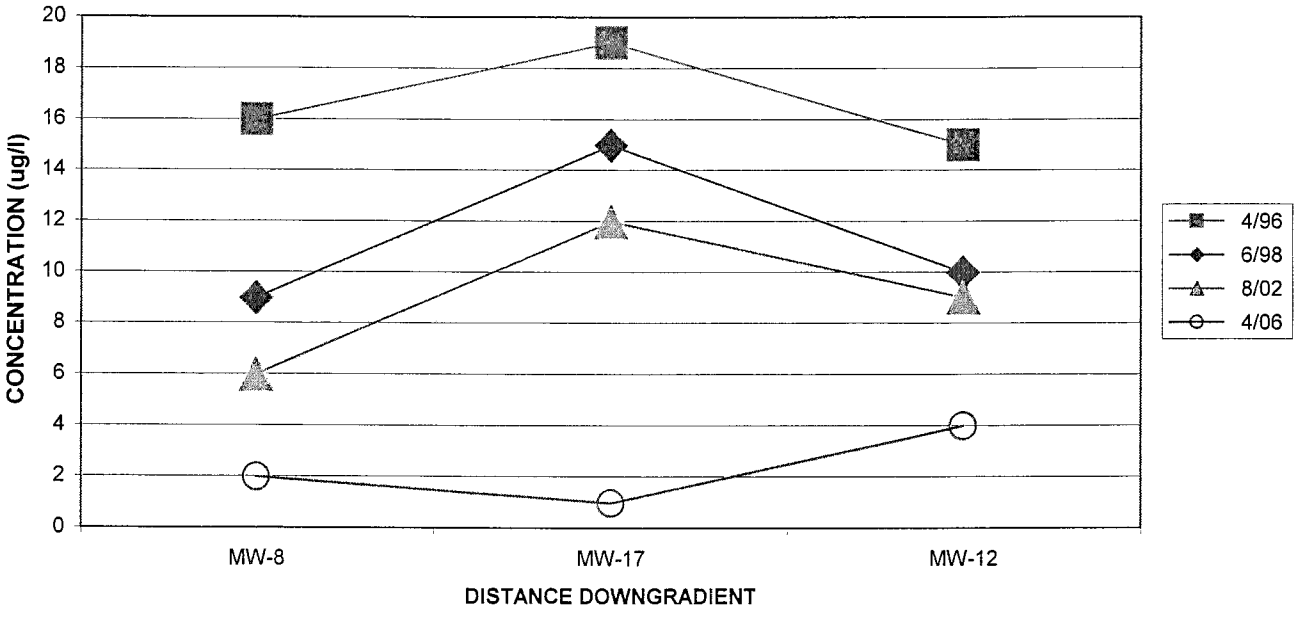
Graphical tests for evaluating plume stability and behavior have been established for evaluating the performance of natural attenuation (US AFCEE, 2000). These graphical tests are most successful at demonstrating natural attenuation is occurring at a site when the historical data is shown to display a statistically significant plume stabilization and/or loss of constituent mass over time. The graphical techniques for evaluating plume stability include 1) preparing isopleth maps of constituent concentration over time 2) plotting constituent concentrations versus time for individual wells, and 3) plotting constituent concentrations versus distance downgradient for several wells along the groundwater flow path over several events. Items 1 and 2 were evaluated extensively in the SCM and are revisited in this report. Item 3, plots of constituent concentrations versus distance downgradient, are provided below for the constituents PCE, TCE, 1,1,1-TCA and 1,1-DCE.

Note that the historical data for the parent constituents PCE and TCE is shown to display a statistically significant loss of constituent mass over time in the west drainage.

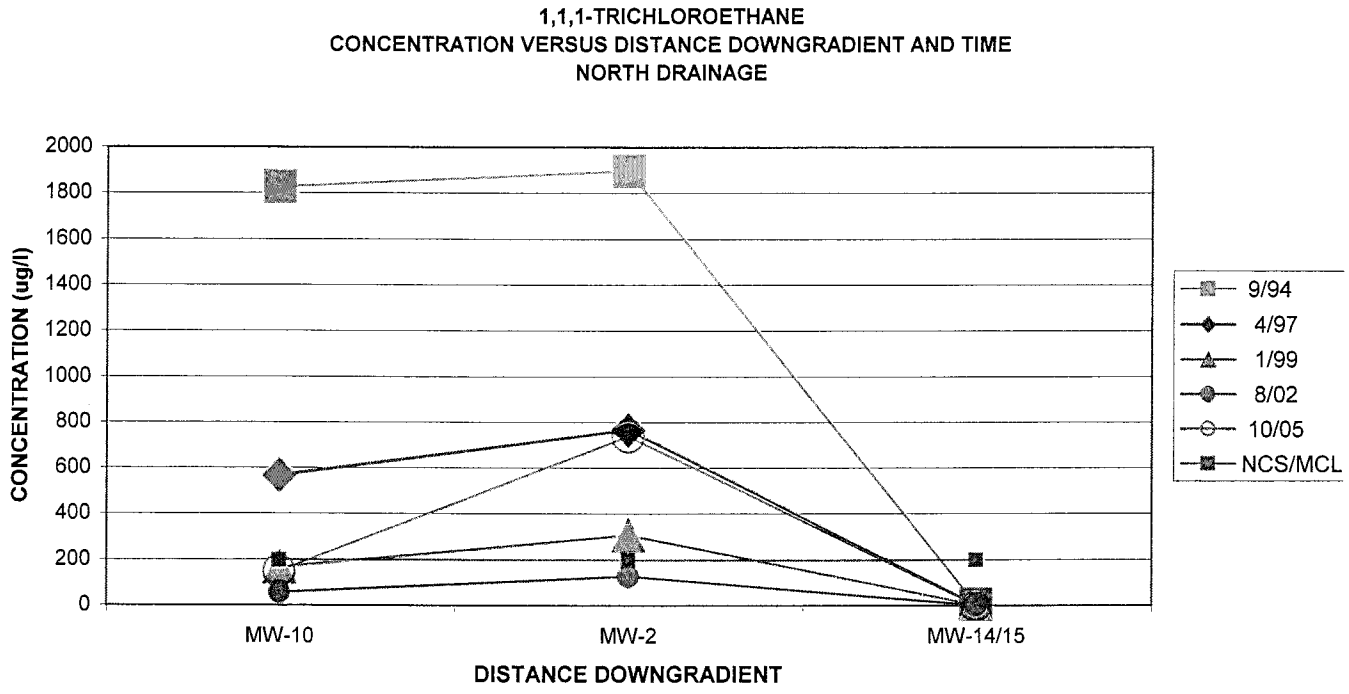
TETRACHLOROETHENE
PLOT OF CONCENTRATION VERSUS TIME AND DISTANCE DOWNGRADIENT
WEST DRAINAGE

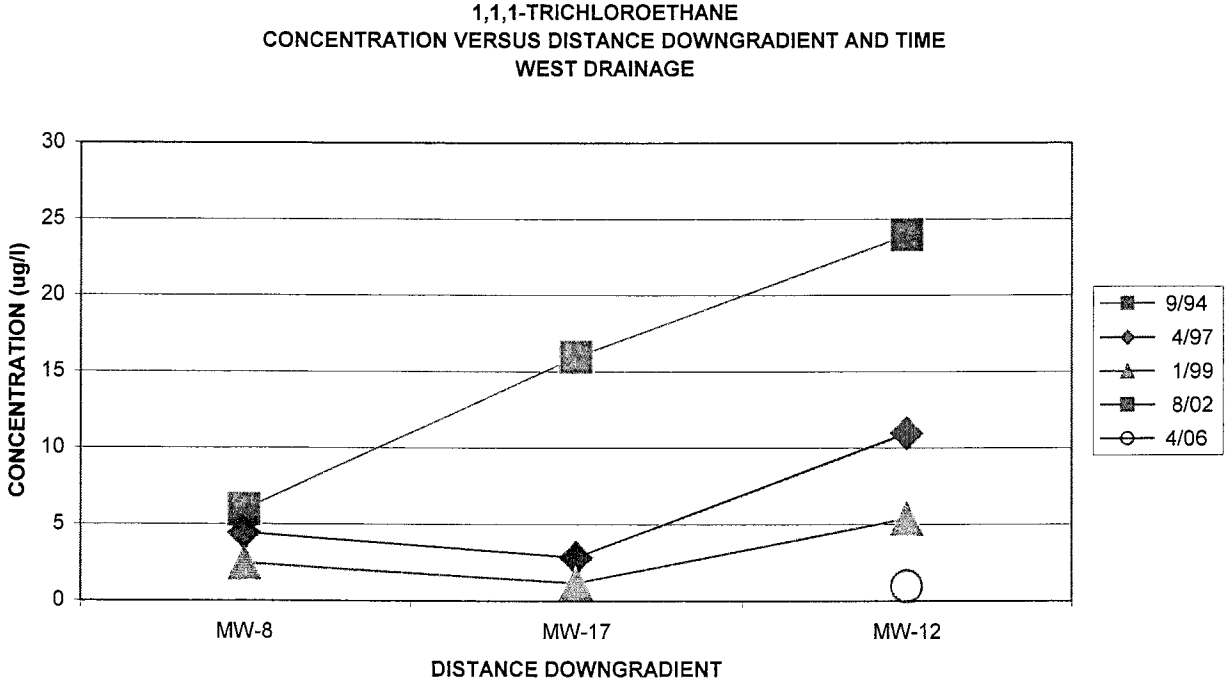


TRICHLOROETHENE
PLOT OF CONCENTRATION VERSUS TIME AND DISTANCE DOWNGRADIENT
WEST DRAINAGE



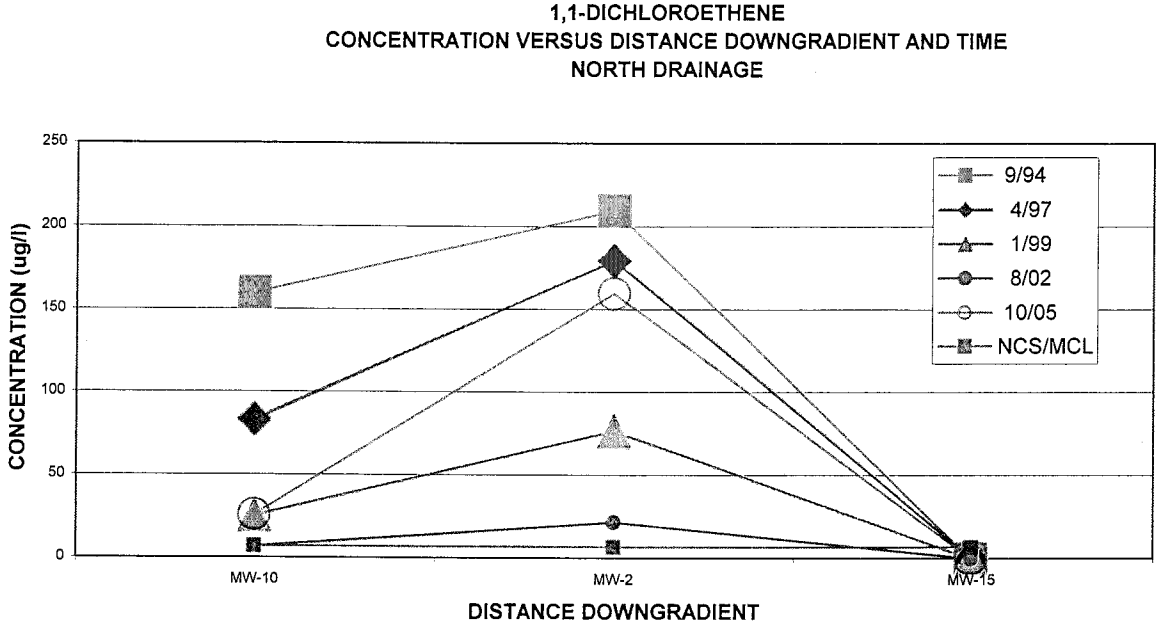
Plots of constituent concentrations versus distance downgradient are provided below for the parent constituent 1,1,1-TCA along the north and west drainage.

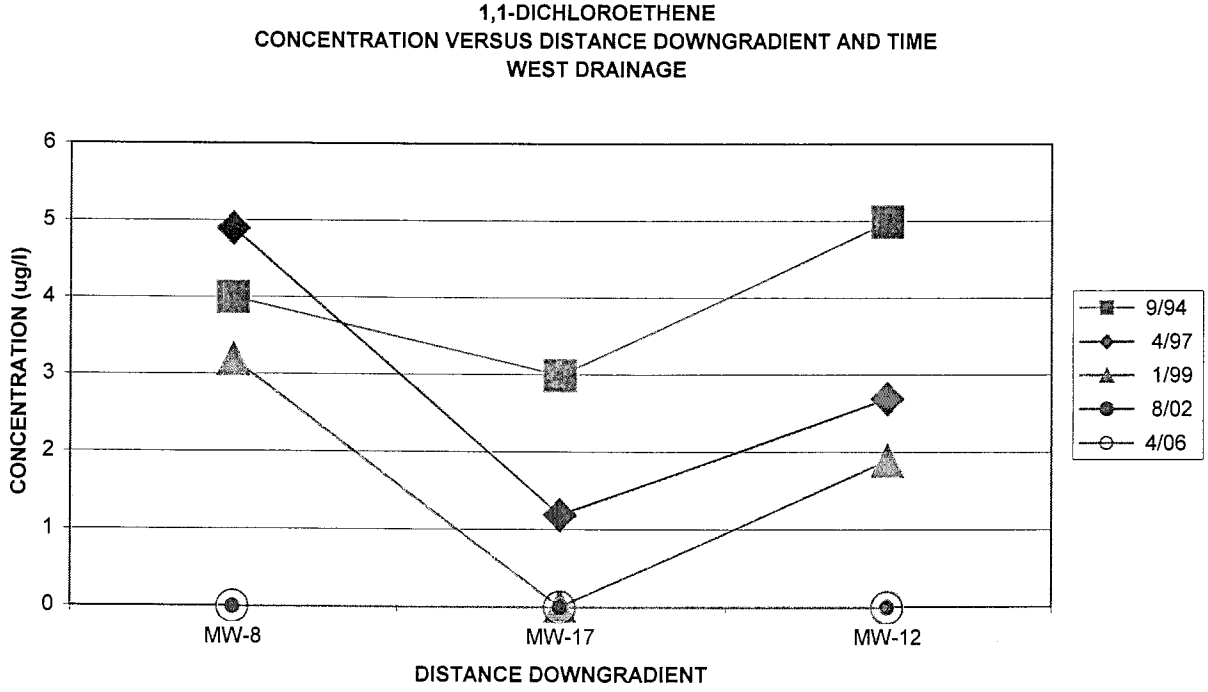




Note that although the historical data for 1,1,1-TCA is shown to display a statistically

significant loss of constituent mass over time in the west drainage, in the north drainage, the data reverses trend. Plots of constituent concentrations versus distance downgradient provided below for 1,1-DCE along the north and west drainage reflect similar trends.





Note that similar to 1,1,1-TCA concentration trends, although 1,1-DCE historical data is

shown to display a statistically significant loss of constituent mass over time in the west drainage, recent data reverses trend in the east drainage.

Although 1,1,1-TCA and 1,1-DCE concentrations in the north drainage were observed to increase between 2003 and 2004, and elevated concentrations were observed at the southern saddle in 2004, these increases appear to not be indicative of a permanent trend reversal. 1,1-DCE concentrations decreased in the north drainage in 2005 and 2006, and lower concentrations were again observed at the southern saddle in 2005 and 2006. The combination of decreasing constituent concentrations and the lack of constituent migration, as shown by the plots presented above, provide reasonable evidence for natural attenuation and constituent mass destruction (US AFCEE, 2000). The chemical and geochemical data discussed in the August 2002 Monitoring Event Report is used to show that loss of constituent mass is the result of intrinsic bioremediation (EPA, 1988).

6.0 CONCLUSIONS

6. 1 Next Assessment Monitoring Event

The next assessment monitoring event is scheduled for September 2006. The monitoring event will comply with the following monitoring program schedule:

- Semiannual monitoring of the core monitoring wells,
- Semiannual surface water monitoring, and
- No sampling of select non-impacted assessment monitoring wells.

6.2 Ongoing Investigation

In response to NCDENR concerns over continued exceedences of North Carolina Groundwater Quality Standards at the facility property lines, additional risk management and investigative efforts will continue. To address risk, the potable well sampling will continue. The County also proposes to continue the sampling for select field MNA indicator parameters on the next event. As noted above, sampling will incorporate field MNA indicator analysis at all core monitoring wells. These ongoing investigative efforts should provide the data necessary to confirm natural attenuation processes active at the site and provide the information necessary to manage risk.

Source containment, implemented through a remedial cap, supplemented by risk assessment, institutional controls, natural attenuation, and continuing assessment investigation comprise the broad package of remedial actions currently being conducted at the site. The deep, low flow conditions indicated by the BREMCO investigation preclude the use of active or invasive remedial activities along the plume boundary, whereas source containment and natural attenuation appear to be effective solutions to observed environmental impact. Target and indicator parameter concentration and distribution trends indicate natural attenuation is effective

across the site. Migration of detectable concentrations of the target parameters beyond the current plume boundary is not anticipated. In fact, reduction of the plume boundary is indicated.

Assessment data collected to date currently provides over ten years of evidence indicating plume attenuation. Ongoing monitoring will provide the temporal data necessary to comprehensively assess constituent transportation, migration, and fate trends. As plume attenuation continues to be observed at the site, source controls will reduce leachate production, and thus reduce plume migration. Natural attenuation processes will gradually lower plume concentrations and should provide for a continuously diminished plume boundary.

Ongoing natural attenuation indicator monitoring should enable the identification of conditions affecting reductive dechlorination and aerobic degradation processes existing at impacted locations across the site. The identification of favorable and/or unfavorable site conditions that can either promote or limit active natural attenuation processes may enable the relaxation of factors impeding intrinsic reduction and oxidation reactions at the site. An increased understanding of these site dynamics may enable the promotion of reduction/oxidation conditions that favor degradation.

LIST OF ACRONYMS

Acronyms and Terms

ADHD	Appalachian District Health Department
BREMCO	Blue Ridge Electric Membership Company
CFR	Code of Federal Regulations
CLP	Contract Laboratory Program
COC	Chain of Custody
CRQL	Contract Required Quantitation Limit
CVAA	Cold Vapor Atomic Absorption
DAA	Draper Aden Associates
DQO	Data Quality Objectives
EPA	Environmental Protection Agency
EQL	Estimated Quantitation Limit
GC	Gas Chromatography
GC/MS	Gas Chromatography with Mass Spectrometry
GFAA	Graphite Furnace Atomic Absorption
GMP	Groundwater Monitoring Program
IDL	Instrument Detection Level (IDL)
ICP	Inductively Coupled Plasma
LLRA	Low Level Risk Assessment
LOD	Limit of Detection
LOQ	Limit of Quantitation
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
MW	Monitoring Well
NCDENR	North Carolina Department of Environment and Natural Resources
NCS	North Carolina groundwater standard
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance / Quality Control
SOW	Statements of Work
SW-846	USEPA Solid Waste document 846
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

Units of Measure

µ	micron (10^{-6} meters)
ml	milliliter (0.001 liter)
l	liter
µg/l	microgram per liter (equivalent to parts per billion - ppb)
µS/cm	microsiemens per centimeter
°C	degrees Celsius

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Wiedemeier, Todd H., Rifai, Hanadi S., Newell, Charles J., and Wilson, John T., 1999, Natural Attenuation of Fuels and Chlorinated Solvents in the Subsurface, John Wiley and Sons, Inc.

List of Watauga County Landfill Assessment documents prepared by Draper Aden Associates

"Geotechnical and Hydrogeologic Investigation of the Bolick Site at the Watauga County Landfill," dated March 1, 1993. DAA JN 6520-02

30 pages text, 6 tables, 9 figures and 6 appendices.

Purpose: Results of the Bolick Site geotechnical and hydrogeological investigation conducted by DAA between August 1992 and February 1993.

"Watauga County Landfill Permit No. 95-02 Assessment Plan," dated September 3, 1993. DAA JN 6520-13

110 pages text, 11 tables, 11 figures and 4 appendices (SAP and HASP included as separate).

Purpose: Assessment Plan drafted pursuant to July 1993 Watauga Co./NCDEHNR Consent Agreement.

"Watauga County Landfill Permit No. 95-02 Assessment Plan Activity Report," dated July 29, 1994. DAA JN 6520-14

55 pages text, 5 tables, 6 figures and 7 appendices (as separate).

Purpose: Initial Assessment Plan field activities (well installation, aquifer testing, lab procurement, etc.).

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, Initial Background Data Set, First Quarter Event," dated November 2, 1994. DAA JN 6520-20

Vol. I (34 pages text, 6 tables, 2 figures and 4 appendices), Vol. II (data documentation, 3 books).

Purpose: Results of first Assessment monitoring event sampled on June 20-23, 1994.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, Initial Background Data Set, Second Quarter Event," dated February 17, 1995. DAA JN 6520-20

Vol. I (36 pages text, 10 tables, 2 figures and 4 appendices), Vol. II (data documentation, 3 books).

Purpose: Results of second Assessment monitoring event sampled on September 27-30, 1994.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, Initial Background Data Set, Third Quarter Event," dated August 3, 1995. DAA JN 6520-20

Vol. I (39 pages text, 12 tables, 2 figures and 4 appendices), Vol. II (data documentation, 3 books).

Purpose: Results of third Assessment monitoring event sampled on February 6-10, 1995.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, Initial Background Data Set, Fourth Quarter Event," dated October 10, 1995. DAA JN 6520-20

Vol. I (38 pages text, 12 tables, 2 figures and 4 appendices), Vol. II (data documentation, 3 books).

Purpose: Results of fourth Assessment monitoring event sampled on April 11-13, 1995.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, First Semiannual Event," dated January 12, 1996. DAA JN 6520-21

Vol. I (52 pages text, 13 tables, 2 figures and 4 appendices), Vol. II (data documentation, 9 books).

Purpose: Results of fifth Assessment monitoring event sampled on July 10-13, 1995.

"Watauga County Landfill Permit No. 95-02 Remedial Investigation and Alternatives Report," dated January 2, 1996. DAA JN 6520-18

94 pages text, 15 tables, 5 figures and 7 appendices (4 appendices included as separate).

Purpose: Summary of assessment and remedial investigation activities performed to date, including remedial alternative review and proposed immediate remedial action responses appropriate at this time.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, Second Semiannual Event," dated June 3, 1996. DAA JN 6520-21

Vol. I (39 pages text, 11 tables, 2 figures and 4 appendices), Vol. II (data documentation, 3 books).

Purpose: Results of sixth Assessment monitoring event sampled on April 9-10, 1996.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results,
April 8-9, 1997 Event," dated June 19, 1997. DAA JN 6520-21

40 pages text, 12 tables, 2 figures and 5 appendices, Appendix E (data documentation) on CD-ROM.

Purpose: Results of seventh Assessment monitoring event sampled on April 8-9, 1997.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, January 14-15, 1998 Event," dated May 6, 1998. DAA JN 6520-21

34 pages text, 14 tables, 2 figures and 5 appendices, Appendix E (data documentation) on CD-ROM.

Purpose: Results of eighth Assessment monitoring event sampled on January 14-15, 1998.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, June 23-24, 1998 Event," dated September 10, 1998. DAA JN 6520-21

26 pages text, 14 tables, 2 figures and 5 appendices, Appendix E (data documentation) as separate Book.

Purpose: Results of ninth Assessment monitoring event sampled on June 23-24, 1998.

"Blue Ridge Electric Membership Company October 1988 Potable Well Testing Report of Investigation," dated March 1, 1999. DAA JN 6520-24

20 pages text, 3 tables, 4 figures and 4 appendices.

Purpose: Results of October 1998 investigation of the BREMCO well.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, January 11-12, 1999 Event," dated April 19, 1999. DAA JN 6520-21

29 pages text, 13 tables, 2 figures and 5 appendices, Appendix E (data documentation) as separate Book

Purpose: Results of tenth Assessment monitoring event sampled on January 11-12, 1999.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, July 12-13, 1999 Event, Including Site Conceptual Model Update", dated January 5, 2000. DAA JN 6520-21

54 pages text, 14 tables, 2 figures and 5 appendices, Appendix F includes 34 plume delineation maps

Purpose: Results of eleventh Assessment monitoring event sampled on July 12-13, 1999, including updated site conceptual model.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, February 1-3, 2000 Event," dated May 9, 2000. DAA JN 6520-21

25 pages text, 14 tables, 2 figures and 7 appendices

Purpose: Results of twelfth Assessment monitoring event sampled on February 1-3, 2000, including first sampling event incorporating MNA indicator parameters.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, August 8-9, 2000 Event," dated September 25, 2000. DAA JN 6520-37

23 pages text, 14 tables, 2 figures and 6 appendices

Purpose: Results of thirteenth Assessment monitoring event sampled on August 8-9, 2000, including second sampling event incorporating MNA indicator parameters.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, February 1-3, 2001 Event," dated June 20, 2001. DAA JN 6520-37

25 pages text, 13 tables, 2 figures and 6 appendices

Purpose: Results of fourteenth Assessment monitoring event sampled on February 1-3, 2001, including third sampling event incorporating natural attenuation indicator parameters.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, August 7-8, 2001 Event," dated October 26, 2001. DAA JN 6520-39

29 pages text, 14 tables, 2 figures and 6 appendices

Purpose: Results of fifteenth Assessment monitoring event sampled on August 7-8, 2001, including natural attenuation demonstration.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, February 11-14, 2002 Event," dated April 11, 2002. DAA JN 6520-39

56 pages text, 14 tables, 2 figures and 7 appendices

Purpose: Results of sixteenth Assessment monitoring event sampled on February 11-14, 2002, including natural attenuation demonstration update.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, August 12-14, 2002 Event," dated November 18, 2002. DAA JN 6520-39

57 pages text, 13 tables, 2 figures and 5 appendices

Purpose: Results of seventeenth Assessment monitoring event sampled on August 12-14, 2002, including natural attenuation demonstration update.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, January 21-22, 2003 Event," dated March 10, 2003. DAA JN 6520-39

32 pages text, 13 tables, 2 figures and 5 appendices

Purpose: Results of eighteenth Assessment monitoring event sampled on January 21-22, 2003, including natural attenuation demonstration update.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, July 14-15, 2003 Event," dated October 22, 2003. DAA JN 6520-39

31 pages text, 12 tables, 2 figures and 5 appendices

Purpose: Results of nineteenth Assessment monitoring event sampled on July 14-15, 2003, including natural attenuation demonstration update.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, March 16-17, 2004 Event," dated May 17, 2004. DAA JN 6520-39

34 pages text, 12 tables, 2 figures and 5 appendices

Purpose: Results of twentieth Assessment monitoring event sampled on March 16-17, 2004, including natural attenuation demonstration update.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, September 29-30, 2004 Event," dated Dec. 13, 2004. DAA JN 6520-39

34 pages text, 12 tables, 2 figures and 5 appendices

Purpose: Results of twenty-first Assessment monitoring event sampled on September 29-30, 2004, including natural attenuation demonstration update.

"Watauga County Landfill Permit No. 95-02 Groundwater and Surface Water Assessment Monitoring Results, March 30-31, 2005 Event," dated May 25, 2005. DAA JN 6520-39

34 pages text, 11 tables, 2 figures and 5 appendices

Purpose: Results of twenty-second Assessment monitoring event sampled on March 30-31, 2005, including natural attenuation demonstration update.

APPENDIX A

TABLES AND FIGURES

Table 1

Watauga County Landfill
Groundwater and Surface Water
Assessment Monitoring Schedule

GROUNDWATER MONITORING	1st Year (94/95) Quarterly Sampling Events				Subsequent Semiannual Sampling Events*	
"CORE" ASSESSMENT WELLS						
Target Parameter Monitoring Parameters*	CLP Methods	CLP Methods	CLP Methods	CLP Methods	Low Level Risk Assessment Screening Methods	CLP Methods
"BOUNDARY" ASSESSMENT WELLS***						
Target Parameter Monitoring Parameters*	LLRA Methods	CLP Methods	LLRA Methods	CLP Methods	LLRA Methods	-
SURFACE WATER MONITORING						
Target Parameter Monitoring Parameters*	CLP Methods	-	CLP Methods	-	CLP Methods	CLP Methods

CLP - EPA Contract Laboratory Program Methods
LLRA - Low Level Risk Assessment Screening Methods (EPA SW-846)

* - Semiannual analysis for target organics; annual analysis for target metals (approved June 1998).
** - Semiannual monitoring of a subset of the core monitoring well network (MW-2, MW-3, MW-6, MW-9, MW-12 and MW-17); the groundwater at these six monitoring points has historically exceeded the EPA MCL for one or more organic target parameters. Annual monitoring of the existing twelve core monitoring well network (approved June 1998).
*** - Monitoring frequency of non-impacted wells based on annual review of temporal contaminant distribution trends and MNA demonstration requirements.

Watauga County Landfill

Watauga County, North Carolina

Upgradient Well: MW-1

Table 2A

April 4-5, 2006

05/01/06

Semiannual Monitoring Event

Assessment Target Parameter Analytical Results

Core Subset Groundwater Monitoring Wells

Parameters	Event	Results ug/L(ppb)												NCS (ug/L)	MCL (ug/L)
		MW-2		MW-3		MW-8		MW-9		MW-12		MW-17			
Benzene	4/4-5/06	10	U	10	U	10	U	**3**	J	10	U	10	U	1	5
Chloroethane	4/4-5/06	10	U	11		11		7	J	12		10	U	2800	-
Dichlorodifluoromethane	4/4-5/06	10	U	10	U	10	U	2	J	10	U	10	U	1400	-
1,1-Dichloroethane	4/4-5/06	85		38		11		20		34		5	J	700	-
1,1-Dichloroethene	4/4-5/06	**110**		10	U	10	U	10	U	10	U	10	U	7	7
Cis-1,2-Dichloroethene	4/4-5/06	10	U	**98**		6	J	11		61		11		70	70
Trans-1,2-Dichloroethene	4/4-5/06	10	U	1	J	10	U	10	U	10	U	10	U	70	100
Methylene Chloride	4/4-5/06	10	U	10	U	10	U	10	U	10	U	10	U	5	5
Tetrachloroethene	4/4-5/06	**5**	J	**6**	J	**2**	J	**1**	J	**5**	J	**3**	J	0.7	5
Trichloroethene	4/4-5/06	10	U	**5**	J	2	J	2	J	**4**	J	1	J	2.8	5
1,1,1-Trichloroethane	4/4-5/06	**700**		10	U	10	U	10	U	1	J	10	U	200	200
Vinyl Chloride	4/4-5/06	10	U	**8**	J	10	U	10	U	**5**	J	10	U	0.015	2

Notes:

U Denotes not detected (the associated numerical value is the Contract Required Quantitation Limit).

J Denotes an estimated value.

- Denotes Not Established or Analyzed.

NCS denotes North Carolina Groundwater Quality Standard (T15A: 02L .0200)

MCL denotes EPA Maximum Contaminant Level (EPA 822-R-94-001)

Shading denotes results that exceed U.S. EPA MCLs.

Bold denotes results that exceed NC Groundwater Quality '2L' Standard.

Organic parameters were analyzed in accordance with EPA Contract Laboratory Program (CLP) Statement of Work ILMO 3.2.

Watauga County Landfill

Watauga County, North Carolina

Table 2B

April 4-5, 2006

05/01/06

Semiannual Monitoring Event

Organic Parameter Analytical Results

Surface Water Monitoring Locations

Parameters	Sampling Date	Results ug/L(ppb)												WQS (ug/L)	MCL (ug/L)
		S-1		S-2		S-3		S-4		S-5		S-6			
ORGANICS															
Benzene	4/4-5/06	10	U	1	J	10	U	10	U	10	U	NS		71.4	5
Chloroethane	4/4-5/06	10	U	39		10	U	10	U	10	U	NS		860	-
Dichlorodifluoromethane	4/4-5/06	10	U	10	J	10	J	10	J	4	J	NS		570000	-
1,1-Dichloroethane	4/4-5/06	10	U	7	J	10	U	3	J	10	U	NS		42	-
1,1-Dichloroethene	4/4-5/06	10	U	10	U	10	U	10	U	10	U	NS		3.2	7
Cis-1,2-Dichloroethene	4/4-5/06	10	U	2	J	10	U	7	J	10	U	NS		140000	70
Trans-1,2-Dichloroethene	4/4-5/06	10	U	10	U	10	U	10	U	10	U	NS		-	100
Methylene Chloride	4/4-5/06	10	U	1	J	10	U	10	U	10	U	NS		1600	5
Tetrachloroethene	4/4-5/06	10	U	10	U	10	U	10	U	10	U	NS		8.84	5
Trichloroethene	4/4-5/06	10	U	10	U	10	U	10	U	10	U	NS		92.4	5
1,1,1-Trichloroethane	4/4-5/06	10	U	10	U	10	U	10	U	10	U	NS		555	200
Vinyl Chloride	4/4-5/06	10	U	10	U	10	U	10	U	10	U	NS		525	2

Notes:

WQS Denotes North Carolina Class WS-1 Surface Water Quality Standard (T15A: 02B .0200)

MCL Denotes EPA Maximum Contaminant Level (EPA 822-R-94-001)

U Denotes not detected (the associated numerical value is the Contract Required Quantitation Limit).

J Denotes an estimated value.

- Denotes Not Established.

NS Denotes Not Sampled.

Organic parameters were analyzed in accordance with EPA CLP Statement of Work OLMO3.2.

Watauga County Landfill
Watauga County, North Carolina
Upgradient Well: MW-1

Table 2C

April 4-5, 2006

05/01/06

Semiannual Monitoring Event
Inorganic Parameter Analytical Results
Core Subset Groundwater Monitoring Wells

Parameters	Event	Results ug/L(ppb)												NCS (ug/L)	MCL (ug/L)
		MW-2		MW-3		MW-8		MW-9		MW-12		MW-17			
Barium, Total	4/4-5/06	330		168	J	269		619		371		237		2000	2000
Chromium, Total	4/4-5/06	1.1	J	2.9	J	20.5		4.3	J	10	U	11.8		50	100
Cobalt, Total	4/4-5/06	50	U	50	U	9.30	J	8.5	J	50	U	6.0	J	-	-
Iron, Total	4/4-5/06	297		436		6,800		334		100	U	4,280		300*	300*
Nickel, Total	4/4-5/06	7.2	J	4.0	J	15.3	J	8.9	J	3.3	J	22.2	J	100	100
Vanadium, Total	4/4-5/06	3	J	1.4	J	17.4	J	1.6	U	0.52	J	10.5	U	-	-

Notes:

U Denotes not detected. (the associated numerical value is the Instrument Detection Level (IDL)).
J Denotes an estimated value.
NCS Denotes North Carolina Groundwater Quality Standard (T15A: 02L .0200)
MCL Denotes EPA Maximum Contaminant Level (EPA 822-R-94-001)
* Denotes a Secondary MCL for Total Iron.
\- Denotes not established or available.
Metal parameters were analyzed in accordance with EPA Contract Laboratory Program (CLP) Statement of Work ILMO 3.0
CLP analytical methods utilize relevant Atomic Adsorption technique and Inductively Coupled Plasma (ICP) method for metal analysis.

Watauga County Landfill
Watauga County, North Carolina

Table 3
April 4-5, 2006
Semi-Annual Assessment Monitoring Event
Detected Non-Target Organic Parameters

Parameter	Event	MW-3		MW-8		MW-12		S-2		NCS	MCL
Ethyl Ether	4/3-5/6	6.47	NJ	6.48	NJ	6.47	NJ	6.48	NJ	-	-
Trimethylsilanol	4/3-5/06			8.75	NJ					-	-

Notes:

All concentrations are in ug/l.

J Denotes an estimated value.

N Denotes tenatively identified.

U Denotes not detected (the associated numerical value is the Limit of Quantitation).

- Denotes Not Established.

Organic parameters were analyzed in accordance with EPA CLP Statement of Work OLMO3.2.

Watauga County Landfill
Watauga County, North Carolina
Upgradient Well: MW-1

01-May-06

TABLE 4
GROUNDWATER LEVEL DATA
MONITORING WELLS

	REFERENCE ELEVATION									
	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
GROUND	3339.03	3151.24	3182.25	3150.06	3263.81	3262.55	3270.56	3235.39	3356.65	3202.18
MEASURING POINT	3341.80	3152.94	3183.12	3152.52	3267.69	3266.04	3273.53	3239.77	3359.23	3203.87
DATE	STATIC WATER LEVEL									
6/20/94	38.00	7.88	18.43	13.48	NM	44.12	23.03	17.68	59.35	8.18
9/27/94	39.69	7.51	17.42	10.45	NM	43.99	30.73	17.38	57.79	8.09
2/6/95	37.57	5.58	16.20	8.18	50.39	42.85	45.88	15.41	59.54	7.73
4/11/95	37.94	6.46	16.85	9.22	48.95	42.81	49.11	16.05	59.30	7.90
7/10/95	41.20	6.60	17.43	8.94	50.29	43.73	48.98	17.42	80.17	7.91
4/9/96	38.71	5.85	7.01	8.40	49.87	42.87	44.32	16.80	61.28	7.67
4/8/97	38.30	5.59	16.35	NM	NM	ABANDON	40.50	17.43	62.47	7.67
1/13/98	43.71	7.00	17.51	8.54	55.46	ABANDON	44.18	20.32	63.56	8.25
6/23/98	36.84	5.94	14.01	7.98	46.82	ABANDON	43.07	16.92	62.15	7.32
1/11/99	44.56	7.66	18.87	8.85	55.11	ABANDON	37.89	22.83	64.39	8.68
7/12/99	42.87	6.78	15.16	8.18	53.26	ABANDON	45.79	19.92	64.05	8.25
2/1/00	44.10	7.62	17.05	9.12	56.08	ABANDON	41.25	21.40	64.41	8.41
8/8/00	42.37	7.42	17.28	9.02	52.96	ABANDON	45.65	21.25	63.70	8.54
2/12/01	46.80	8.05	18.92	9.10	58.67	ABANDON	42.72	24.27	64.60	9.13
8/7/01	NM	7.16	14.65	NM	NM	ABANDON	NM	19.53	63.94	NM
2/11/02	44.79	6.92	16.25	8.00	58.41	ABANDON	44.11	22.75	63.99	8.65
8/12/02	44.66	9.14	18.63	10.99	57.04	ABANDON	47.34	bent	64.24	9.36
1/21/03	NM	6.72	14.60	NM	NM	ABANDON	ABANDON	bent	64.24	NM
7/14/03	39.41	5.25	13.89	6.78	47.93	ABANDON	ABANDON	bent	62.39	7.47
3/16/04	40.57	4.66	15.01	6.04	51.37	ABANDON	ABANDON	bent	63.04	7.66
9/30/04	39.75	3.11	13.50	NM	NM	ABANDON	ABANDON	bent	62.44	7.49
3/30/05	39.74	3.85	14.23	5.35	50.10	ABANDON	ABANDON	bent	62.99	7.30
10/03/05	NM	6.13	17.81	NM	NM	ABANDON	ABANDON	bent	64.49	7.85
4/3/06	NM	5.20	16.80	6.36	NM	ABANDON	ABANDON	bent	64.13	7.69
DATE	GROUNDWATER ELEVATION									
6/20/94	3303.80	3145.06	3164.69	3139.04	NM	3221.92	3250.50	3222.09	3299.88	3195.69
9/27/94	3302.11	3145.43	3165.70	3142.07	NM	3222.05	3242.80	3222.39	3301.44	3195.78
2/6/95	3304.23	3147.36	3166.92	3144.34	3217.30	3223.19	3227.65	3224.36	3299.69	3196.14
4/11/95	3303.86	3146.48	3166.27	3143.30	3218.74	3223.23	3224.42	3223.72	3299.93	3195.97
7/10/95	3300.60	3146.34	3165.69	3143.58	3217.40	3222.31	3224.55	3222.35	3279.06	3195.96
4/9/96	3303.09	3147.09	3176.11	3144.12	3217.82	3223.17	3229.21	3222.97	3297.95	3196.20
4/8/97	3303.50	3147.35	3166.77	NM	NM	ABANDON	3233.03	3222.34	3296.76	3196.20
1/13/98	3298.09	3145.94	3165.61	3143.98	3212.23	ABANDON	3229.35	3219.45	3295.67	3195.62
6/23/98	3304.96	3147.00	3169.11	3144.54	3220.87	ABANDON	3230.46	3222.85	3297.08	3196.55
1/11/99	3297.24	3145.28	3164.25	3143.67	3212.58	ABANDON	3235.64	3216.94	3294.84	3195.19
7/12/99	3298.93	3146.16	3167.96	3144.34	3214.43	ABANDON	3227.74	3219.85	3295.18	3195.62
2/1/00	3297.70	3145.32	3166.07	3143.40	3211.61	ABANDON	3232.28	3218.37	3294.82	3195.46
8/8/00	3299.43	3145.52	3165.84	3143.50	3214.73	ABANDON	3227.88	3218.52	3295.53	3195.33
2/12/01	3295.00	3144.89	3164.20	3143.42	3209.02	ABANDON	3230.81	3215.50	3294.63	3194.74
8/7/01	NM	3145.78	3168.47	NM	NM	ABANDON	NM	3220.24	3295.29	NM
2/11/02	3297.01	3146.02	3166.87	3144.52	3209.28	ABANDON	3229.42	3217.02	3295.24	3195.22
8/12/02	3297.14	3143.80	3164.49	3141.53	3210.65	ABANDON	3226.19	bent	3294.99	3194.51
1/21/03	NM	3146.22	3168.52	NM	NM	ABANDON	ABANDON	bent	3294.99	NM
7/14/03	3302.39	3147.69	3169.23	3145.74	3219.76	ABANDON	ABANDON	bent	3296.84	3196.40
3/16/04	3301.23	3148.28	3168.11	3146.48	3216.32	ABANDON	ABANDON	bent	3296.19	3196.21
9/30/04	3302.05	3149.83	3169.62	NM	NM	ABANDON	ABANDON	bent	3296.79	3194.52
3/30/05	3302.06	3149.09	3168.89	3147.17	3217.59	ABANDON	ABANDON	bent	3296.24	3196.57
10/03/05	NM	3146.81	3165.31	NM	NM	ABANDON	ABANDON	bent	3294.74	3196.02
4/3/06	NM	3147.74	3166.32	3146.16	NM	ABANDON	ABANDON	bent	3295.10	3196.18

1) ALL MEASUREMENTS IN FEET.
2) ALL ELEVATIONS REFERENCE MEAN SEA LEVEL.
3) MEASURING POINT (M.P.) IS FROM THE TOP OF WELL CASING.
4) NM - NOT MEASURED

Watauga County Landfill
Watauga County, North Carolina
Upgradient Well: MW-1

01-May-06

TABLE 4
GROUNDWATER LEVEL DATA
MONITORING WELLS

	REFERENCE ELEVATION								
	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19
GROUND	3156.44	3156.82	3117.39	3117	3117.15	3141.42	3181.14	3117.12	3125
MEASURING POINT	3159.6	3159.15	3119.72	3120	3120.65	3142.72	3183.62	3119.63	3140
DATE	STATIC WATER LEVEL								
6/20/94	13.35	11.04	19.66	7.94	11.92	5.32	17.93	17.93	-
9/27/94	13.22	10.78	19.57	7.89	11.82	5.68	17.83	17.86	-
2/6/95	13.22	10.61	19.39	7.52	11.55	4.61	17.05	17.58	-
4/11/95	13.00	10.58	19.53	7.75	11.87	5.11	17.48	17.65	-
7/10/95	12.53	10.48	19.62	7.74	11.96	4.54	18.11	17.94	-
4/9/96	12.73	10.38	19.56	7.59	11.85	4.67	17.78	17.81	-
4/8/97	12.28	9.48	NM	NM	11.91	ABANDON	17.17	NM	4.85
1/13/98	12.48	9.65	19.75	7.44	11.74	ABANDON	18.60	18.32	10.21
6/23/98	11.82	9.11	NM	7.49	11.79	ABANDON	14.83	17.53	2.67
1/11/99	12.41	9.46	20.05	7.19	11.79	ABANDON	19.84	18.56	9.34
7/12/99	11.37	8.75	19.64	NM	NM	ABANDON	17.08	18.10	9.75
2/1/00	12.38	9.18	20.31	7.72	12.18	ABANDON	17.77	18.77	11.90
8/8/00	11.79	8.94	20.60	7.45	11.9	ABANDON	17.86	17.63	NM
2/12/01	12.40	9.23	20.03	7.68	12.09	ABANDON	19.21	18.23	24.45
8/7/01	NM	8.77	NM	NM	NM	ABANDON	15.47	NM	NM
2/11/02	12.03	8.86	19.81	7.42	11.85	ABANDON	17.10	18.05	24.65
8/12/02	12.16	9.17	20.11	8.23	12.54	ABANDON	20.04	18.27	25.09
1/21/03	NM	8.65	NM	NM	NM	ABANDON	15.44	NM	NM
7/14/03	11.09	8.27	18.85	7.24	11.41	ABANDON	14.86	16.96	16.98
3/16/04	12.82	9.24	19.28	7.16	11.43	ABANDON	15.79	17.29	NM
9/30/04	12.06	8.65	NM	NM	10.79	ABANDON	15.27	NM	NM
3/30/05	13.22	10.02	NM	6.51	11.01	ABANDON	15.12	NM	NM
10/03/05	14.51	10.94	NM	NM	11.95	ABANDON	18.53	NM	13.37
4/4/06	14.01	10.65	NM	NM	11.84	ABANDON	17.55	NM	14.42
DATE	GROUNDWATER ELEVATION								
6/20/94	3146.25	3148.11	3100.06	3112.06	3108.73	3137.40	3165.69	3101.70	-
9/27/94	3146.38	3148.37	3100.15	3112.11	3108.83	3137.04	3165.79	3101.77	-
2/6/95	3146.38	3148.54	3100.33	3112.48	3109.10	3138.11	3166.57	3102.05	-
4/11/95	3146.60	3148.57	3100.19	3112.25	3108.78	3137.61	3166.14	3101.98	-
7/10/95	3147.07	3148.67	3100.10	3112.26	3108.69	3138.18	3165.51	3101.69	-
4/9/96	3146.87	3148.77	3100.16	3112.41	3108.80	3138.05	3165.84	3101.82	-
4/8/97	3147.32	3149.67	NM	NM	3108.74	ABANDON	3166.45	NM	3120.15
1/13/98	3147.12	3149.50	3099.97	3112.56	3108.91	ABANDON	3165.02	3101.31	3114.79
6/23/98	3147.78	3150.04	NM	3112.51	3108.86	ABANDON	3168.79	3102.10	3122.33
1/11/99	3147.19	3149.69	3099.67	3112.81	3108.86	ABANDON	3163.78	3101.07	3115.66
7/12/99	3148.23	3150.40	3100.08	NM	NM	ABANDON	3166.54	3101.53	3115.25
2/1/00	3147.22	3149.97	3099.41	3112.28	3108.47	ABANDON	3165.85	3100.86	3113.10
8/8/00	3147.81	3150.21	3099.12	3112.55	3108.75	ABANDON	3165.76	3102.00	NM
2/12/01	3147.20	3149.92	3099.69	3112.32	3108.56	ABANDON	3164.41	3101.40	3115.55
8/7/01	NM	3150.38	NM	NM	NM	ABANDON	3168.15	NM	NM
2/11/02	3147.57	3150.29	3099.91	3112.58	3108.80	ABANDON	3166.52	3101.58	3115.35
8/12/02	3147.44	3149.98	3099.61	3111.77	3108.11	ABANDON	3163.58	3101.36	3114.91
1/21/03	NM,	3150.50	NM	NM	NM	ABANDON	3168.18	NM	NM
7/14/03	3148.51	3150.88	3100.87	3112.76	3109.24	ABANDON	3168.76	3102.67	3123.02
3/16/04	3146.78	3149.91	3100.44	3112.84	3109.22	ABANDON	3167.83	3102.34	NM
9/30/04	3147.54	3150.50	NM	NM	3109.86	ABANDON	3168.35	NM	NM
3/30/05	3146.38	3149.13	NM	3113.49	3109.64	ABANDON	3168.50	NM	NM
10/03/05	3145.09	3148.21	NM	NM	3108.70	ABANDON	3165.09	NM	3126.63
4/4/06	3145.59	3148.50	NM	NM	3108.81	ABANDON	3166.07	NM	3125.58

1) ALL MEASUREMENTS IN FEET.
2) ALL ELEVATIONS REFERENCE MEAN SEA LEVEL.
3) MEASURING POINT (M.P.) IS FROM THE TOP OF WELL CASING.
4) NM - NOT MEASURED

P:\06\500\06520\06520-39\Reports\2006 tables\[XLS - 06 0428 - NCDENR - TABLE4 - JES.xls]TABLE4

Watauga County Landfill
Watauga County, North Carolina
Upgradient Well: MW-1
05/26/06

Table 5A
Background Assessment Organic Target Parameter Analytical Results
1994-2005
Core Groundwater Monitoring Wells

Parameter	Event	Results ug/l(ppb)																										Analysis Type
		MW-1		MW-2		MW-3		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-15		MW-17				
Organics																												
Benzene	6/20/94	10	U	120	U	10	U	9	J	0.42	J	0.72	J	0.4	J	5.3	U	5.3	U	5.3	U	5.30	U	5.3	U			CLP/8021
	9/27/94	10	U	9	J	2	J	12	J	3	J	5	J	4	J	10	U	10	U	10	U	10	U	2	J			CLP
MCL= 5 ug/l	2/06/95	10	U	150	U	2	J	12	J	3.6		5	J	2	J	50	U	10	U	10	U	1.0	U	10	U			CLP
NCS = 1 ug/l	4/11/95	10	U	200	U	1	J	10	J	3	J	6	J	3	J	71	U	10	U	10	U	10	U	10	U			CLP
	7/10/95	2	U	2	U	2.3		14		2.2		6.2		4		2	U	2	U	2	U	10	U	2	U			8021
	7/10/95	5	U	5	U	2.6	J	13		2.7	J	5.5		3.8	J	5	U	5	U	5	U	-		5	U			8260
	4/10/96	1	J	91	U	2	J	11	J	5	J	5		4	J	23	U	10	U	1	J	10	U	10	U			CLP
	4/8/97	1	U	100	U	2		-		4.8		2.3		3.9		100	U	1	U	1.4		1	U	1				8021
	1/15/98	10	U	20	U	3	J	-		2	J	2	J	3	J	14	U	10	U	2	J	10	U	2	J			CLP
	6/23/98	-		25	UJ	1	J	-		-		3	J	3	J	-		-		2	J	-		2	J			CLP
	1/12/99	1	U	1	U	3.6		-		2.4		2		3.2		1	U	1	U	2.5		1	U	1.4				8021B
	7/12/99	-		10	U	2	J	-		-		1	J	2	J	-		-		10	U	-		2	J			CLP
	2/1/00	1	U	1	U	2.5		-		2.3		1.6		3.2		1	U	1.4		2.2		1	U	2.4				8021B
	8/8/00	-		10	U	4	J	-		-		2	J	4	J	-		-		2	J	-		1	J			CLP
	2/12-14/01	1	U	1	U	3.9		-		2.3		1.3		4.3		1	U	1.8		2.8		1	U	5				8021B
	8/7-8/01	-		10	U	1	J	-		-		1	J	2	J	-		-		2	J	-		4	J			CLP
	2/11-14/02	0.5	U	0.5	U	3	U	-		1		0.5	U	2		0.5	U	1		2		0.5	U	3				8260B
	8/12-14/02	0.5	U	10	U	3	J	-		1	U	10	U	10	U	1	U	0.5	U	10	U	0.5	U	2	J			CLP/8260B
	1/21-22/03	-		10	U	0.8	J	-		-		-		3	J	-		-		2	J	-		3	J			CLP
	7/14-15/03	1	U	17	U	4	U	-		-		1	U	1	U	4.2	U	1	UJ	1	U	1	UJ	1	U			8260B
	3/16-17/04	-		10	U	10	U	-		-		10	U	10	U	-		-		10	U	-		10	U			CLP
	9/29-30/04	0.5	U	0.5	U	0.46	J	-		-		0.5	U	3.8	J	0.84	U	0.33	J	0.68		0.5	U	0.22	J			8260B
	3/30-31/05	-		67	U	10	U	-		-		10	U	10	U	-		-		10	U	-		10	U			CLP
	10/3-4/05	-		25	U	0.62		-		-		0.5	U	4.1		0.5	U	0.29	J	0.61		0.5	U	0.5	U			8260B
Chloroethane	6/20/94	10	U	120	U	6	J	8	J	7.33	J	9.44		56.78	J	9.29	U	1.16	J	20.23		9.29	U	28.21				CLP/8021
	9/27/94	10	U	170	U	8	J	10	J	16		7	J	18		10	U	10	U	5	J	10	U	7	J			CLP
no MCL or NCS established	2/06/95	10	U	150	U	7	J	11	J	28		7	J	17		50	U	10	U	4	J	1.0	U	5	J			CLP
	4/11/95	10	U	200	U	6	J	8	J	16		7	J	15		71	U	10	U	2	J	10	U	4	J			CLP
	7/10/95	2	U	2	U	10	U	15	U	9.2		10	U	20	U	2	U	2	U	5	U	10	U	5	U			8021
	7/10/95	5	U	5	U	8.7		16		22		9.3		21		5	U	5	U	6.4		-		4.9	J			8260
	4/10/96	10	U	91	U	8	J	14	J	41		10	J	16		23	U	10	U	5	J	10	U	5	J			CLP
	4/8/97	1	U	1	U	46		-		58		38		110		1	U	12		40		1	U	30				8021
	1/15/98	10	U	20	U	10		-		19		12		12		20		10	U	5	J	10	U	9	J			CLP
	6/23/98	-		25	UJ	5	J	-		-		11	J	8	J	-		-		5	J	-		6	J			CLP
	1/12/99	2	U	2	U	100	U	-		43		40	U	60	U	2	U	25		50	U	2	U	40	U			8021B
	7/12/99	-		10	U	8	J	-		-		10	U	10	U	-		-		10	U	-		7	J			CLP
	2/1/00	2	U	2	U	40	U	-		34	J	40	U	40	U	2	U	28	J	50	U	2	U	40	U			8021B
	8/8/00	-		10	U	13		-		-		16		8	J	-		-		7	J	-		7	J			CLP
	2/12-14/01	2	U	2	U	60	U	-		44	J	40	U	40	U	2	U	34	J	40	U	2	U	60	U			8021B
	8/7-8/01	-		10	UJ	6	J	-		-		28	J	5	J	-		-		8	J	-		14	J			CLP
	2/11-14/02	0.5	U	0.5	U	8		-		23		4		3		0.5	U	7		8		0.5	U	10				8260B
	8/12-14/02	0.5	U	10	U	21		-		18		38		10	U	1	U	0.5	U	17		0.5	U	17				CLP/8260B
	1/21-22/03	-		10	U	4	J	-		-		-		4	J	-		-		4	J	-		7	J			CLP
	7/14-15/03	1	U	17	U	4		-		-		1	U	1	U	4.2	U	5.6	J	1	U	1	UJ	2.9	J			8260B
	3/16-17/04	-		10	U	20		-		-		17		9	J	-		-		10	U	-		10	U			CLP
	9/29-30/04	0.5	U	0.44	J	7.8	J	-		-		0.5	U	6.3	J	0.84	U	6.6	J	6.2		0.5	U	5.3	J			8260B
	3/30-31/05	-		67	U	10	U	-		-		10	U	3	J	-		-		10	U	-		10	U			CLP
	10/3-4/05	-		25	U	10		-		-		0.5	U	6.6		0.5	U	7		9.7		0.5	U	0.89	J			8260B

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Watauga County Landfill
Watauga County, North Carolina
Upgradient Well: MW-1
05/26/06

Table 5A
Background Assessment Organic Target Parameter Analytical Results
1994-2005
Core Groundwater Monitoring Wells

Parameter	Event	Results ug/l(ppb)																										Analysis Type
		MW-1		MW-2		MW-3		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-15		MW-17				
Dichlorodifluoromethane	6/20/94	10	U	120	U	7	J	25	U	46.64	U	2.26	J	13.92	J	46.64	U	1.88	J	9.83	J	46.64	U	1.44	J			CLP/8021
	9/27/94	10	U	10	J	4	J	25	U	10	U	2	J	9	J	10	U	10	U	4	J	10	U	4	J			CLP
no MCL established	2/06/95	10	U	150	U	10	U	25	U	1	U	14		27		50	U	2	J	10	U	1.0	U	12				CLP
NCS = 0.19 ug/l	4/11/95	10	U	200	U	10	U	25	U	10	U	7	J	9	J	71	U	10	U	4	J	10	UJ	3	J			CLP
	7/10/95	2	UJ	2	UJ	6.9	J	2	UJ	2	UJ	16	J	2	UJ	2	UJ	2	UJ	5.7	J	10	U	5.3	J			8021
	7/10/95	5	U	5	U	7.2		2.2	J	5	U	6.7		2.8	J	5	U	1.7	J	4	J	-		4.2	J			8260
	4/10/96	10	U	91	U	10	U	25	U	10	U	10	U	10	U	23	U	10	U	10	U	10	U	10	U			CLP
	4/8/97	1	U	1	U	6.4		-		1	U	17		11		1	U	3		10		1	U	1	U			8021
	1/15/98	10	U	20	U	11		-		10	U	12		10	U	14	U	10	U	10	U	10	U	10	U			CLP
	6/23/98	-		25	UJ	3	J	-		-		10	UJ	10	UJ	-		-		3	J	-		10	UJ			CLP
	1/12/99	1	U	1	U	1	U	-		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U			8021B
	7/12/99	-		10	U	10	U	-		-		10	U	10	U	-		-		10	U	-		10	U			CLP
	2/1/00	1	U	1	U	3.0		-		1.3		8.1		3.7		1	U	3.0		4.8		1	U	3.9				8021B
	8/8/00	-		10	U	3	J	-		-		2	J	1	J	-		-		3	J	-		1	J			CLP
	2/12-14/01	1	U	1	U	3.9		-		1	U	1	U	6.6		1	U	3.0		2.8		1	U	2.5				8021B
	8/7-8/01	-		10	UJ	3	J	-		-		8	J	4	J	-		-		7	J	-		9	J			CLP
	2/11-14/02	0.5	U	0.5	U	4		-		2		0.5	U	1		0.5	U	3		4		0.5	U	6				8260B
	8/12-14/02	0.5	UJ	10	U	10	U	-		1	U	10	U	10	U	1	U	0.5	UJ	10	U	0.5	UJ	10	U			CLP/8260B
	1/21-22/03	-		10	U	10	U	-		-		-		0.5	J	-		-		0.9	J	-		0.9	J			CLP
	7/14-15/03	1	U	17	U	4	U	-		-		1	U	1	U	4.2	U	1	UJ	1	U	1	UJ	1	U			8260B
	3/16-17/04	-		10	U	10	U	-		-		10	U	3	J	-		-		10	U	-		3	J			CLP
	9/29-30/04	0.5	U	0.15	J	0.5	U	-		-		0.5	U	3.3	J	0.84	U	0.76	J	1.1		0.5	U	0.6	J			8260B
	3/30-31/05	-		67	UJ	10	UJ	-		-		10	UJ	0.8	J	-		-		10	UJ	-		10	U			CLP
	10/3-4/05	-		25	U	3.2		-		-		0.5	UJ	1.2	J	0.5	UJ	1.0	UJ	0.31	J	0.5	UJ	0.18	J			8260B
1,1-Dichloroethane	6/20/94	10	U	75	J	160		97		10.42	J	35.33	J	13.63	J	28.62	J	25.23	J	82.77	J	0.26	J	105.03	J			CLP/8021
	9/27/94	10	U	110	J	200		110		1	J	70		23		84		27		130		10	U	230				CLP
no MCL established	2/06/95	10	U	160		180		140		2.9		74		30		37	J	28		120		1.0	U	170				CLP
NCS = 700 ug/l	4/11/95	10	U	98	J	130		94		4	J	58		35		67	J	18		77		10	U	130				CLP
	7/10/95	2	U	81		130		100	J	4.8		60	J	36		58	J	22		100		10	U	102	J			8021
	7/10/95	5	U	94		160		130		6.8		71		40		55		26		120		-		130				8260
	4/10/96	10	U	130		150		120		5	J	80		36		22	J	26		120		10	U	130				CLP
	4/8/97	1	U	84		90		-		9.4		52		28		27		26		82		1	U	76				8021
	1/15/98	10	U	29		97		-		13		55		27		11	J	30		82		10	U	88				CLP
	6/23/98	-		100	J	67	J	-		-		48	J	24	J	-		-		66	J	-		10	UJ			CLP
	1/12/99	1	U	36		92		-		13		35		22		16		27		70		1	U	65				8021B
	7/12/99	-		24		72		-		-		47		20		-		-		10	U	-		71				CLP
	2/1/00	1	U	12		78		-		14		37		19		15		37		74		0.86	J	90				8021B
	8/8/00	-		28		73		-		-		33		19		-		-		58		-		59				CLP
	2/12-14/01	1	U	11		100		-		12		1	U	23		27		34		70		0.56	J	95				8021B
	8/7-8/01	-		8	J	32		-		-		46		15		-		-		47		-		81				CLP
	2/11-14/02	0.5	U	5		51		-		12		16		0.5	U	10		38		61		0.5	U	85				8260B
	8/12-14/02	0.5	U	14		58		-		16		42		13		7		0.5	U	47		0.5	U	53				CLP/8260B
	1/21-22/03	-		18		29		-		-		-		13		-		-		42		-		59				CLP
	7/14-15/03	1	U	53		28		-		-		1	U	1	U	8.2		30	J	1	U	1	UJ	11				8260B
	3/16-17/04	-		100		33		-		-		36		45		-		-		18		-		21				CLP
	9/29-30/04	0.5	U	92	J	29	J	-		-		0.17	J	25	J	7.4	J	24	J	34	J	0.32	J	15	J			8260B
	3/30-31/05	-		110		28		-		-		10	U	19		-		-		32		-		7	J			CLP
	10/3-4/05	-		110		30		-		-		0.21	J	25		21		21		33		0.19	J	6.4	J			8260B

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Watauga County Landfill
Watauga County, North Carolina
Upgradient Well: MW-1
05/26/06

Table 5A
Background Assessment Organic Target Parameter Analytical Results
1994-2005
Core Groundwater Monitoring Wells

Parameter	Event	Results ug/l(ppb)																												Analysis Type
		MW-1		MW-2		MW-3		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-15		MW-17							
1,1-Dichloroethene	6/20/94	10	U	160		5	J	25	U	9.75	U	0.3	J	9.75	U	32.29		9.75	U	1.15	J	9.75	U	1.09	J						CLP/8021
	9/27/94	10	U	210		6	J	25	U	10	U	4	J	10	U	160		10	U	5	J	10	U	3	J						CLP
MCL= 7 ug/l	2/06/95	10	U	360		6	J	25	U	1	U	6	J	10	U	100		10	U	4	J	1.0	U	3	J						CLP
NCS = 7 ug/l	4/11/95	10	U	150	J	3	J	25	U	10	U	3	J	10	U	120		10	U	2	J	10	U	1	J						CLP
	7/10/95	2	U	170		4		2	U	2	U	5.7		2	U	160	J	0.86	J	3.9		10	U	1.8	J						8021
	7/10/95	5	U	170	J	3.7	J	1.3	J	5	U	4.1	J	5	U	88		5	U	3.6	J	-		1.6	J						8260
	4/10/96	10	U	210		3	J	25	U	10	U	6	J	10	U	51		10	U	3	J	10	U	2	J						CLP
	4/8/97	1	U	180		1.9		-		1	U	4.9		0.54	J	84		1.1		2.7		0.77	J	1.2							8021
	1/15/98	10	U	50		2	J	-		10	U	3	J	10	U	20		10	U	2	J	10	U	1	J						CLP
	6/23/98	-		160	J	10	UJ	-		-		2	J	10	UJ	-		-		2	J	-		1	J						CLP
	1/12/99	1	U	77		1.9		-		1	U	3.2		1	U	26		1.2		1.9		1	U	1	U						8021B
	7/12/99	-		47		1	J	-		-		2	J	10	U	-		-		10	U	-		10	U						CLP
	2/1/00	1	U	26		1.2		-		1	U	2.4		1	U	31		1.4		1.6		0.96	J	1.2							8021B
	8/8/00	-		56		1	J	-		-		2	J	10	U	-		-		1	J	-		10	U						CLP
	2/12-14/01	1	U	19		1.3		-		1	U	1	U	1	U	63		1.2		1.3		0.61	J	1.4							8021B
	8/7-8/01	-		14		10	U	-		-		2	J	10	U	-		-		10	U	-		0.8	J						CLP
	2/11-14/02	0.5	U	9		3	U	-		0.8		0.8		12		16		0.8		0.9		0.5	U	0.8							8260B
	8/12-14/02	0.5	U	22		10	U	-		1	U	10	U	10	U	7		0.5	U	10	U	0.5	U	10	U						CLP/8260B
	1/21-22/03	-		32		0.3	J	-		-		-		10	U	-		-		0.8	J	-		0.8	J						CLP
	7/14-15/03	1	U	79		4	U	-		-		1	U	1	U	15		1	UJ	1	U	1	UJ	1	UJ						8260B
	3/16-17/04	-		150		10	U	-		-		1	J	10	U	-		-		10	U	-		10	U						CLP
	9/29-30/04	0.5	U	180	J	0.5	U	-		-		0.48	J	0.28	J	11		0.86	J	1.4		0.43	J	0.32	J						8260B
	3/30-31/05	-		150		10	U	-		-		10	U	10	U	-		-		10	U	-		10	U						CLP
	10/3-4/05	-		160		0.52		-		-		0.5	U	0.5	U	26		0.6	J	0.7		0.2	J	0.5	U						8260B
cis 1,2-Dichloroethene(2)	6/20/94	10	U	120	U	37		330		0.97	J	28.9		0.95	J	9.49	U	5.05	J	28.13		9.49	U	60.79	J						CLP/8021
	9/27/94	10	U	170	U	61		380		3	J	93		2	J	10	U	8	J	47		10	U	120							CLP
MCL= 70 ug/l	2/06/95	10	U	150	U	54		370		7.2		91		2	J	50	U	8	J	37		1.0	U	80							CLP
NCS = 70 ug/l	4/11/95	10	U	200	U	44		330		9	J	100		4	J	71	U	6	J	30		10	U	70							CLP
	7/10/95	2	U	2	U	65		440	J	4.4		110	J	7.4		2	U	11		37		10	U	72	J						8021
	7/10/95	5	U	5	U	50		430		7.9		89		6.2		5	U	7.6		42		-		63							8260
	4/10/96	10	U	91	U	64		420		6	J	78		11		23	U	11		54		10	U	87							CLP
	4/8/97	1	U	1	U	58		-		4.4		34		13		1	U	17		60		1	U	100							8021
	1/15/98	10	U	20	U	62		-		11		29		14		14	U	18		56		10	U	87							CLP
	6/23/98	-		25	UJ	50	J	-		-		43	J	12	J	-		-		52	J	-		79	J						CLP
	1/12/99	1	U	1	U	90		-		7.1		20		14		1	U	19		63		1	U	89							8021B
	7/12/99	-		10	U	69		-		-		21		12		-		-		10	U	-		88							CLP
	2/1/00	1	U	1	U	97		-		5.6		13		15		1	U	39		77		1	U	120							8021B
	8/8/00	-		10	U	120		-		-		13		16		-		-		69		-		90							CLP
	2/12-14/01	1	U	1	U	170		-		3.8		1	U	22		1	U	52		97		1	U	160							8021B
	8/7-8/01	-		10	U	59		-		-		13		14		-		-		83		-		180							CLP
	2/11-14/02	0.5	U	0.5	U	89		-		6		6		10		0.5	U	50		86		0.5	U	160							8260B
	8/12-14/02	0.5	U	10	U	110		-		5		9	J	11		1	U	0.5	U	75		0.5	U	110							CLP/8260B
	1/21-22/03	-		10	U	62		-		-		-		13		-		-		80		-		150							CLP
	7/14-15/03	1	U	17	U	66		-		-		1	U	1	U	4.2	U	35	J	1	U	U	UJ	21							8260B
	3/16-17/04	-		10	U	11		-		-		17		59		-		-		10		-		48							CLP
	9/29-30/04	0.16	J	0.37	J	64	J	-		-		0.5	U	16	J	0.84	U	25	J	61	J	0.16	J	37							8260B
	3/30-31/05	-		67	U	82		-		-		10	U	12		-		-		63		-		17							CLP
	10/3-4/05	-		25	U	73		-		-		0.27	J	15		0.5	U	24		56		0.5	U	13	J						8260B

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Watauga County Landfill
Watauga County, North Carolina
Upgradient Well: MW-1
05/26/06

Table 5A
Background Assessment Organic Target Parameter Analytical Results
1994-2005
Core Groundwater Monitoring Wells

Parameter	Event	Results ug/l(ppb)																										Analysis Type
		MW-1		MW-2		MW-3		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-15		MW-17				
Methylene Chloride	6/20/94	8	J	120	U	6	J	11	J	36.2	UJ	36.2	UJ	140.1	J	36.2	UJ	36.2	UJ	8.58	J	36.20	UJ	36.2	UJ	CLP/8021
	9/27/94	10	U	490		14	U	25	U	10	U	4	J	73		180		10	U	28	U	10	U	58	U	CLP
MCL= 5 ug/l	2/06/95	10	U	150	U	10	U	25	U	1.5		10	U	93		50	U	10	U	10	U	1.0	U	10	U	CLP
NCS = 5 ug/l	4/11/95	10	U	200	U	10	U	25	U	10	U	10	U	120		71	U	10	U	10	U	10	U	10	U	CLP
	7/10/95	2	U	2	U	2.4		1.2	J	2	U	4.7		89		2	U	2.9		3.3		10	U	2.2		8021
	7/10/95	5	U	5	U	5	U	5	U	5	U	5	U	160		5	U	5	U	5.9	U	-		5	U	8260
	4/10/96	10	U	91	U	10	U	25	U	10	U	10	U	120		23	U	10	U	10	U	10	U	10	U	CLP
	4/8/97	1	U	1	U	0.71	J	-		1.4		1.6		100		1	U	0.7	J	1.1		0.656	J	0.63	J	8021
	1/15/98	1	J	20	U	2	J	-		2	J	3	J	90		4	J	1	J	2	J	1	J	2	J	CLP
	6/23/98	-		25	UJ	10	UJ	-		-		10	UJ	10	UJ	-		-		10	UJ	-		10	UJ	CLP
	1/12/99	1	U	1	U	1	U	-		1	U	1.8		2.3		1	U	1	U	1	U	1	U	1	U	8021B
	7/12/99	-		10	UJ	10	UJ	-		-		10	UJ	10	UJ	-		-		10	UJ	-		10	UJ	CLP
	2/1/00	1	J	1	U	0.76	J	-		0.70	J	1.5		1	U	1	U	1.0		0.82	J	1	U	0.98	J	8021B
	8/8/00	-		10	UJ	10	UJ	-		-		10	UJ	10	UJ	-		-		10	UJ	-		10	UJ	CLP
	2/12-14/01	1	J	1	U	0.71	J	-		0.70	J	1	U	1	U	1	U	0.93	J	0.54	J	1	U	1.4		8021B
	8/7-8/01	-		2	J	2	J	-		-		3	J	10	U	-		-		10	U	-		10	U	CLP
	2/11-14/02	0.5	U	0.5	U	3	U	-		0.5	U	0.5	U	0.5	U	0.5	U	0.7	J	0.5	J	0.5	U	0.8	J	8260B
	8/12-14/02	0.5	UJ	10	U	10	U	-		1	UJ	10	U	10	U	1	UJ	0.5	UJ	10	U	0.5	UJ	10	U	CLP/8260B
	1/21-22/03	-		10	U	10	U	-		-		-		10	U	-		-		10	U	-		10	U	CLP
	7/14-15/03	1	U	17	U	4	U	-		-		1	U	1	U	4.2	U	1	UJ	1	U	1	UJ	1	U	8260B
	3/16-17/04	-		10	U	10	U	-		-		-		10	U	-		-		10	U	-		10	U	CLP
	9/29-30/04	0.5	U	0.65	U	0.88	U	-		-		0.5	U	0.5	U	0.5	U	0.55	U	0.5	U	0.5	U	0.5	U	8260B
	3/30-31/05	-		67	U	10	U	-		-		10	U	10	U	-		-		10	U	-		10	U	CLP
	10/3-4/05	-		25	U	0.66		-		-		0.5	U	0.31	J	0.5	U	0.38	J	0.76		0.5	U	0.5	U	8260B
Tetrachloroethene	6/20/94	10	U	120	U	44		6	J	0.88	J	7.55	J	2.15	J	1.3	J	7.47	J	22.78		7.84	U	37.43		CLP/8021
	9/27/94	10	U	170	U	53		26		10	U	33		5	J	12	J	9	J	36		10	U	64		CLP
MCL= 5 ug/l	2/06/95	10	U	18	J	46		33		1	U	31		4	J	6	J	8	J	32		1.0	U	48		CLP
NCS = 0.7 ug/l	4/11/95	10	U	200	U	33		13	J	10	U	33		5	J	10	J	7	J	28		10	U	41		CLP
	7/10/95	2	U	12		31		13		2	U	42	J	5		13		10		27		10	U	40		8021
	7/10/95	5	U	9.9		37		14		5	U	38		3.6	J	5.7		8.1		31		-		30		8260
	4/10/96	10	U	20	J	46		10	J	10	U	36		4	J	4	J	12		37		10	U	41		CLP
	4/8/97	1	U	11		21		-		1	U	13		3.4		4.4		11		23		1	U	21		8021
	1/15/98	10	U	4	J	21		-		10	U	11		3	J	3	J	10		25		10	U	28		CLP
	6/23/98	-		12	J	16	J	-		-		18	J	3	J	-		-		19	J	-		26	J	CLP
	1/12/99	1	U	4.2		19		-		1	U	7.6		1.9		2.6		7		13		1	U	16		8021B
	7/12/99	-		3	J	19		-		-		8	J	2	J	-		-		10	U	-		29	J	CLP
	2/1/00	1	U	1.5		15		-		1	U	5.4		1.8		2.7		8.4		14		1	U	21		8021B
	8/8/00	-		4	J	24		-		-		7	J	1	J	-		-		14		-		16		CLP
	2/12-14/01	1	U	1.4		20		-		1	U	1	U	2		3.3		8.0		12		1	U	23		8021B
	8/7-8/01	-		3	J	9	J	-		-		5	J	1	J	-		-		11		-		25		CLP
	2/11-14/02	0.5	U	2		12		-		0.5	U	5		0.8		2		6		10		0.5	U	16		8260B
	8/12-14/02	0.5	U	2	J	14		-		1	U	3	J	1	J	1	U	0.5	U	11		0.5	U	15		CLP/8260B
	1/21-22/03	-		2	J	7	J	-		-		-		1	J	-		-		10		-		17		CLP
	7/14-15/03	1	U	17	U	4.4		-		-		1	U	1	U	4.2	U	5	J	1	U	1	UJ	2.3		8260B
	3/16-17/04	-		7	J	3	J	-		-		4	J	9	J	-		-		8	J	-		10		CLP
	9/29-30/04	0.5	U	6	J	5.2	J	-		-		0.65	J	1.6	J	1.3		3.1	J	5.9		0.5	U	5	J	8260B
	3/30-31/05	-		8	J	5	J	-		-		10	U	1	J	-		-		5	J	-		3	J	CLP
	10/3-4/05	-		25	U	5.9		-		-		0.53		1.5		2.6		3.4		5		0.5	U	5.1	J	8260B

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Watauga County Landfill
Watauga County, North Carolina
Upgradient Well: MW-1
05/26/06

Table 5A

Background Assessment Organic Target Parameter Analytical Results

1994-2005

Core Groundwater Monitoring Wells

Parameter	Event	Results ug/l (ppb)																										Analysis Type
		MW-1		MW-2		MW-3		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-15		MW-17				
Trichloroethene	6/20/94	10	U	120	U	16		21	J	21.2	U	21.2	U	21.2	U	21.2	U	21.2	U	5.74	J	21.20	U	15.7	J			CLP/8021
	9/27/94	10	U	170	U	23		71		10	U	15		6	J	10	U	3	J	14		10	U	34				CLP
MCL= 5 ug/l	2/06/95	10	U	150	U	19		88		2.5	U	14		6	J	50	U	3	J	13		2.5	U	24				CLP
NCS = 2.8 ug/l	4/11/95	10	U	200	U	12		53		1	J	13		6	J	71	U	2	J	10		10	U	19				CLP
	7/10/95	2	U	1.2	J	20		67	J	1.6	J	28		8.6		2	U	5.8		16		10	U	21	J			8021
	7/10/95	5	U	5	U	16		47		1.2	J	15		6		5	U	3.1	J	13		-		17				8260
	4/10/96	10	U	91	U	21		28		10	U	16		6	J	23	U	4	J	15		10	U	19				CLP
	4/8/97	1	U	1.9		12		-		53	U	11		5.1		1.2		6		14		1	U	16				8021
	1/15/98	10	U	20	U	11		-		1	J	8	J	4	J	14	U	5	J	12		10	U	16				CLP
	6/23/98	-		25	UJ	8	J	-		-		9	J	3	J	-		-		10	J	-		15	J			CLP
	1/12/99	1	U	1	U	14		-		1	U	6.9		3.1		1	U	5		9.5		1	U	13				8021B
	7/12/99	-		3	J	10		-		-		10		3	J	-		-		10	U	-		15				CLP
	2/1/00	1	U	1	U	11		-		1	J	6.3		2.7		1	U	6.6		10		1	U	17				8021B
	8/8/00	-		10	U	12	J	-		-		10	U	10	U	-		-		10	U	-		11	J			CLP
	2/12-14/01	1	U	1	U	13		-		0.8	J	1	U	3.1		0.59	J	6.6		8.7		1	U	16				8021B
	8/7-8/01	-		10	U	5	J	-		-		6	J	2	J	-		-		7	J	-		15				CLP
	2/11-14/02	0.5	U	0.5	U	7		-		0.6		3		1		0.5	U	4		6		0.5	U	9				8260B
	8/12-14/02	0.5	U	10	U	12		-		1	U	6	J	4	J	1	U	0.5	U	9	J	0.5	U	12				CLP/8260B
	1/21-22/03	-		0.3	J	5	J	-		-		-		2	J	-		-		8	J	-		12				CLP
	7/14-15/03	1	U	17	U	4	U	-		-		2.1	J	1	U	4.2	U	3.5	J	1	U	1	UJ	1.5				8260B
	3/16-17/04	-		10	U	4	J	-		-		6	J	5	J	-		-		4	J	-		6	J			CLP
	9/29-30/04	0.5	U	0.97	J	4.6	J	-		-		1.1	J	2.6	J	0.84	U	3.2	J	4.7		0.5	U	4.6	J			8260B
	3/30-31/05	-		11	J	7	J	-		-		2	J	2	J	-		-		5	J	-		2	J			CLP
	10/3-4/05	-		25	U	5.5		-		-		2.2		2.6		0.21	J	2.5		5.3		0.5	U	2.1	J			8260B
1,1,1-Trichloroethane	6/20/94	10	U	1800		31		25	U	30.11	U	2.42	J	11.89	J	130.14	J	4.83	J	16.79	J	0.08	J	13.39	J			CLP/8021
	9/27/94	10	U	1900		35		25	U	10	U	6	J	18		1830		5	J	24		5	J	16				CLP
MCL= 200 ug/l	2/06/95	10	U	2700		31		25	U	1	U	6	J	14		650		5	J	18		2.5		14				CLP
NCS = 200 ug/l	4/11/95	10	U	2000		21		25	U	10	U	5	J	16		1300		5	J	17		3	J	10				CLP
	7/10/95	2	U	1600		26		2	U	2	U	6		12		990		5.9		17		10	U	7.8				8021
	7/10/95	5	U	1600		21		5	U	5	U	4.9	J	9.8		740		4.8	J	16		-		7				8260
	4/10/96	10	U	1300		21		25	U	10	U	8	J	8	J	290		6	J	15		4	J	7	J			CLP
	4/8/97	1	U	770		8.2		-		1	U	4.5		1.5		570		6.1		11		4.1		2.9				8021
	1/15/98	10	U	320		7	J	-		10	U	4	J	10	U	150		7	J	9	J	5	J	3	J			CLP
	6/23/98	-		710	J	3	J	-		-		3	J	10	UJ	-		-		6	J	-		3	J			CLP
	1/12/99	1	U	310		4.7		-		1	U	2.5		1	U	170		6.3		5.4		3.4		1.2				8021B
	7/12/99	-		190		3	J	-		-		2	J	10	U	-		-		10	U	-		1	J			CLP
	2/1/00	1	U	110		2.8		-		1.7		1	U	180	J	6.0		3.9		3.9		1.7		1.7				8021B
	8/8/00	-		250	J	3	J	-		-		2	J	10	U	-		-		10	U	-		1	J			CLP
	2/12-14/01	1	U	89		3.4		-		1	U	1	U	1	U	380		1	U	2.5		2.4		2.8				8021B
	8/7-8/01	-		89		1	J	-		-		10	U	10	U	-		-		2	J	-		2	J			CLP
	2/11-14/02	0.5	U	41		3	U	-		0.5	U	0.5	U	0.5	U	130		3		2		1		2				8260B
	8/12-14/02	0.5	U	130		10	U	-		1	U	10	U	10	U	58		0.5	U	10	U	0.5	U	10	U			CLP/8260B
	1/21-22/03	-		180		1	J	-		-		-		10	U	-		-		2	J	-		1	J			CLP
	7/14-15/03	1	U	550		4	U	-		-		1	U	1	U	70		3.3	J	1	U	1.1	J	1	U			8260B
	3/16-17/04	-		630		10	U	-		-		10	U	3	J	-		-		10	U	-		10	U			CLP
	9/29-30/04	0.5	U	580	J	0.5	U	-		-		0.95	J	0.37	J	40		3.2	J	2.1		1.2		0.33	J			8260B
	3/30-31/05	-		760	U	10	U	-		-		10	U	10	U	-		-		10	U	-		10	U			CLP
	10/3-4/05	-		740		0.5	U	-		-		0.5	U	0.5	U	150		1.0	U	1.4		0.86		0.5	U			8260B

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Watauga County Landfill
Watauga County, North Carolina
Upgradient Well: MW-1
05/26/06

Table 5A

Background Assessment Organic Target Parameter Analytical Results

1994-2005

Core Groundwater Monitoring Wells

Parameter	Event	Results ug/l(ppb)																										Analysis Type
		MW-1		MW-2		MW-3		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-15		MW-17				
Vinyl Chloride	6/20/94	10	U	120	U	10	U	10	J	6.6	UJ	6.6	UJ	6.6	UJ	6.6	UJ	6.6	UJ	6.6	UJ	6.60	UJ	6.6	UJ			CLP/8021
	9/27/94	10	U	170	U	3	J	10	J	10	U	5	J	10	U	10	U	10	U	10	U	10	U	14	U			CLP
MCL= 2 ug/l	2/06/95	10	U	150	U	2	J	20	J	3.6		6	J	10	U	50	U	10	U	10	U	1.0	U	10	U			CLP
NCS = 0.15 ug/l	4/11/95	10	U	200	U	10	U	10	J	2	J	6	J	10	UJ	71	U	10	U	10	UJ	10	UJ	10	U			CLP
	7/10/95	2	U	2	U	2.9	J	12	J	2	U	11	J	2	U	2	U	2	U	2.3		10	U	0.94	J			8021
	7/10/95	5	U	5	U	3.1	J	23		5	U	7.2		5	U	5	U	5	U	5	U	-		5	U			8260
	4/10/96	10	U	91	U	2	J	14	J	10	U	5	J	10	U	23	U	10	U	10	U	10	U	10	U			CLP
	4/8/97	1	U	1	U	0.98		-		1	U	3	J	1	U	1	U	2.8	J	1	U	1	U	4	J			8021
	1/15/98	10	U	20	U	10	U	-		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U			CLP
	6/23/98	-		25	UJ	10	UJ	-		-		2	J	10	UJ	-		-		2	J	-		2	J			CLP
	1/12/99	1	U	1	U	5		-		1	U	1.8		2		1	U	1	U	2.8		1	U	3.1				8021B
	7/12/99	-		10	U	2	J	-		-		10	U	10	U	-		-		10	U	-		2	J			CLP
	2/1/00	1	U	1	U	4.2		-		0.75	J	1.7		3.1		1	U	2.4		3.8		1	U	5.5				8021B
	8/8/00	-		10	U	5	J	-		-		10	U	2	J	-		-		2	J	-		2	J			CLP
	2/12-14/01	1	U	1	U	6.6	J	-		1	U	1	U	2.8	J	1	U	2.9	J	3.9	J	1	U	8.0	J			8021B
	8/7-8/01	-		10	U	10	U	-		-		10	U	2	J	-		-		3	J	-		8	J			CLP
	2/11-14/02	0.5	U	0.5	U	4		-		2		0.5	U	1		0.5	U	3		4		0.5	U	6				8060B
	8/12-14/02	0.5	U	10	U	5	J	-		2	J	10	U	10	U	1	U	0.5	U	3	J	0.5	U	4	J			CLP/8260B
	1/21-22/03	-		10	U	0.9	J	-		-		-		0.9	J	-		-		2	J	-		4	J			CLP
	7/14-15/03	1	U	17	U	4	U	-		-		1	U	1	U	4.2	U	1.8	J	1	U	1	UJ	1.2				8060B
	3/16-17/04	-		10	U	10	U	-		-		10	U	3	J	-		-		10	U	-		10	U			CLP
	9/29-30/04	0.5	U	1.3	J	4.7	J	-		-		0.5	U	2.9	J	0.84	U	3.1	J	3.3		0.5	U	2.4	J			8260B
	3/30-31/05	-		67	U	10	U	-		-		10	U	10	U	-		-		10	U	-		10	U			CLP
	10/3-4/05	-		25	UJ	5.8	J	-		-		0.5	UJ	2.4	J	0.5	UJ	3.4	J	4.3	J	0.5	UJ	0.25	J			8260B

TABLE 5A NOTES:

U Denotes not detected (the associated numerical value is the CRQL/LOQ).
J Denotes an estimated value
CRQL Contract Required Quantification Limit (CLP Methods)
LOQ Limit of Quantitation (SW-846 Methods)
- Denotes Not Avaliable or Not Sampled
Shading - denotes Parameter results that exceed U.S. EPA Maximum Contaminant Levels.

NCS Denotes North Carolina Groundwater Quality Standard (T15A: 02L .0200)
MCL Denotes EPA Maximum Contaminant Level (EPA 822-R-94-001)

ANALYSIS TYPE:

1) Organic parameters were analyzed utilizing CLP Statement of Work OLMO1.9(3/90), SW-846 Method #8260 and/or #8021, as noted.
2) For the 6/94 event, monitoring wells MW-8, MW-9, MW-10, MW-11, MW-12, MW-15 and MW-17, SW-846 anlytical method #8021 analysis was performed.
For the 8//02 event, monitoring wells MW-1, MW-10, MW-11, and MW-15, SW-846 analytical method #8260b, 25 ml purge analysis was performed.
Other monitoring locations were analyzed using CLP analytical methods.

j:\6520-21\CORRESP\REPORTS\TABLE5A3.XLS

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Table 5B

12/13/05

Watauga County, North Carolina

Background Assessment Organic Target Parameter Analytical Results

Upgradient Well: MW-1

Boundary Groundwater Monitoring Wells

Parameter Results ug/l(ppb)	Event	MW-4		MW-5		MW-13		MW-14		MW-15		MW-16		MW-18		Analysis Type	NCS (ug/L)	MCL (ug/L)
cis-1,2-Dichloroethene(3)	6/20/94	10	U	-		9.49	U	9.49	U	9.49	U	9.49	U	9.49	U	8021	70	70
	9/27/94	10	U	-		10	U	10	U	10	U	10	U	10	U	CLP	70	70
	2/06/95	10	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	8021	70	70
	4/11/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	CLP	70	70
	7/10/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	8021	70	70
	4/10/96	-		-		-		-		10	U	-		-		CLP	70	70
	4/8/97	-		-		-		-		1	U	-		-		8021	70	70
	1/15/98	10	U	10	U	10	U	10	U	10	U	-		10	U	CLP	70	70
	2/12-14/01	1	U	1	U	1	U	1	U	1	U	-		1	U	8021	70	70
	2/11-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	70	70
	8/12-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	70	70
trans-1,3-Dichloropropene	6/20/94	10	U	-		24.49	U	24.49	U	24.49	U	24.49	U	24.49	U	8021	-	-
	9/27/94	10	U	-		10	U	10	U	10	U	10	U	10	U	CLP	-	-
	2/06/95	10	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	8021	-	-
	4/11/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	CLP	-	-
	7/10/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	8021	-	-
Methylene Chloride	6/20/94	10	U	-		36.20	UJ	36.20	UJ	36.20	UJ	36.20	UJ	36.20	U	8021	5	5
	9/27/94	13	U	-		10	U	10	U	10	U	33		27		CLP	5	5
	2/06/95	10	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	8021	5	5
	4/11/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	CLP	5	5
	7/10/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	8021	5	5
	4/10/96	-		-		-		-		10	U	-		-		CLP	5	5
	4/8/97	-		-		-		-		0.656	J	-		-		8021	5	5
	1/15/98	-		-		-		-		1	J	-		-		CLP	5	5
	2/12-14/01	1	U	1	U	1	U	1	U	1	U	-		1	U	8021	5	5
	2/11-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	5	5
	8/12-14/02	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	8260B	5	5
Tetrachloroethene	6/20/94	10	U	-		7.84	U	0.24	J	7.84	U	7.84	U	7.84	U	8021	0.7	5
	9/27/94	10	U	-		10	U	10	U	10	U	10	U	10	U	CLP	0.7	5
	2/06/95	10	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	8021	0.7	5
	4/11/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	CLP	0.7	5
	7/10/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	8021	0.7	5
	4/10/96	-		-		-		-		10	U	-		-		CLP	0.7	5
	4/8/97	-		-		-		-		1	U	-		-		8021	0.7	5
	1/15/98	10	U	10	U	10	U	10	U	10	U	-		10	U	CLP	0.7	5
	2/12-14/01	1	U	1	U	1	U	1	U	1	U	-		1	U	8021	0.7	5
	2/11-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	0.7	5
	8/12-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	0.7	5
Trichloroethene	6/20/94	10	U	-		21.20	U	21.20	U	21.20	U	21.20	U	21.20	U	8021	2.8	5
	9/27/94	10	U	-		10	U	10	U	10	U	10	U	10	U	CLP	2.8	5
	2/06/95	10	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	8021	2.8	5
	4/11/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	CLP	2.8	5
	7/10/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	8021	2.8	5
	4/10/96	-		-		-		-		10	U	-		-		CLP	2.8	5
	4/8/97	-		-		-		-		1	U	-		-		8021	2.8	5
	1/15/98	10	U	10	U	10	U	10	U	10	U	-		10	U	CLP	2.8	5
	2/12-14/01	1	U	1	U	1	U	1	U	1	U	-		1	U	8021	2.8	5
	2/11-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	2.8	5
	8/12-14/02	0.5	U	0.5	U	0.5	U	1	J	0.5	U	0.5	U	0.5	U	8260B	2.8	5

Table 5B

Watauga County, North Carolina — Background Assessment Organic Target Parameter Analytical Results

Upgradient Well: MW-1 — Boundary Groundwater Monitoring Wells

Parameter Results ug/l(ppb)	Event	MW-4		MW-5		MW-13		MW-14		MW-15		MW-16		MW-18		Analysis Type	NCS (ug/L)	MCL (ug/L)
1,1,1-Trichloroethane	6/20/94	10	U	-		30.11	U	30.11	U	0.08	J	30.11	U	30.11	U	8021	200	200
	9/27/94	10	U	-		10	U	10	U	5	J	10	U	10	U	CLP	200	200
	2/06/95	10	U	1.0	U	1.0	U	1.0	U	2.5		1.0	U	1.0	U	8021	200	200
	4/11/95	10	U	10	U	10	U	1	J	3	J	10	U	10	U	CLP	200	200
	7/10/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	8021	200	200
	4/10/96	-		-		-		-		4	J	-		-		CLP	200	200
	4/8/97	-		-		-		-		4.1		-		-		8021	200	200
	1/15/98	10	U	10	U	10	U	10	U	5	J	-		10	U	CLP	200	200
	2/12-14/01	1	U	1	U	1	U	1	U	1	U	-		1	U	8021	200	200
	2/11-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	200	200
	8/12-14/02	0.5	U	0.5	U	0.5	U	1		0.5	U	0.5	U	0.5	U	8260B	200	200
Vinyl Chloride	6/20/94	10	U	-		6.60	UJ	6.60		6.60	UJ	6.60	UJ	6.60	U	8021	0.015	2
	9/27/94	10	U	-		10	U	10	U	10	U	10	U	10	U	CLP	0.015	2
	2/06/95	10	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	8021	0.015	2
	4/11/95	10	UJ	10	U	10	U	10	UJ	10	UJ	10	UJ	10	UJ	CLP	0.015	2
	7/10/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	8021	0.015	2
	4/10/96	-		-		-		-		10	U	-		-		CLP	0.015	2
	4/8/97	-		-		-		-		1	U	-		-		8021	0.015	2
	1/15/98	10	U	10	U	10	U	10	U	10	U	-		10	U	CLP	0.015	2
	2/12-14/01	1	U	1	U	1	U	1	U	1	U	-		1	U	8021	0.015	2
	2/11-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	0.015	2
	8/12-14/02	0.5	U	0.5	U	0.5	U	1	U	0.5	U	0.5	U	0.5	U	8260B	0.015	2

TABLE 5B NOTES:

U Denotes not detected above Instrument Detection Level (IDL) for Inorganics and not detected above CRQL/LOQ for Organics.

J Denotes an estimated value

CRQL Contract Required Quantification Limit (CLP Methods)

LOQ Limit of Quantitation (SW-846 Methods)

- Denotes Not Avaliable or Not Sampled

NCS Denotes North Carolina Groundwater Quality Standard (T15A: 02L .0200)

MCL Denotes EPA Maximum Contaminant Level (EPA 822-R-94-001)

Shading - denotes parameter results that exceed U.S. EPA Maximum Contaminant Levels.

ANALYSIS TYPE NOTES:

1) Organic parameters were analyzed utilizing CLP Statement of Work OLMO3.2, SW-846 Method #8260B and/or #8021, as noted.

2) For CLP, 1,2-Dichloroethene was reported as total concentration; for 8021/8260B concentration was reported for cis-isomer.

P:\06\500\06520\06520-39\Reports\2005 tables\[TABLE5B.xls]SURFACE WATER

Watauga County, North Carolina
Upgradient Well: MW-1
12/12/05

Table 5C
Background Assessment Organic Target Parameter Analytical Results
Surface Water Sampling Locations
Results ug/l(ppb)

Parameter	Event	S1		S2		S3		S4		S5		S6		L1		Mt. Spring	
ORGANICS																	
Benzene	6/20/94	10	U	3	J	10	U	1	J	10	U	-		-		-	
	9/27/94	-		-		-		-		-		-		10	U	10	U
WQS = 71.4 ug/l	2/06/95	10	U	10	U	10	U	10	U	10	U	-		10	U	-	
	4/11/95	-		-		-		-		-		-		-		-	
	7/10/95	10	U	10	U	10	U	10	U	10	U	-		-		-	
	4/10/96	10	U	2	J	10	U	10	U	10	U	10	U	-		-	
	4/8/97	10	U	2	J	10	U	10	U	10	U	10	U	-		-	
	1/15/98	10	U	3	J	10	U	10	U	10	U	10	U	-		-	
	6/23/98	10	UJ	1	J	10	UJ	10	UJ	10	UJ	10	UJ	-		-	
	1/12/99	10	U	2	J	10	U	10	U	10	U	10	U	-		-	
	7/12/99	10	U	2	J	10	U	10	U	10	U	10	U	-		-	
	2/1/00	10	U	2	J	10	U	10	U	10	U	10	U	-		-	
	8/8/00	10	U	2	J	10	U	10	U	10	U	10	U	-		-	
	2/12-14/01	10	U	2	J	10	U	10	U	10	U	10	UJ	-		-	
	8/7-8/01	10	U	10	U	10	U	10	U	2	J	10	U	-		-	
	2/11-14/02	10	U	2	J	10	U	10	U	10	U	10	UJ	-		-	
	8/12-14/02	DRY		4	J	10	U	10	U	DRY		10	U	-		-	
	1/21-22/03	10	U	2	J	10	U	10	U	10	U	10	UJ	-		-	
	7/14-15/03	10	U	2	J	10	U	10	U	10	U	10	UJ	-		-	
	3/16-17/04	10	U	10	J	10	U	10	U	10	U	10	UJ	-		-	
	9/29-30/04	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	3/30-31/05	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	10/3-4/05	10	U	2	J	10	U	10	U	10	U	10	U	-		-	
Chloroethane	6/20/94	10	U	56		10	U	10	U	11		-		-		-	
	9/27/94	-		-		-		-		-		-		13		10	U
WQS = 860 ug/l	2/06/95	10	U	26		10	U	2	J	7	J	-		6	J	-	
	4/11/95	-		-		-		-		-		-		-		-	
	7/10/95	15		10	U	10	U	4	J	10	U	-		-		-	
	4/10/96	8	J	46		10	U	3	J	5	J	10	U	-		-	
	4/8/97	10	U	50		10	U	1	J	23		10	U	-		-	
	1/15/98	10	U	56		10	U	10	U	10	U	10	U	-		-	
	6/23/98	2	J	26	J	10	UJ	1	J	4	J	10	UJ	-		-	
	1/12/99	10	U	71		10	U	3	J	10	U	10	U	-		-	
	7/12/99	10	U	58		10	U	10	U	10	U	10	U	-		-	
	2/1/00	1	J	70		10	U	2	J	10	U	10	U	-		-	
	8/8/00	5	J	44		10	U	2	J	10	U	10	UJ	-		-	
	2/12-14/01	10	U	110		23		10	U	4	J	10	U	-		-	
	8/7-8/01	10	U	10	U	10	U	10	U	72		10	U	-		-	
	2/11-14/02	10	U	55		23		10	U	10	U	10	U	-		-	
	8/12-14/02	DRY		150	J	10	UJ	10	UJ	DRY		10	UJ	-		-	
	1/21-22/03	10	U	57		10	U	2	J	10	U	10	U	-		-	
	7/14-15/03	10	U	47		10	U	10	U	10	U	10	U	-		-	
	3/16-17/04	10	U	9	J	10	U	10	U	10	U	10	U	-		-	
	9/29-30/04	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	3/30-31/05	10	U	31		10	U	10	U	10	U	DRY		-		-	
	10/3-4/05	10	U	44		10	U	10	U	10	U	10	U	-		-	
Dichlorodifluoromethane	6/20/94	10	U	4	J	10	U	10	U	10	U	-		-		-	
	9/27/94	-		-		-		-		-		-		10	U	10	U
WQS = 570000 ug/l	2/06/95	10	U	10	U	10	U	10	U	10	U	-		10	U	-	
	4/11/95	-		-		-		-		-		-		-		-	
	7/10/95	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	-		-		-	
	4/10/96	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	4/8/97	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	1/15/98	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	6/23/98	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	-		-	
	1/12/99	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	7/12/99	10	U	17	U	10	U	10	U	10	U	10	U	-		-	
	2/1/00	10	U	10	U	10	U	10	U	10	UJ	10	UJ	-		-	
	8/8/00	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	2/12-14/01	10	U	14		10	U	10	U	10	U	10	U	-		-	
	8/7-8/01	10	UJ	10	UJ	10	UJ	10	UJ	3	J	10	UJ	-		-	
	2/11-14/02	10	UJ	10	UJ	10	UJ	10	UJ	10	U	10	UJ	-		-	
	8/12-14/02	DRY		10	UJ	10	UJ	10	UJ	DRY		10	UJ	-		-	
	1/21-22/03	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	7/14-15/03	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	-		-	
	3/16-17/04	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	9/29-30/04	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	3/30-31/05	10	U	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	-		-	
	10/3-4/05	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	-		-	
1,1-Dichloroethane	6/20/94	1	J	23		10	U	55		2	J	-		-		-	
	9/27/94	-		-		-		-		-		-		10	U	10	U
WQS = 42 ug/l	2/06/95	10	U	10	U	10	U	45		10	U	-		10	U	-	
	4/11/95	-		-		-		-		-		-		-		-	
	7/10/95	6	J	20		10	U	41		2	J	-		-		-	
	4/10/96	3	J	15		10	U	30		2	J	14		-		-	
	4/8/97	10	U	14		10	U	12		10	U	14		-		-	
	1/15/98	10	U	15		10	U	10	U	10	U	10	U	-		-	
	6/23/98	10	UJ	8	J	10	UJ	15	J	10	UJ	10	UJ	-		-	
	1/12/99	10	U	12		10	U	14		10	U	1	J	-		-	
	7/12/99	10	U	11	J	10	U	5	J	10	U	10	U	-		-	
	2/1/00	10	U	9	J	10	U	12		10	U	1	J	-		-	
	8/8/00	3	J	7	J	10	U	13		10	U	1	J	-		-	
	2/12-14/01	10	U	10	U	2	J	10	U	14		1	J	-		-	
	8/7-8/01	10	U	10	U	10	U	7	J	10	J	10	U	-		-	
	2/11-14/02	10	U	11		10	U	9	J	10	U	10	U	-		-	
	8/12-14/02	DRY		17		10	U	10		DRY		10	U	-		-	
	1/21-22/03	10	U	9	J	10	U	7	J	10	U	10	U	-		-	
	7/14-15/03	10	U	12		10	U	8	J	10	U	10	U	-		-	
	3/16-17/04	10	U	10	U	10	U	6	J	10	U	10	U	-		-	
	9/29-30/04	10	U	10	U	10	U	1	J	10	U	DRY		-		-	
	3/30-31/05	10	U	8	J	10	U	10	U	10	U	DRY		-		-	
	10/3-4/05	10	U	9	J	10	U	3	J	10	U	10	U	-		-	

Watauga County, North Carolina
Upgradient Well: MW-1
12/12/05

Table 5C
Background Assessment Organic Target Parameter Analytical Results
Surface Water Sampling Locations
Results ug/l(ppb)

Parameter	Event	S1		S2		S3		S4		S5		S6		L1		Mt. Spring	
1,1-Dichloroethene	6/20/94	10	U	10	U	10	U	10	U	10	U	-		-		-	
	9/27/94	-		-		-		-		-		-		10	U	10	U
WQS = 3.2 ug/l	2/06/95	10	U	10	U	10	U	10	U	10	U	-		10	U	-	
	4/11/95	-		-		-		-		-		-		-		-	
	7/10/95	10	U	10	U	10	U	10	U	10	U	-		-		-	
	4/10/96	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	4/8/97	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	1/15/98	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	6/23/98	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	-		-	
	1/12/99	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	7/12/99	10	U	17	U	10	U	10	U	10	U	10	U	-		-	
	2/1/00	10	U	10	U	10	U	10	U	10	U	10	UJ	-		-	
	8/8/00	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	2/12-14/01	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	8/7-8/01	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	2/11-14/02	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	8/12-14/02	DRY		10	U	10	U	10	U	DRY		10	U	-		-	
	1/21-22/03	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	7/14-15/03	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	3/16-17/04	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	9/29-30/04	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	3/30-31/05	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	10/3-4/05	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
cis-1,2-Dichloroethene(2)	6/20/94	10	U	4	J	10	U	58		10	U	-		-		-	
	9/27/94	-		-		-		-		-		-		10	U	10	U
WQS = 140000 ug/l	2/06/95	10	U	10	U	10	U	42		10	U	-		10	U	-	
	4/11/95	-		-		-		-		-		-		-		-	
	7/10/95	1	J	3	J	10	U	42		10	U	-		-		-	
	4/10/96	10	U	5	J	10	U	35		10	U	16		-		-	
	4/8/97	10	U	6	J	10	U	15		10	U	16		-		-	
	1/15/98	10	U	5	J	10	U	1	J	10	U	10	U	-		-	
	6/23/98	10	UJ	4	J	10	UJ	21	J	10	UJ	10	UJ	-		-	
	1/12/99	10	U	4	J	10	U	30		10	U	2	J	-		-	
	7/12/99	10	U	5	J	10	U	8	J	10	U	10	U	-		-	
	2/1/00	4	J	4	J	10	U	25		10	U	2	J	-		-	
	8/8/00	10	U	2	J	10	U	27		10	U	2	J	-		-	
	2/12-14/01	10	U	2	J	10	U	28		10	U	2	J	-		-	
	8/7-8/01	10	U	10	U	10	U	14		10	U	3	J	-		-	
	2/11-14/02	10	U	2	J	10	U	17		10	U	2	J	-		-	
	8/12-14/02	DRY		3	J	10	U	22		DRY		3	J	-		-	
	1/21-22/03	10	U	3	J	10	U	18		10	U	0.7	J	-		-	
	7/14-15/03	10	U	3	J	10	U	15		10	U	10	U	-		-	
	3/16-17/04	10	U	10	U	10	U	16		10	U	10	U	-		-	
	9/29-30/04	10	U	10	U	10	U	3	J	10	U	DRY		-		-	
	3/30-31/05	10	U	3	J	10	U	8	J	10	U	DRY		-		-	
	10/3-4/05	10	U	2	J	10	U	5	J	10	U	10	U	-		-	
Methylene Chloride	6/20/94	6	J	9	J	3	J	1	J	8	J	-		-		-	
	9/27/94	-		-		-		-		-		-		10	U	10	U
WQS = 1600 ug/l	2/06/95	10	U	2	J	3	J	1	J	10	U	-		10	U	-	
	4/11/95	-		-		-		-		-		-		-		-	
	7/10/95	10	U	10	U	10	U	10	U	10	U	-		-		-	
	4/10/96	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	4/8/97	10	U	3	J	1	J	10	U	10	U	10	U	-		-	
	1/15/98	1	J	4	J	4	J	1	J	2	J	2	J	-		-	
	6/23/98	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	-		-	
	1/12/99	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	7/12/99	10	U	17	U	10	U	10	U	10	U	10	U	-		-	
	2/1/00	10	U	10	UJ	10	UJ	10	UJ	10	U	10	UJ	-		-	
	8/8/00	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	2/12-14/01	10	U	3	J	10	U	10	U	2	J	10	U	-		-	
	8/7-8/01	10	U	3	J	10	U	10	U	1	J	10	U	-		-	
	2/11-14/02	10	U	2	J	10	U	10	U	10	U	10	U	-		-	
	8/12-14/02	DRY		10	U	10	U	10	U	DRY		10	U	-		-	
	1/21-22/03	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	7/14-15/03	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	3/16-17/04	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	9/29-30/04	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	3/30-31/05	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	10/3-4/05	10	U	2	J	10	U	10	U	10	U	10	U	-		-	
Tetrachloroethene	6/20/94	10	U	10	U	10	U	15		10	U	-		-		-	
	9/27/94	-		-		-		-		-		-		10	U	10	U
WQS = 8.84 ug/l	2/06/95	10	U	10	U	10	U	12		10	U	-		10	U	-	
	4/11/95	-		-		-		-		-		-		-		-	
	7/10/95	10	U	10	U	10	U	11		10	U	-		-		-	
	4/10/96	10	U	10	U	10	U	9	J	1	J	4	J	-		-	
	4/8/97	10	U	10	U	10	U	4	J	10	U	4	J	-		-	
	1/15/98	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	6/23/98	10	UJ	10	UJ	10	UJ	5	J	10	UJ	10	UJ	-		-	
	1/12/99	10	U	10	U	10	U	6	J	10	U	10	U	-		-	
	7/12/99	10	U	17	U	10	U	2	J	10	U	10	U	-		-	
	2/1/00	10	U	10	U	10	U	3	J	10	U	10	UJ	-		-	
	8/8/00	10	U	10	U	10	U	4	J	10	U	10	U	-		-	
	2/12-14/01	10	U	10	U	10	U	2	J	10	U	10	U	-		-	
	8/7-8/01	10	U	10	U	10	U	2	J	10	U	10	U	-		-	
	2/11-14/02	10	U	10	U	10	U	3	J	10	U	10	U	-		-	
	8/12-14/02	DRY		10	U	10	U	2	J	DRY		10	U	-		-	
	1/21-22/03	10	U	10	U	10	U	2	J	10	U	10	U	-		-	
	7/14-15/03	10	U	10	U	10	U	1	J	10	U	10	U	-		-	
	3/16-17/04	10	U	10	U	10	U	2	J	10	U	10	U	-		-	
	9/29-30/04	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	3/30-31/05	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	10/3-4/05	10	U	10	U	10	U	10	U	10	U	10	U	-		-	

Watauga County, North Carolina
Upgradient Well: MW-1
12/12/05

Table 5C
Background Assessment Organic Target Parameter Analytical Results
Surface Water Sampling Locations
Results ug/l(ppb)

Parameter	Event	S1		S2		S3		S4		S5		S6		L1		Mt. Spring	
Trichloroethene	6/20/94	10	U	1	J	10	U	13		10	U	-		-		-	
	9/27/94	-		-		-		-		-		-		10	U	10	U
WQS = 92.4 ug/l	2/06/95	10	U	10	U	10	U	8	J	10	U	-		10	U	-	
	4/11/95	-		-		-		-		-		-		-		-	
	7/10/95	10	U	1	J	10	U	8	J	10	U	-		-		-	
	4/10/96	10	U	1	J	10	U	6	J	1	J	3	J	-		-	
	4/8/97	10	U	1	J	10	U	3	J	10	U	3	J	-		-	
	1/15/98	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	6/23/98	10	UJ	10	UJ	10	UJ	3	J	10	UJ	10	UJ	-		-	
	1/12/99	10	U	10	U	10	U	4	J	10	U	10	U	-		-	
	7/12/99	10	U	17	U	10	U	1	J	10	U	10	U	-		-	
	2/1/00	10	U	10	U	10	U	3	J	10	U	10	UJ	-		-	
	8/8/00	10	U	10	U	10	U	3	JB	10	U	10	UJ	-		-	
	2/12-14/01	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	8/7-8/01	10	U	10	U	10	U	2	J	10	U	10	U	-		-	
	2/11-14/02	10	U	10	U	10	U	2	J	10	U	10	U	-		-	
	8/12-14/02	DRY		10	U	10	U	10	U	DRY		10	U	-		-	
	1/21-22/03	10	U	0.5	J	10	U	2	J	10	U	10	U	-		-	
	7/14-15/03	10	U	10	U	10	U	1	J	10	U	10	U	-		-	
	3/16-17/04	10	U	10	U	10	U	2	J	10	U	10	U	-		-	
	9/29-30/04	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	3/30-31/05	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	10/3-4/05	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
1,1,1-Trichloroethane	6/20/94	10	U	2	J	10	U	3	J	10	U	-		-		-	
	9/27/94	-		-		-		-		-		-		10	U	10	U
WQS = 555 ug/l	2/06/95	10	U	10	U	10	U	2	J	10	U	-		10	U	-	
	4/11/95	-		-		-		-		-		-		-		-	
	7/10/95	10	U	1	J	10	U	2	J	10	U	-		-		-	
	4/10/96	10	U	10	U	10	U	2	J	2	J	1	J	-		-	
	4/8/97	10	U	10	U	10	U	10	U	10	U	1	J	-		-	
	1/15/98	10	U	10	U	10	U	10	U	2	J	10	U	-		-	
	6/23/98	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	-		-	
	1/12/99	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	7/12/99	10	U	17	U	10	U	10	U	10	U	10	U	-		-	
	2/1/00	10	U	10	U	10	U	10	U	3	J	10	UJ	-		-	
	8/8/00	10	U	10	U	10	U	10	U	10	U	10	UJ	-		-	
	2/12-14/01	10	U	10	U	10	U	3	J	3	J	10	U	-		-	
	8/7-8/01	10	U	10	U	10	U	10	U	10	U	10	UJ	-		-	
	2/11-14/02	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	8/12-14/02	DRY		10	U	10	U	10	U	DRY		10	U	-		-	
	1/21-22/03	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	7/14-15/03	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	3/16-17/04	10	U	10	U	10	U	10	U	5	J	10	U	-		-	
	9/29-30/04	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	3/30-31/05	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	10/3-4/05	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
Vinyl Chloride	6/20/94	10	U	10	U	10	U	10	U	10	U	-		-		-	
	9/27/94	-		-		-		-		-		-		10	U	10	U
WQS = 525 ug/l	2/06/95	10	U	10	U	10	U	2	J	10	U	-		10	U	-	
	4/11/95	-		-		-		-		-		-		-		-	
	7/10/95	10	U	10	U	10	U	3	J	10	U	-		-		-	
	4/10/96	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	4/8/97	10	U	2	J	10	U	10	U	10	U	10	U	-		-	
	1/15/98	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	6/23/98	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	-		-	
	1/12/99	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	7/12/99	10	U	17	U	10	U	10	U	10	U	10	U	-		-	
	2/1/00	10	U	10	U	10	U	10	U	10	UJ	10	UJ	-		-	
	8/8/00	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	2/12-14/01	10	U	10	U	10	U	10	U	4	J	10	U	-		-	
	8/7-8/01	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	2/11-14/02	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	8/12-14/02	DRY		10	U	10	U	10	U	DRY		10	U	-		-	
	1/21-22/03	10	U	0.9	J	10	U	10	U	10	U	10	U	-		-	
	7/14-15/03	10	U	1	J	10	U	10	U	10	U	10	U	-		-	
	3/16-17/04	10	U	10	U	10	U	10	U	10	U	10	U	-		-	
	9/29-30/04	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	3/30-31/05	10	U	10	U	10	U	10	U	10	U	DRY		-		-	
	10/3-4/05	10	U	10	U	10	U	10	U	10	U	10	U	-		-	

TABLE 5B NOTES:

U Denotes not detected (the associated numerical value is the CRQL).

J Denotes an estimated value

CRQL Contract Required Quantification Limit (CLP Methods)

- Denotes Not Avaliable or Not Sampled

WQS Denotes North Carolina Surface Water Quality Standard (T15A: 02B .0200)

Shading Denotes results that exceed North Carolina Surface Water Quality Standard.

ANALYSIS TYPE:

1) Organic parameters were analyzed utilizing CLP Statement of Work OLMO3.2.

2) For CLP analyses, 1,2-Dichloroethene is reported as total concentration.

Watauga County Landfill

Watauga County, North Carolina

Upgradient Well: MW-1

05/26/06

Table 6

Cumulative Detected Non-Target Organic Parameter Analytical Results

Contract Laboratory Program (CLP) Statement of Work (SOW) - Organics

Parameter	Event	Results ug/L(ppb)																																						NCS (ug/L)	MCL (ug/L)
		MW-1		MW-2		MW-3		MW-4		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-13		MW-14		MW-16		MW-17		MW-18		S1		S2		S3		S5		Method		
Acetone	6/20/94	61																																				CLP	700	-
	9/27/94																	40	J																			CLP	700	-
	4/11/95											15	J																									CLP	700	-
	4/8/97																																					CLP	700	-
	10/3-4/05			190	J																															9	J	CLP	700	-
Bromomethane	2/6/95											5.8																										8260B	700	-
	7/10/95					2.4	J																															8021	-	-
2-Butanone	9/27/94											19																										8260	-	-
	7/10/95											15		4.9	J			31	J																			CLP	4200	-
	4/8/97																																	5	J			8021/CLP	4200	-
t-bb+tmb+s-bb	6/20/94											44.97	J	8.91	J							0.83												3	J			CLP	4200	-
2-Butyne	2/11-14/02											0.81	NJ																									8021	70	-
Carbon Tetrachloride	4/11/95							2	J													1	J											1	J			8260B	-	-
Chlorodifluoromethane	8/7-8/01													5	NJ													2	J									CLP	0.269	5
Chloroform	2/11-14/02					3.55	NJ					2.67	NJ			1.88	NJ			2.91	NJ							0.58	NJ									CLP	-	-
Chloromethene	10/3-4/05																					0.95	J															8260B	-	-
Chlorofluoromethane	10/3-4/05															0.21	J																					8260B	70	-
	6/24/98															10	NJ																					8260B	2.6	-
	8/7-8/01													8	NJ																							CLP	-	-
	2/11-14/02					2.67	NJ					1.51	NJ	0.86	NJ	2.11	NJ			2.85	NJ	1.74	NJ															CLP	-	-
Dibromochloromethane	2/6/95																									0.6	J											8260B	-	-
Dichlorofluoromethane	1/15/98					14	NJ							9	NJ	22	NJ					9	NJ															8021	-	80
	6/24/98													12	NJ	29	NJ											10	NJ									CLP	-	-
	7/12-13/99					8	NJ							6	NJ	5	NJ											14	NJ									CLP	-	-
	8/8-9/0					15	NJ							6	NJ	5	NJ					10	NJ					7	NJ					10	NJ			CLP	-	-
	87-/8/01															6	NJ											5	NJ									CLP	-	-
	2/11-14/02					4.69	NJ					0.52	NJ	0.79	NJ	2.90	NJ			3.56	NJ	4.98	NJ					8	NJ									CLP	-	-
	1/21-22/03																					6	NJ					3.88	NJ									8260B	-	-
1,2-Dichloropropene	1/15/98																											7	NJ									CLP	-	-
1,3-Dimethylbenzene	8/7-8/01																																	1	J			CLP	-	-
Ethanol	2/11-14/02																																					CLP	-	-
Ether	1/15/98																					1.88	NJ													8	NJ	8260B	-	-
	6/24/98													12	NJ	6	NJ																	7	NJ			CLP	-	-
	1/12/99																											10	NJ					7	NJ			CLP	-	-
	7/12-13/99					18	NJ							12	NJ	22	NJ																	7	NJ			CLP	-	-
	2/1-3/00																											12	NJ					14	NJ			CLP	-	-
	8/8-9/0					10	NJ							6	NJ	5	NJ					5	NJ											5	NJ			CLP	-	-
	87-/8/01													7	NJ							6	NJ					10	NJ					5	NJ			CLP	-	-
	2/11-14/02					9.64	NJ					5.40	NJ	1.33	NJ	1.94				3.27	NJ	7.02	NJ					6.16	NJ							6	NJ	8260B	-	-
	1/21-22/03																					11	NJ					7	NJ					7	NJ			CLP	-	-
	3/16-17/04					13	NJ							5	NJ																							CLP	-	-
Ethylbenzene	6/20/94	10																																6				CLP	550	700
	7/10/95																																	3	J			CLP	550	700
	4/8/97																																	2	J			CLP	550	700
	1/15/98																																	2	J			CLP	550	700
	8/8/00																																	8	NJ			CLP	550	700
	87-/8/01																																			8	NJ	CLP	550	700
	87-/8/01																																	7	NJ			CLP	550	700
Hexane	4/11/95																											7	NJ									CLP	-	-
2-Methyl-2-pentanone	6/20/94	24																																6				CLP	-	-
Napthylene	6/20/94											0.33	J			0.69	J					0.74	J	7.07	J			0.62	J									8021	21	-
Octamethcyclotetrasiloxan	3/16-17/04															0.50	J					0.33	J					0.66	J							14	NJ	7	NJ	CLP	-	-
n-Propylbenzene	6/20/94															0.94	J					0.65	J															8021	70	-
Styrene	6/20/94																																					CLP	-	-
1,1,2,2-Tetrachloroethan	6/20/94	2	J																																			8260B	-	-
Tetrahydrofuran	2/11-14/02																					0.32	J	0.47	J			0.68	NJ									8021	-	-
1,2,3-Trichlorobenzene	6/20/94																																					CLP	-	-
1,1,2-Trichloro-1,2-ethan	8/8-9/00																																					8021	-	-

Watauga County Landfill
Watauga County, North Carolina
Upgradient Well: MW-1
05/26/06

Table 6
Cumulative Detected Non-Target Organic Parameter Analytical Results
Contract Laboratory Program (CLP) Statement of Work (SOW) - Organics

Parameter	Event	Results ug/L(ppb) MW-1	MW-2	MW-3	MW-4	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-16	MW-17	MW-18	S1	S2	S3	S5	Method	NCS (ug/L)	MCL (ug/L)
Trichlorofluoromethane	6/20/94			1.1 J					20.50 J													8021	2100	-
	4/11/95			1.02					200 NJ													CLP	2100	-
	7/10/95			0.15 J																		8260	2100	-
	4/8/97								1.38			1.29										8021	2100	-
	10/3-4/05																					8260B	2100	-
1,3,5-Trimethylbenzene	6/20/94								0.17 J													8021	350	-
Trimethylsilanol	1/15/98			7 NJ																		CLP	-	-
Toluene	6/20/94	2 J																	7			CLP	1000	1000
	4/11/95				2 J							1 J				4 J						CLP	1000	1000
	7/10/95																		2 J			CLP	1000	1000
	4/8/97																		2 J			CLP	1000	1000
	1/15/98																		2 J			CLP	1000	1000
Xylene (total)	6/20/94	64																	20			CLP	530	#####
	9/27/94						1 J		3 J													CLP	530	#####
	4/11/95								3 J													CLP	530	#####
	7/10/95																	1 J	6 J		2 J	CLP	530	#####
	4/8/97																		6 J			CLP	530	#####
	1/15/98																		6 J			CLP	530	#####
	8/8/00																		8 NJ			CLP	530	#####
o-Xylene	6/20/94						0.83 J															8021	530	#####
	2/6/95						0.6															8021	530	#####
	7/10/95								3.0 J													8260	530	#####
p-xylene	2/11-14/02																		9 NJ			8260B	530	#####
	4/11/95										6 NJ											CLP		
3 Unknown Alkanes	4/11/95										9 NJ											CLP		
	4/11/95										6 NJ											CLP		
2 Unknown Cycloalkanes	4/11/95										12 NJ											CLP		
	4/11/95										28 NJ											CLP		
	4/11/95										10 NJ				10 NJ	7 NJ	7 NJ					CLP		
4 Unknown Hydrocarbons	4/11/95										5 NJ				7 NJ	37 NJ						CLP		
	4/11/95										13 NJ				18 NJ	9 NJ						CLP		
	4/11/95														9 NJ							CLP		
2 Unknown Unsaturated Hydrocarbons	4/11/95										7 NJ											CLP		
	4/11/95						50 NJ				8 NJ											CLP		

former non-target parameter results (current analytical results listed on Table 2A)

Chloroethene	2/11-14/02											1.28 NJ										8260B	860	-
1,4-Dichlorobenzene	7/10/95							1.1 J														8260	1.4	75
	4/8/97						2.6															8021	1.4	75
	1/12/99			2.2																		8021B	1.4	75
trans-1,2-Dichloroethene	6/20/94						1.53 J	2.03 J				1.47 J				1.31						8021	100	100
	2/6/95						2.6															8021	100	100
	7/10/95			1.6 J		5.7	1.6 J	1.4 J														8260	100	100
	1/123/99						2.2															8021B	100	100
	2/1-3/00			0.86 J												0.31 J						8021B	100	100
	8/8-9/00			1 J																		CLP	100	100
1,2,-Dichloroethane	7/10/95			1.8 J												1.8 J						8260	0.38	-
	7/10/95			1.8 J				0.89 J								1.7 J						8021	0.38	-
	4/8/97			1.52				0.89 J				1.09				1.76			1 J			8021/CL	0.38	-
	1/12/99			2.6																		8021B	0.38	-
1,2-Dichloropropane	2/6/95			1 J	1 J			1 J								1 J						CLP	0.51	5
	2/6/95						1.6 J															8021	0.51	5
	4/11/95							1 J								2 J						CLP	0.51	5
	7/10/95			1 J		1 J	1.6 J									0.80						8260	0.51	5
	7/10/95						1.4 J	0.87 J														8021	0.51	5
	4/8/97			0.689 J			1.4 J	0.87 J				0.66 J				0.97 J						8260	0.51	5
	4/8/97						2.2															8021	0.51	5

Notes:
NCS Denotes North Carolina Groundwater Quality Standard (T15A: 02L .0200).
MCL Denotes EPA Maximum Contaminant Level (EPA 822-R-94-001).
J Denotes an estimated value.
N Denotes tentatively identified.
CLP Denotes parameters were analyzed in accordance with USEPA CLP SOW OLM03.2.
8260B Denotes parameters were analyzed via EPA SW-846 Method 8260B, 25 ml purge.
t-bb+tmb+s-bb: tert-Butylbenzene + 1,2,4-Trimethylbenzene + sec-Butylbenzene

P:\06\500\06520\06520-39\Reports\2005 tables\[XLS - 05 1213 - NCDENR - TABLE6 - JES.xls]TABLE6A

Watauga County Landfill

Watauga County, North Carolina

Upgradient Well: MW-1

Table 7
Indicator Parameter Results
2000-2003

05/26/06

Parameters	Event	Results																	
		MW-1	MW-2	MW-3	MW-4	MW-5	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-17	MW-18	MW-19	LOQ/RL
Dissolved Oxygen (mg/l)	2/1-3/00	7.17	1.58	1.93	-	-	3.10	3.11	5.37	2.59	1.58	2.10	-	-	3.20	1.81	-	5.27	-
	8/8-9/00	-	1.38	2.20	-	-	-	2.18	4.05	-	-	0.03	-	-	-	0.01	-	-	-
	2/12-14/01	6.31	0.34	0.36	6.42	2.5	1.66	0.43	0.76	2.71	0.48	0.19	7.31	5.57	1.72	0.34	5.86	1.98	-
	8/7-8/01	-	2.70	0.22	-	-	-	0.50	0.35	-	-	0.24	-	-	-	0.47	-	-	-
	2/11-14/02	5.76	1.90	1.93	5.39	2.22	2.38	1.52	1.63	3.00	1.10	1.33	5.78	5.01	2.30	2.03	4.90	1.78	-
	8/12-14/02	6.56	1.87	1.59	6.81	2.20	3.97	1.4	1.73	4.60	1.45	1.54	6.18	5.9	3.50	3.00	6.25	1.50	
	1/21-22/03	-	1.91	1.79	-	-	-	-	1.89	-	-	1.93	-	-	-	2.75	-	-	-
Oxidation Reduction Potential ORP (mV)	2/1-3/00	47.5	8.1	66.3	-	-	83.2	2.6	29.9	53.4	103.9	69.1	-	-	60.2	82.2	-	43.4	-
	8/8-9/00	-	38.1	92.2	-	-	-	32.8	48.4	-	-	54.1	-	-	-	24.8	-	-	-
	8/7-8/01	-	30	98.7	-	-	-	46.8	33.7	-	-	112.2	-	-	-	84.7	-	-	-
	2/11-14/02	158	82	148	149	177	-71	31	-9	12	85	112	240	228	139	100	223	-175	-
	8/12-14/02	117	63	63	165	129	33	-0.36	535	90	143	63	198	163	25	46	81	-161	
	1/21-22/03	-	61	132	-	-	-	-	53	-	-	124	-	-	-	55	-	-	-
Total Residual Chlorine (mg/l)	2/1-3/00	0.00	0.10	0.30	-	-	-	0.42	0.00	0.10	0.00	0.02	-	-	0.00	0.38	-	0.24	-
	8/8-9/00	-	0.02	0.21	-	-	-	0.12	0.02	-	-	0.03	-	-	-	0.01	-	-	-
	2/12-14/01	0.00	0.00	0.05	0.00	0.32	0.03	0.18	0.00	0.14	0.05	0.04	0.05	0.00	0.07	0.03	0.00	0.02	-
	8/12-14/02	0.02	0.00	0.07	0.03	0.11	0.02	0.60	0.01	0.12	0.02	0.03	0.08	0.02	0.01	0.02	0.05	0.04	
	2/11-14/02	0.10	0.08	0.00	0.06	0.12	0.01	0.13	0.02	0.08	0.00	0.07	0.10	0.00	0.00	0.03	0.08	0.02	-
pH	2/1-3/00	5.69	7.45	5.53	-	-	6.61	6.37	6.04	6.99	5.66	6.99	-	-	7.40	5.89	-	6.43	-
	8/8-9/00	-	7.05	5.72	-	-	-	6.6	5.23	-	-	4.91	-	-	-	6.07	-	-	-
	2/12-14/01	6.02	7.76	5.85	5.92	5.96	6.72	6.53	6.12	6.67	5.79	6.61	5.54	6.59	7.70	5.90	6.42	6.23	-
	8/7-8/01	-	7.73	5.96	-	-	-	6.86	6.14	-	-	5.98	-	-	-	5.92	-	-	-
	2/11-14/02	6.00	7.68	5.89	6.24	6.18	6.68	6.90	6.03	7.25	5.87	6.14	5.40	6.69	7.78	5.92	6.62	6.23	-
	8/12-14/02	5.86	7.87	5.84	6.26	6.30	6.84	6.90	5.75	7.20	5.78	6.27	5.46	6.88	7.57	5.98	6.55	7.38	
	1/21-22/03	-	7.85	6.09	-	-	-	-	6.31	-	-	6.19	-	-	-	6.07	-	-	-
Conductivity (uS)	2/1-3/00	96.4	287	328	-	-	924	979	394	192	211	352	-	-	179	302	-	84.7	-
	2/12-14/01	113	321	461	56	242	917	1168	533	122.4	295	454	109.6	97.0	172.7	402	105.6	104.5	-
	8/7-8/01	-	207	171	-	-	-	778	313	-	-	302	-	-	-	288	-	-	-
	2/11-14/02	98.5	279	341	47.4	221	823	956	357	128	290	296	135	74.8	138	354	79.5	77.9	-
	1/21-22/03	-	278	307	-	-	-	-	329	-	-	441	-	-	-	4	-	-	-
Alkalinity (mg/l)	8/8-9/00	-	102	88	-	-	-	286	210	-	-	139	-	-	-	122	-	-	10
	2/12-14/01	34	99	111	18	99	444	286	208	54	58	122	ND	36	67	96	24	29	10
	8/7-8/01	-	100	66	-	-	-	300	170	-	-	130	-	-	-	96	-	-	10
	2/11-14/02	34	100	90	22	97	418	133	160	72	69	137	ND	37	65	95	24	22	10
Nitrate (mg/l)	8/8-9/00	-	0.153	-	-	-	-	-	ND	-	-	ND	-	-	-	-	-	-	0.05
	8/7-8/01	-	0.85	0.056	-	-	-	ND	ND	-	-	ND	-	-	-	ND	-	-	0.05
	2/11-14/02	2.04	ND	0.134	ND	0.677	ND	0.150	ND	ND	ND	ND	9.51	ND	ND	ND	1.65	1.46	0.05
Total Iron (mg/l)	2/11-14/02	1.360	ND	0.823	ND	17.8	13.3	3.09	0.251	0.304	ND	ND	0.179	ND	0.398	ND	ND	0.877	0.100
Iron 3+ (mg/l)	2/11-14/02	ND	ND	ND	ND	ND	1.84	ND	0.101	ND	ND	ND	ND	ND	ND	0.193	ND	ND	0.100
Sulfate (mg/l)	8/8-9/00	-	7.39	6.03	-	-	-	17.9	ND	-	-	5.58	-	-	-	5.58	-	-	5
	2/12-14/01	ND	6.09	8.3	ND	ND	23.7	20.5	ND	5.74	ND	5.85	ND	ND	ND	5.04	ND	ND	5
	8/7-8/01	-	5.17	5.63	-	-	-	10.3	ND	-	-	5.29	-	-	-	ND	-	-	5
	2/11-14/02	ND	5.59	7.78	ND	ND	35.9	8.69	ND	6.64	ND	6.4	ND	ND	ND	5.49	ND	ND	5
Sulfide (mg/l)	8/8-9/00	-	ND	ND	-	-	-	ND	ND	-	-	ND	-	-	-	ND	-	-	0.5
	2/12-14/01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5
	8/7-8/01	-	ND	ND	-	-	-	ND	ND	-	-	ND	-	-	-	ND	-	-	0.5
	2/11-14/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5
Total Organic Carbon (mg/l)	8/8-9/00	-	21.7	79.9	-	-	-	86.1	132	-	-	63.9	-	-	-	74.6	-	-	5
	2/12-14/01	28.1	28.6	110	17.4	60.3	66.4	113	146	18.1	67.5	68	13.2	15.8	19.2	99.3	12.1	14	1
	8/7-8/01	-	7.6	ND	-	-	-	5.1	ND	-	-	ND	-	-	-	ND	-	-	5
	2/11-14/02	ND	ND	ND	ND	7.253	40.6	6.626	6.586	ND	ND	ND	ND	ND	ND	17.3	ND	ND	5
Methane (ug/l)	8/8-9/00	-	ND	2400	-	-	-	1770	4170	-	-	1900	-	-	-	498	-	-	26
	2/12-14/01	ND	ND	2510	ND	ND	14800	602	3480	ND	1120	2300	ND	ND	ND	2790	ND	ND	26
	8/7-8/01	-	ND	676	-	-	-	1760	2510	-	-	2630	-	-	-	2890	-	-	26
	2/11-14/02	ND	ND	1.620	ND	ND	4.060	0.159	1.730	ND	1.370	1.830	ND	ND	ND	2.120	ND	0.052	0.026

Notes: pH, conductivity, ORP and temperature measured in the field with a Myron 6P ultrameter.

total residual chlorine measured in the field with Hach colorimetric meter.

dissolved oxygen measured in the field with YSI 55 DO meter.

alkalinity measured in the laboratory via EPA method 310.1.

sulfate measured in the laboratory via EPA SW-846 method 9038.

sulfide measured in the laboratory via EPA method 376.1.

total organic carbon measured in the laboratory via EPA SW-846 method 9060 modified.

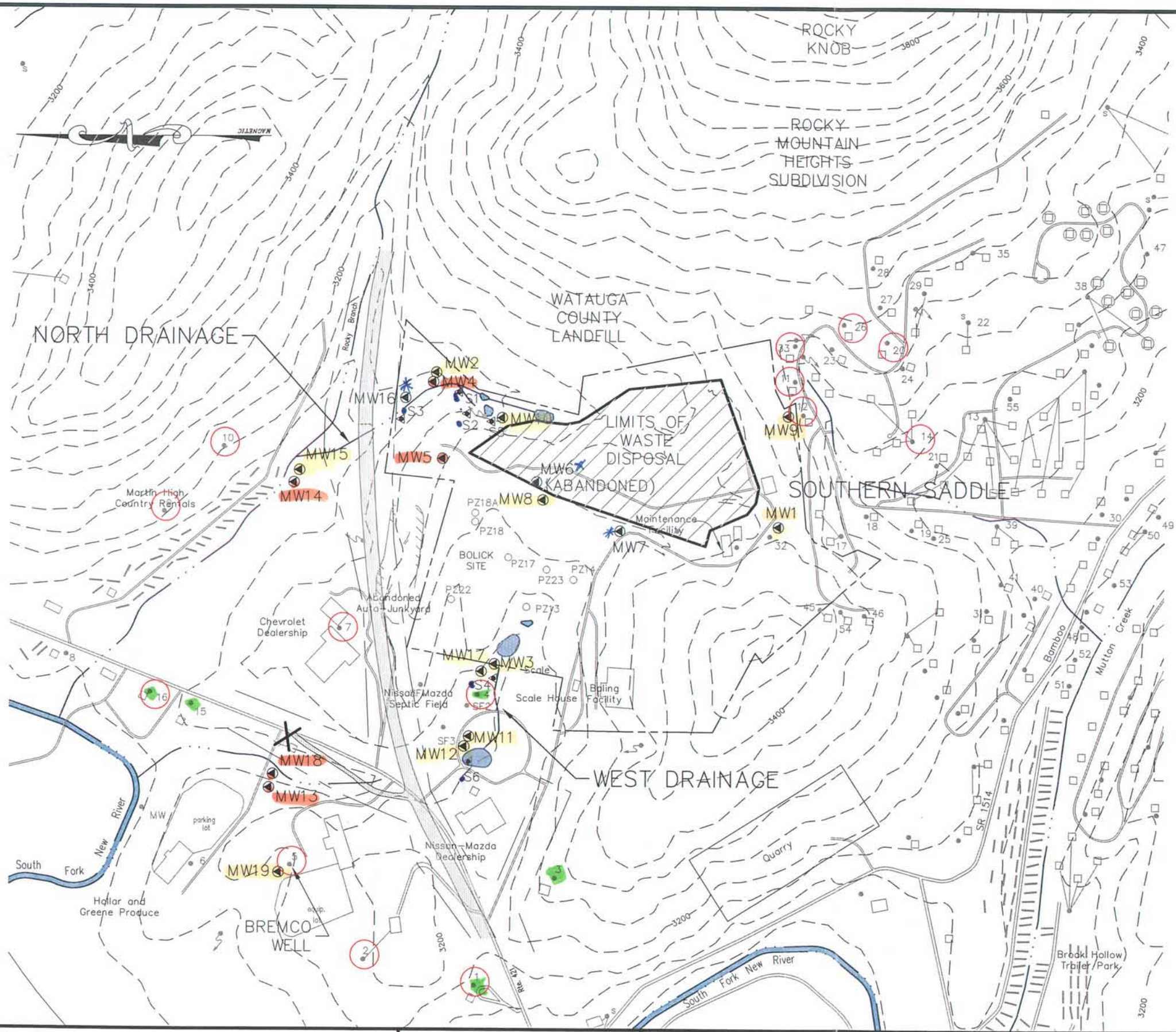
methane measured in the laboratory via GC method RSK175 modified.

total iron analyzed in accordance with EPA SW-826 Method 6010B.

ferric iron (Fe 3+) analyzed in accordance with SM Method 3500 - Fe D

ND denotes not detected above reporting limit.

NA denotes not available.



LEGEND

- MW2 — ASSESSMENT MONITORING WELL
- S3 — ASSESSMENT MONITORING WELL
- F1 — SEPTIC FIELD MONITORING WELL
- SPRING
- GAS MONITORING PROBE
- EXISTING RESIDENCE/MULTI-UNIT RESIDENCE
- EXISTING MOBILE HOME
- SPRING USED AS POTABLE WATER SOURCE
- 31 — EXISTING POTABLE WELL/SAMPLED WELL REF. NO.
- 26 — WELLS REPLACED WITH PUBLIC WATER
- EXISTING GROUND
- STREAM
- POND
- RT. 421 IMPROVEMENTS
- RT. 421 RIGHT-OF-WAY

NOTE: ALL ELEVATIONS IN FEET ABOVE SEA LEVEL.

GRAPHIC SCALE

500 0 250 500 1000

(IN FEET)

1 inch = 500 ft.

Draper Aden Associates
Engineering • Surveying • Environmental Services
2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291
Richmond, VA
Charlottesville, VA
Hampton Roads, VA

DESIGNED	JES
DRAWN	DRW
CHECKED	MDL
DATE	04/13/2005

SITE MAP

WATAUGA COUNTY LANDFILL

WATAUGA COUNTY, NORTH CAROLINA

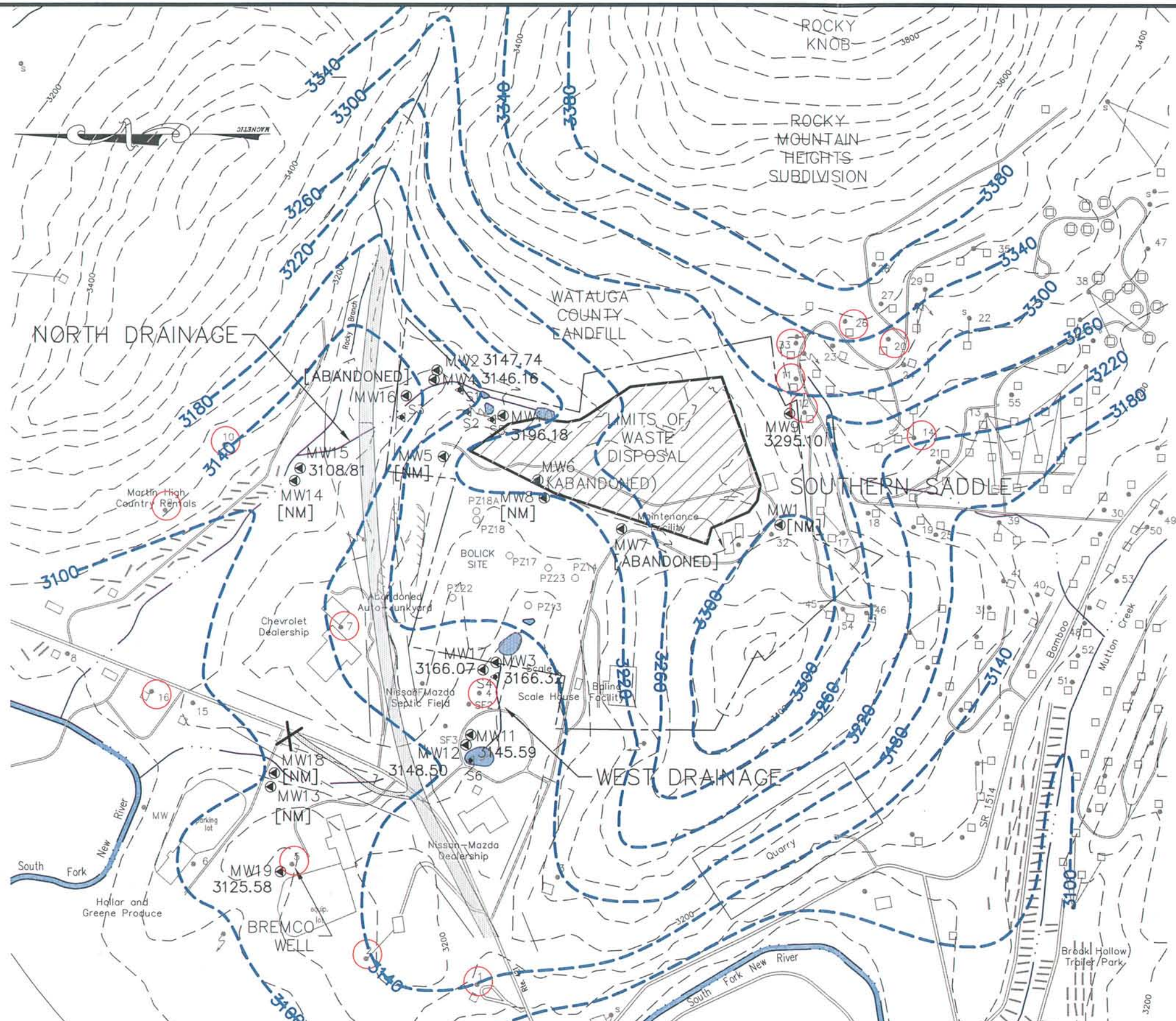
mw's { Core: Boundary: P. wells

SCALE: 1" =500'±

PLAN NO. 6520-39

FIGURE 1

P:\06\50\06520\06520-39\Cad\520-39\dwg\20056520-39_FIG 1-2_2005.dwg May 26, 2006 1:10pm



LEGEND

- MW2 — ASSESSMENT MONITORING WELL
- S3 — ASSESSMENT MONITORING WELL
- F1 — SEPTIC FIELD MONITORING WELL
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- 26 — WELLS REPLACED WITH PUBLIC WATER
- EXISTING GROUND
- STREAM
- POND
- RT. 421 IMPROVEMENTS
- RT. 421 RIGHT-OF-WAY
- 3100 — GROUNDWATER POTENTIOMETRIC ELEVATION (INFERRED FROM STATIC WATER LEVEL DATA OBTAINED ON APRIL 4, 2006) CONTOUR INTERVAL 40'

NOTE: ALL ELEVATIONS IN FEET ABOVE SEA LEVEL.

GRAPHIC SCALE

500 0 250 500 1000

(IN FEET)

1 inch = 500 ft.

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Charlottesville, VA
Hampton Roads, VA

DESIGNED	JES
DRAWN	JGL
CHECKED	MDL
DATE	05/03/2006

GROUNDWATER AND SURFACE WATER MONITORING PROGRAM MAP

WATAUGA COUNTY LANDFILL

WATAUGA COUNTY, NORTH CAROLINA

SCALE: 1" =500'±

PLAN NO. 6520-39

FIGURE 2

P:\06500\06520\06520-39\Cad\6520-39dwg\2005\6520-39_FIG 1-2_2005.dwg May 26, 2006 12:27pm

APPENDIX B

FIELD NOTES

10/5/05 Watauga Co. LF FB #2

6520-39

CNB/DWK

RES-15

Sample Collection Time: (12:45)

Samples Collected: 524.2(2)

RES-16

Sample Collection Time: (13:00)

Samples Collected: 524.2(2)

RES-1

Sample Collection Time: (13:10)

Samples Collected: 524.2(2)

RES-21

Sample Collection Time: (13:20)

Samples Collected: 524.2(2)

04/08/06 Watauga Co. LF FB #2

6520-39

CSB/CWP

1st Semiannual Event

(11:20) Arrive on-site

General Notes

- Weather - Sunny, 40's
- PPE - Eye Protection, Nitrile Gloves
- Used YSI 650 MDS to measure field parameters
- Calibrations: pH - 7.00 = 7.00
  4.00 = 3.99
  10.00 = 10.00
  Conductivity reads 1413 µS in 1413 µS std
  DO meter reads 100 %

Static Water Levels

Well	DTW	Notes
mw-1	—	Casing broken - being repaired
mw-2	5.20'	—
mw-3	16.80'	—
mw-8	—	Casing Bent - unable to measure SW
mw-9	64.13'	—
mw-10	7.69'	—
mw-11	14.01'	—
mw-12	10.65'	—
mw-15	11.84'	—
mw-17	17.55'	—
mw-19	14.42	—
mw-41	6.36'	—
Bremco	12.53'	no well cap

6520-39
CJB/CNB

MW-2

TD: 177.50'
DTW: 5.20'
172.30' x 0.65 = 112 gallons
Begin Purge: (12:06)
Initial Purge: Clear

Time	Temp(°C)	Cond(µs)	pH	ORP(mV)	Purge(K	Vol	Desc D.O%
(12:07)	11.34	301	7.54	113.1	3GPM	3gal	Clear 22.1
(12:20)	11.73	305	7.72	100.8	3GPM	40 gal	Clear 13.6
(12:33)	11.84	305	7.74	89.3	3GPM	80gal	Clear 11.0
(12:45)	11.96	302	7.74	45.3	3GPM	112gal	Clear 7.8
(12:45)	Well purged at ≈ 112 gallons						

S-3

Sample Collection Time: (12:25)
Samples Collected: (3) CLP OLMO 4.3

S-1

Sample Collection Time: (13:00)
Samples Collected: (3) CLP OLMO 4.3

S-2

Sample Collection Time: (12:50)
Samples Collected: (3) CLP OLMO 4.3

S-5

Sample Collection Time: (12:55)
Samples Collected: (3) CLP OLMO 4.3

6520-39
CJB/CNB

MW-8

TD: 67.00'
DTW: Beaulieu Casing - Unable to measure
Begin Purge: (13:41)
Initial Purge: Cloudy

Time	Temp(°C)	Cond(µs)	DO%	pH	ORP(mV)	Purge(GPM)	Vol(gal)	Desc.
(13:42)	12.98	124	12.5	7.13	3.5	1GPM	1Gal	Clear
(13:47)	13.81	122	15.5	6.84	0.0	1GPM	6gal	Cloudy
~~(13:52)~~						~~1GPM~~	~~11gal~~	CNB
~~(13:57)~~						~~1GPM~~	~~16gal~~	9.4 DO
(13:47)	Well purged dry at ≈ 6.0 gallons. Allowed to recharge overnight							

MW-9

TD: 86.40'
DTW: 64.13
22.27 x 0.163 = 3.63 x 3 = 10.89
Begin Purge: (14:14)
Initial Purge: Clear

Time	Temp(°C)	Cond(µs)	D.O.%	pH	ORP(mV)	Purge(K	Vol	D
(14:15)	12.87	326	10.1	5.87	89.8	1GPM	1gal	C
(14:18)	13.25	320	5.8	5.85	97.3	1GPM	4gal	C
(14:21)	13.34	333	4.7	5.84	98.7	1GPM	7gal	C
~~(14:25)~~						~~1GPM~~	~~11gal~~	
(14:22)	Well purged dry @ ≈ 8 gallons. Allowed to recharge overnight							

MW-3 (MS/MSD)

TD: 39.60'
DTW: 16.80
22.80 x 0.163 = 3.72 x 3 = 11.15 gallons
Begin Purge: (14:41)
Initial Purge: Clear

6520-39
CJB/CUB

MW-3 Cont'd

Time	Temp(°C)	Cond(us)	D.O%	ORP(mV)	pH	Purge K	Vol	Desc
14:42	12.35	413	30.4	154.6	5.86	0.5gpm	0.5gal	Clear
14:49	12.78	411	3.9	186.6	5.85	0.5gpm	4gal	Clear
14:57	12.85	410	3.2	205.0	5.84	0.5gpm	8gal	Clear
15:05	12.91	409	3.0	212.1	5.84	0.5gpm	12gal	Clear
15:05	Well purged @ ≈ 12 gallons							

MW-17

TD: 94.54'

DTW: 17.55'

76.99 x 0.163 = 12.55 x 3 = 37.65 gallons

Begin Purge: (15:09)

Initial Purge: Clear

Time	Temp(°C)	Cond(us)	D.O%	ORP(mV)	pH	Purge K	Vol	Desc
15:10	12.40	194	41.2	147.6	6.02	2GPM	2gal	Clear
15:16	12.84	195	17.0	122.0	6.09	2GPM	14gal	Clear
15:22	13.03	235	6.7	92.9	6.16	2GPM	26gal	Clear
15:28	12.81	190	7.8	122.3	5.99	2GPM	38gal	Clear
15:28	Well purged dry @ 38 gallons. Allowed to recharge overnight							

S-4

Sample Collection Time: (14:55)

Sample Collected: CLP OMO 4.3

6520-39
CJB/CUB

MW-12

TD: 72.75'

DTW: 10.65

62.10 x 0.163 = 10.12 x 3 = 30.37 gallons

Begin Purge: (15:40)

Initial Purge: Clear

Time	Temp(°C)	Cond(us)	D.O%	pH	ORP(mV)	Purge K	Vol	Desc
15:41	11.74	502	12.0	6.00	168.9	2GPM	2gal	Clear
15:46	11.96	511	3.9	5.99	188.9	2GPM	11gal	Clear
15:51	12.00	508	3.6	5.99	202.6	2GPM	21gal	Clear
15:56	12.01	508	3.3	6.00	208.1	2GPM	31gal	Clear
15:56	Well purged @ ≈ 31 gallons							

S-6

Sample Collection Time: (15:05)

Samples Collected: CLP OMO 4.3

APPENDIX C

PREVIOUS LANDFILL GROUNDWATER ORGANIC ANALYSIS SUMMARY TABLE

ORGANIC CONSTITUENTS DETECTED

December 11, 1990, November 16-18, 1992 and March 3, 1993 SAMPLING EVENTS

Analyte	Date Sampled	Analytical Method	MDL	MW-1	MW-2	MW-3	MW-4	PZ-24	NCS	MCL	TRIP
Trichloroethene	December 11, 1990	SW846 Method 8240	5			9		---	2.8	5	
(TCE)	November 16-18, 1992	SW846 Method 8010	1			23		110	2.8	5	
	March 5, 1993	EPA Method 502.2	0.2	0.4	2.4	18.1	0.7		2.8	5	
	March 5, 1993	SW846 Method 8021	0.2		2.1	15.7	0.8	79.5	2.8	5	
1,1,1-Trichloroethane	December 11, 1990	SW846 Method 8240	5		394	102			200	200	
(1,1,1-TCA)	November 16-18, 1992	SW846 Method 8010	1		980	68	6		200	200	
	March 5, 1993	EPA Method 502.2	0.4		1646	19.0	10.5		200	200	
	March 5, 1993	SW846 Method 8021	0.4		1212	19.0	22.5	1.4	200	200	
Tetrachloroethene	December 11, 1990	SW846 Method 8240	5		7	25			0.7	5	
(PCE)	November 16-18, 1992	SW846 Method 8010	1		5	39		4	0.7	5	
	March 5, 1993	EPA Method 502.2	0.5	0.5	11.2		1.6		0.7	5	
	March 5, 1993	SW846 Method 8021	0.5		11.8	24.9	1.6	12.5	0.7	5	
1,1,-Dichloroethane	December 11, 1990	SW846 Method 8240	5		52	178			700[1]	---	
(1,1-DCA)	November 16-18, 1992	SW846 Method 8010	1		41	250		81	700[1]	---	
	March 5, 1993	EPA Method 502.2	0.7		96	173.3	1.2	77	700[1]	---	
	March 5, 1993	SW846 Method 8021	0.7		82	161	1.1	43.7	700[1]	---	
1,1-Dichloroethene	December 11, 1990	SW846 Method 8240	5		80	7			7	7	
(1,1-DCE)	November 16-18, 1992	SW846 Method 8010	1		110	14			7	7	
	March 5, 1993	EPA Method 502.2	0.7		232	10.3	5.1	0.9	7	7	
	March 5, 1993	SW846 Method 8021 and *(8240)	0.7 *(0.3)		143.6	9	4.5	*	7	7	
cis-1,2-Dichloroethene	March 5, 1993	EPA Method 502.2	0.7	0.7	1.4	36.4		225	70	70	
(cis-1,2-DCE)	March 5, 1993	SW846 Method 8021 and *(8240)	0.7 *(0.7)		1	26.6	*	87.8	70	70	

Note: All Concentrations are in ppb (ug/L) (other footnotes located on page 1)

ORGANIC CONSTITUENTS DETECTED
DECEMBER 11, 1990, NOVEMBER 16-18, 1992 AND MARCH 5, 1993 SAMPLING EVENTS

Analyte	Date Sampled	Analytical Method	MDL	MW-1	MW-2	MW-3	MW-4	PZ-24	NCS	MCL	TRIP
Methylene Chloride	December 11, 1990	SW846 Method 8240	5			23		---	5	5	
	November 16-18, 1992	SW846 Method 8010	1			16		15	5	5	
	March 5, 1993	EPA Method 502.2	0.6		4.2	9.4			5	5	
	March 5, 1993	SW846 Method 8021	0.6						5	5	
Vinyl Chloride	December 11, 1990	SW846 Method 8240	10					---	.015	2	
	November 16-18, 1992	SW846 Method 8010	1			3		12	.015	2	
	March 5, 1993	EPA Method 502.2	0.4			3.4		18.3	.015	2	2.6
	March 5, 1993	SW846 Method 8021 and *(8240)	0.4 *(1.0)			*		*	.015	2	
Dichlorodifluoromethane	December 11, 1990	SW846 8240	5			21		---	0.19	---	
	November 16-18, 1992	SW846 Method 8010	1						0.19	---	
	March 5, 1993	EPA Method 502.2	0.8			11.8		6.9	0.19	---	
	March 5, 1993	SW846 Method 8021 and *(8240)	0.8 *(0.8)			*			0.19	---	
Chloroethane	December 11, 1990	SW846 Method 8240	10					---	---	---	
	November 16-18, 1992	SW846 8010	1			5		8	---	---	
	March 5, 1993	EPA Method 502.2	1.4		2.6				---	---	
	March 5, 1993	SW846 method 8021 and *(8240)	1.4 *(10)			*		*	---	---	
Trans-1,3-Dichloropropene	December 11, 1990	SW846 Method 8240	5			9-J		---	70	100	
	November 16-18, 1992	SW846 Method 8010	1					3	70	100	
	March 5, 1993	EPA Method 502.2	0.7			0.9		5.5	70	100	
	March 5, 1993	SW846 Method 8021 and *(8240)	0.7 *(0.7)			*			70	100	

Note: All Concentrations are in ppb (ug/L) (other footnotes located on page 4)

LANDFILL GROUNDWATER
ORGANIC CONSTITUENTS DETECTED
DECEMBER 11, 1990, NOVEMBER 16-18, 1992 AND MARCH 5, 1993 SAMPLING EVENTS

Analyte	Date Sampled	Analytical Method	MDL	MW-1	MW-2	MW-3	MW-4	PZ-24	NCS	MCL	TRIP
Benzene	December 11, 1990	SW846 Method 8240	5					---	1.0	5	
	March 5, 1993	EPA Method 502.2	0.1			1.5	0.5	6.3	1.0	5	
	March 5, 1993	SW846 Method 8021	0.1			1.3		6.3	1.0	5	
1,4-Dichlorobenzene	November 15-18, 1992	SW846 Method 8010	0.3			0.5			0.19	75	
	March 5, 1993	EPA Method 502.2	0.5		0.8				1.8	75	
	March 5, 1993	SW846 Method 8021	0.5						1.8	75	
Chloroform	December 11, 1990	SW846 Method 8240	5					---	0.19	100	
	November 16-18, 1992	SW846 Method 8010	1				2	1	0.19	100	3
	March 5, 1993	EPA Method 502.2	0.3						0.19	100	
	March 5, 1993	SW846 Method 8021	0.3			0.5			0.19	100	
1,2-Dichloropropane	December 11, 1990	SW846 Method 8240	5					---	0.56	5	
	November 16-18, 1992	SW846 Method 8010	1						0.56	5	
	March 5, 1993	EPA Method 502.2	0.3		0.3	0.3			0.56	5	
	March 5, 1993	SW846 Method 8021 and *(8240)	0.3 *(0.3)			*	*	*	0.56	5	
2,2-Dichloropropane	March 5, 1993	EPA Method 502.2	0.7	0.7	1.4				---	---	
	March 5, 1993	SW846 Method 8021 and *(8240)	0.7 *(0.7)		*	*	*	*	---	---	
1,1-Dichloropropene	March 5, 1993	SW846 Method 8240	0.5	3.8					---	---	
Bis(2-ethylhexyl)phthalate	March 5,1993	SW846 Method 8270	2		20				---	---	
Xylenes, Total	March 5, 1993	SW846 Method 8021	0.4					1	0.4	10	
4,4'-DDD	March 5, 1993	SW846 Method 8080	0.1					0.1	---	---	

[illegible] GROUNDWATER
ORGANIC CONSTITUENTS DETECTED
DECEMBER 11, 1990, NOVEMBER 16-18, 1992 AND MARCH 5, 1993 SAMPLING EVENTS

Analyte	Date Sampled	Analytical Method	MDL	MW-1	MW-2	MW-3	MW-4	PZ-24	NCS	MCL	TRIP
Bromodichloromethane	December 11, 1990	SW846 Method 8240	5					---	---	100	
	November 16-18, 1992	SW846 Method 8010	1						---	100	
	March 5, 1993	EPA Method 502.2	0.3		0.6				---	100	
Carbon Tetrachloride	December 11, 1990	SW846 Method 8240	5					---	0.3	5	
	November 16-18, 1992	SW846 Method 8010	1						0.3	5	
	March 5, 1993	EPA Method 502.2	0.1			0.2	0.2	0.3	0.3	5	
	March 5, 1993	SW846 Method 8021	0.1						0.3	5	
	March 5, 1993	SW846 Method 8021	0.3						0.38	5	
1,2-Dichloroethane	December 11, 1990	SW846 Method 8240	5					---	0.38	5	
	November 16-18, 1992	SW846 Method 8010	1			1			0.38	5	
	March 5,1993	EPA Method 502.2	0.3		0.3				0.38	5	
	March 5, 1993	SW846 Method 8021 and *(8240)	0.3 *(0.3)		*	*		*	0.38	5	

EPA SW-846 Methods 8011, 8030, 8040, 8090, 8120, 8150, and 8310 were Also Performed on Samples Collected on March 5, 1993, Resulting in No Analytes Detected.

MDL Analytical Method Detection Limit
NCS North Carolina Water Quality Standard (DEHNR: 15A NCAC 2L .0202)
MCL EPA Primary Drinking Water Standard Maximum Contaminant Level

December 11, 1990 Sampling Event - Conducted by Engineering Tectonics and split-sampled with the NCDEHNR Solid Waste Section - Analysis performed by the North Carolina State Laboratory of Public Health.
November 16-18, 1993 and March 5, 1993 Sampling Event - Conducted by Draper Aden Associates - Analysis performed by Central Virginia Laboratories and Consultants, Inc (CVLC).
EPA Metho 502.2 Co-elutes compounds cis-1,2-Dichloroethene and 2,2-Dichloropropane

denotes estimated result
denotes proposed NCS
denotes *(method) utilized and analyte not detected

Table 5B

12/13/05

Watauga County, North Carolina

Background Assessment Organic Target Parameter Analytical Results

Upgradient Well: MW-1

Boundary Groundwater Monitoring Wells

Parameter Results ug/l(ppb)	Event	MW-4		MW-5		MW-13		MW-14		MW-15		MW-16		MW-18		Analysis Type	NCS (ug/L)	MCL (ug/L)
Benzene	6/20/94	10	U	-		5.30	U	5.30	U	5.30	U	5.30	U	5.30	U	8021	1	5
	9/27/94	2	J	-		10	U	10	U	10	U	2	J	1	J	CLP	1	5
	2/06/95	10	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	8021	1	5
	4/11/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	CLP	1	5
	7/10/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	8021	1	5
	4/10/96	-		-		-		-		10	U	-		-		CLP	1	5
	4/8/97	-		-		-		-		1	U	-		-		8021	1	5
	1/15/98	10	U	10	U	10	U	10	U	10	U	-		10	U	CLP	1	5
	2/12-14/01	1	U	1	U	1	U	1	U	1	U	-		1	U	8021	1	5
	2/11-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	1	5
	8/12-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	1	5
Chloroethane	6/20/94	10	U	-		9.29	U	9.29	U	9.29	U	9.29	U	9.29	U	8021	-	-
	9/27/94	18		-		10	U	10	U	10	U	10	U	10	U	CLP	-	-
	2/06/95	10	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	8021	-	-
	4/11/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	CLP	-	-
	7/10/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	8021	-	-
	4/10/96	-		-		-		-		10	U	-		-		CLP	-	-
	4/8/97	-		-		-		-		1	U	-		-		8021	-	-
	1/15/98	10	U	10	U	10	U	10	U	10	U	-		10	U	CLP	-	-
	2/12-14/01	2	U	2	U	2	U	2	U	2	U	-		2	U	8021	-	-
	2/11-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	-	-
	8/12-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	-	-
Dichlorodifluoromethane	6/20/94	10	U	-		46.64	U	46.64	U	46.64	U	46.64	U	46.64	U	8021	1400	-
	9/27/94	10	U	-		10	U	10	U	10	U	10	U	10	U	CLP	1400	-
	2/06/95	10	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	8021	1400	-
	4/11/95	10	U	10	U	10	U	10	UJ	10	UJ	10	UJ	10	UJ	CLP	1400	-
	7/10/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	8021	1400	-
	4/10/96	-		-		-		-		10	U	-		-		CLP	1400	-
	4/8/97	-		-		-		-		1	U	-		-		8021	1400	-
	1/15/98	10	U	10	U	10	U	10	U	10	U	-		10	U	CLP	1400	-
	2/12-14/01	1	U	1	U	1	U	1	U	1	U	-		1	U	8021	1400	-
	2/11-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	1400	-
	8/12-14/02	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	8260B	1400	-
1,1-Dichloroethane	6/20/94	10	U	-		0.99	J	43.10	U	0.26	J	43.10	U	43.10	U	8021	700	-
	9/27/94	10	U	-		10	U	10	U	10	U	10	U	10	U	CLP	700	-
	2/06/95	10	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	8021	700	-
	4/11/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	CLP	700	-
	7/10/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	8021	700	-
	4/10/96	-		-		-		-		10	U	-		-		CLP	700	-
	4/8/97	-		-		-		-		1	U	-		-		8021	700	-
	1/15/98	10	U	10	U	10	U	10	U	10	U	-		10	U	CLP	700	-
	2/12-14/01	1	U	1	U	1	U	1	U	1	U	-		1	U	8021	700	-
	2/11-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	700	-
	8/12-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	700	-
1,1-Dichloroethene	6/20/94	10	U	-		9.75	U	9.75	U	9.75	U	9.75	U	9.75	U	8021	7	7
	9/27/94	10	U	-		10	U	10	U	10	U	10	U	10	U	CLP	7	7
	2/06/95	10	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	8021	7	7
	4/11/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	CLP	7	7
	7/10/95	10	U	10	U	10	U	10	U	10	U	10	U	10	U	8021	7	7
	4/10/96	-		-		-		-		10	U	-		-		CLP	7	7
	4/8/97	-		-		-		-		0.77	J	-		-		8021	7	7
	1/15/98	10	U	10	U	10	U	10	U	10	U	-		10	U	CLP	7	7
	2/12-14/01	1	U	1	U	1	U	1	U	1	U	-		1	U	8021	7	7
	2/11-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	7	7
	8/12-14/02	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	8260B	7	7

APPENDIX D

POTABLE WELL ORGANIC ANALYSIS SUMMARY TABLE

POTABLE WELL TESTING - WATAUGA COUNTY, NC
RESULTS OF VOLATILE AND SEMIVOLATILE ANALYSIS

CONSTITUENT	MARCH 5, 1993*	MARCH 18, 1993*	MARCH 24, 1993*	JUNE 23, 1993**	JULY 13, 1994**	NCS	MCL
Carroll Residence (12)	**WELL ABANDONED IN 1995**						
Benzene	2.1	1.7		1.9		1.0	5
Chloroethane	173.4	74.5		**ND**		2800	---
Chloromethane	**ND**	14.8		**ND**		2.6	---
Dichlorodifluoromethane	30.6	**ND**		**ND**		1400	---
1,1-Dichloroethane	20.9	17.4		**ND**		70	---
1,1-Dichloroethene	4.1	1.5		**ND**		7	7
cis-1,2-Dichloroethene#	1.2	0.9		<1.0		70	70
2,2-Dichloropropane#	1.2	0.9		**ND**		---	---
4-Isopropyltoluene	**ND**	0.2	NS	**ND**	NS	---	---
Isopropylbenzene	0.6	**ND**		**ND**		70	---
Methylene Chloride	**ND**	43.0 (T)		138.2		4.6	5
Styrene	2.8	0.5		**ND**		100	100
Tert-Butyl Methyl Ether	**ND**	**ND**		2.4		200	---
Tetrachloroethene	5.4	4.7		4.2		0.7	5
Toluene	**ND**	0.6 (T)		**ND**		1000	1000
1,1,1-Trichloroethane	19.7	15.7		29.4		200	200
Trichloroethene	7	5.5		7.0		2.8	5
Trichlorofluoromethane	37.1	20.2		**ND**		2100	---
Vinyl Chloride	1.7 (T)	**ND**		**ND**		0.015	2
p and m-Xylene	**ND**	**ND**		<1.0		530	10,000
o-Xylene	**ND**	3.4		2.9		530	10,000
Nissan-Mazda Dealership (4)	**WELL ABANDONED IN 1995**						
Carbon Tetrachloride	0.2		**ND**		**ND**	0.269	5
Chloroethane	19.1		**ND**		**ND**	2800	---
Dichlorodifluoromethane	8.2		8.7		**ND**	1400	---
1,1-Dichloroethane	98.5		63.1		104.3	70	---
1,2-Dichloroethane	**ND**		0.5		**ND**	0.38	---
1,1-Dichloroethene	5.4		3.7		4.7	7	7
cis-1,2-Dichloroethene#	22.2		13.0		23.7	70	70
1,2-Dichloropropane	0.5		0.3		**ND**	0.51	5
2,2-Dichloropropane#	22.2	NS	13.0	NS	**ND**	---	---
Tetrachloroethene	21.8		28.1		30.9	0.7	5
Toluene	**ND**		0.8(T)		**ND**	1000	1000
1,1,1-Trichloroethane	14.7		19.3		22.9	200	200
Trichloroethene	11.2		9.1		12.6	2.8	5
Trichlorofluoromethane	0.4		**ND**		**ND**	2100	---
o-Xylene	0.4		0.5(T)		**ND**	530	10,000

NOTE: All Concentrations are in ppb (ug/L). (Other footnotes located on page 4)

POTABLE WELL TESTING
WATAUGA COUNTY, NC
RESULTS OF BREMCO WELL ANALYSIS

CONSTITUENT	3/5/93*	4/6/94**	8/2/94**	12/7/94**	4/26/95**	10/24/95**	4/9/96**	10/9/96**	6/4/97**	2/10/98**	8/17/98**	2/18/99**	NCS	MCL
Blue Ridge Electric Membership Company - (BREMCO) (5) Connected to public water in 2003.														
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.2 (J)	trace	trace	1	5
1.1-Dichloroethane	0.7	<1.0	1.4	1.0	1.2	1.8	1.5	1.5	2.0	3.2 (J)	1.6	1.5	700	---
1,1,1-Trichlorothane	0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	trace	trace	trace	200	200
Trichloroethene	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2 (J)	0.5	trace	2.8	5
1,1-Dichloroethene	ND	1.0	1.9	<1.0	1.1	1.7	1.0	<1.0	1.7	3.9 (J)	2.6	ND	7	7
cis-1,2-Dichloroethene	ND	<1.0	ND	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.5 (J)	trace	trace	70	70
Tetrachloroethene	ND	<1.0	<1.0	trace	<1.0	<1.0	<1.0	<1.0	<1.0	trace	trace	trace	0.7	5
Cloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	trace	70	80
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.6	5
Methyl-t-butyl-ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	200	---
Tetrahydrofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5 (J)	ND	---	---
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1400	---

CONSTITUENT	5/22/00**	8/7/01***	2/11/02***	8/14/02****	1/22/03****	7/15/03****	3/16/04****	9/29/04****	3/30/05^^	10/5/05^^	4/05/06^^	NCS	MCL
Blue Ridge Electric Membership Company - (BREMCO) (5) Connected to public water in 2003.													
Benzene	trace	ND	ND	ND		ND	ND	ND	ND	ND	ND	1	5
1.1-Dichloroethane	5.0	6	6	7.7		8.8	5,7	4.1	ND	4.7	0.5	700	---
1,1,1-Trichlorothane	trace	ND	ND	ND		ND	ND	ND	ND	ND	ND	200	200
Trichloroethene	0.6	0.8	0.6	0.72		0.69	ND	ND	ND	ND	ND	2.8	5
1,1-Dichloroethene	2.7	2	ND	1.6		1.4	ND	ND	ND	ND	ND	7	7
cis-1,2-Dichloroethene	0.5	0.9	1	1.4		1.6	ND	ND	ND	0.7	ND	70	70
Tetrachloroethene	trace	ND	ND	ND	NS	0.53	ND	ND	ND	ND	ND	0.7	5
Cloroform	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	70	80
Methylene Chloride	0.8	ND	ND	ND		ND	ND	ND	ND	ND	ND	4.6	5
Methyl-t-butyl-ether	trace	ND	ND	ND		ND	ND	ND	ND	ND	ND	200	---
Tetrahydrofuran	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	---	---
Chloroethane	ND	0.5	1	1.3		1.3	1.1	0.52	ND	1.1	ND	---	---
Dichlorodifluoromethane	ND	1	1	1.6		0.94	0.59	0.58	ND	ND	ND	1400	---

NOTE: All Concentrations are in ppb (ug/L)

P:\06\500\06520\06520-39\Reports\2006 tables\[XLS - 06 0523 - NCDENR - POTTAB234 - JES.xls]BREMCO

POTABLE WELL TESTING
WATAUGA COUNTY, NC
RESULTS OF ANALYSIS

CONSTITUENT	3/5/93*	4/6/94**	8/2/94**	12/7/94**	4/26/95**	10/24/95**	4/9/96**	10/9/96**	6/4/97**	2/10/98**	8/17/98**	2/18/99**	5/22/00**	8/7/01***	2/11/02***	8/14/02****	1/22/03****	7/15/03****	3/16/04****	9/29/04****	3/30/05^^	3/30/05^^	NCS	MCL
Bolick rental resident (2) Connected to public water in 2003.																								
tert-Butylbenzene	1.1	ND				ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND					---	---
Isopropylbenzene	0.7	ND				ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND					---	---
Trichloroethene	0.5	ND				ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND					2.8	5
1,3,5-Trimethylbenzene	0.7	ND	NS	NS	NS	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	---	---
1,1-Dichloroethane	ND	trace				<1.0	trace	<1.0	trace	ND		<1.0	0.6	ND	0.7	0.99	0.53	0.77					700	---
1,1-Dichloroethene	ND	trace				trace	ND	trace	ND	ND		ND	trace	ND	ND	ND	ND	ND	connected	connected	connected	connected	7	7
cis-1,2-Dichloroethene	ND	ND				ND	ND	ND	ND	ND		ND	trace	ND	ND	ND	ND	ND	to public	to public	to public	to public	70	70
Methyl Ethyl Ketone	ND	trace				35.3	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	water	water	water	water	4200	---
Tetrahydrofuran	ND	ND				42.3	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND					---	---

CONSTITUENT	5/11/93**	6/23/93**	3/30/94**	8/2/94**	12/7/94**	4/26/95**	10/24/95**	5/20/96**	10/9/96**	2/10/98**	8/17/98**	6/9/99**	9/6/00**	5/24/01**	2/11/02***	8/14/02****	1/22/03****	7/15/03****	3/16/04****	9/29/04****	3/30/05^^	NCS	MCL
Ward residence (24) Declined connection to public water in 2000.																							
Methylene Chloride	3.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		5	5
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		200	200
Trichloroethene	trace	trace	<1.0	ND	trace	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	2.8	5
Tetrachloroethene	ND	trace	<1.0	ND	trace	trace	<1.0	<1.0	trace	ND	trace	ND	ND	ND	ND	ND	ND	ND	ND	ND		0.7	5
Carbon Tetrachloride	ND	ND	<1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	vacant	0.3	5
1,1-Dichloroethane	ND	ND	<1.0	ND	<1.0	<1.0	trace	<1.0	ND	ND	trace	trace	ND	trace	ND	ND	ND	ND	ND	ND		700	---
Chloroform	ND	ND	trace	ND	ND	trace	trace	ND	ND	ND	trace	ND	ND	ND	37	38	ND	ND	ND	ND		70	80
Bromodichloromethane				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.8	8.0	ND	ND	ND	ND		0.56	80
Dibromochloromethane				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.81	1.6	ND	ND	ND	ND		-	80
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	ND	trace	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		-	0.05

CONSTITUENT	3/18/93*	4/6/94**	12/7/94**	2/19/01**	8/7/01***	2/11/02***	8/14/02****	1/22/03****	7/15/03****	3/16/04****	9/29/04****	3/30/05^^	10/05/05^^	NCS	MCL
Greer residence (15) Declined connection to public water in 2002.															
Benzene	ND	<1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.0	5
Toluene	ND	6.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1000	1000
Tetrachloroethene	ND	trace	ND	<1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7	5
Ethylbenzene	ND	trace	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	550	700
p and m - Xylene	ND	<1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	530	10,000
Styrene	ND	trace	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.14	100

CONSTITUENT	3/5/93*	6/23/93**	3/30/94**	10/9/96**	NCS	MCL
Perry Residence (11) Connected to public water in 2000.						
Dichlorodifluoromethane	2.5	ND	ND	ND	1400	---
Naphthalene	0.7	ND	ND	ND	21	---
Chloromethane	<9	ND	ND	ND	2.6	---
Methylene Chloride	<0.6	ND	ND	ND	5	5
Chloroform		ND	<1.0	NDT	0.19	80

	3/18/93*	2/21/96**	2/14/02***	8/14/02****	1/22/03****	3/16/04****	10/05/05^^	NCS	MCL
Bolick residence (1) Connected to public water in 2004.									
Total Xylenes	ND	ND	0.7	ND	ND	ND	ND	530	10000

NOTE: All Concentrations are in ppb (ug/L) (Other footnotes located on page 4)

P:\06\500\06520\006520-39\Reports\2005 tables\[XLS - 05 1026 - NCDENR - POTTAB234 - JES.xls]POTABLE (pg2)

POTABLE WELL TESTING
WATAUGA COUNTY, NC
RESULTS OF ANALYSIS

CONSTITUENT	3/23/93**	2/19/01**	8/7/01***	1/11/02***	8/14/02****	1/22/03****	7/15/03****	3/16/04****	9/29/04****	3/30/05^^	10/05/05^^	4/05/05^^	NCS	MCL
Williamson residence (16) Connected to public water in 2004.														
Methyl-t-butyl-ether	ND	<1.0	ND	ND	1.2	1.2	ND	1.5	1.7	ND	ND	ND	200	---
Tetrachloroethene	ND	<1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7	5

CONSTITUENT	3/18/93*	5/11/93**	9/21/93**	11/2/99**	9/6/00**	3/30/05^^	NCS	MCL
Shared Well #1 (8 Houses) (13)								
sec-Butylbenzene	0.2	ND	ND	ND	ND	ND	---	---
Carbon Tetrachloride	0.1	ND	ND	ND	ND	ND	0.269	5
Methylene Chloride	1.5	ND	ND	ND	ND	ND	4.6	5
alpha-Chlordane	0.4	ND	ND	ND	ND	ND	0.1	2
gamma-Chlordane	0.3	ND	ND	ND	ND	ND	0.1	2
1,4-Dichlorobenzene	ND	ND	ND	trace	ND	ND	1.4	75
2-Butanone	ND	ND	ND	ND	2.3J	ND	4200	---
Chloroform	ND	ND	ND	trace	ND	ND	70	80

CONSTITUENT	3/5/93**	4/26/95**	4/9/96**	2/10/98**	NCS	MCL
Chevrolet dealership (7) Connected to public water in 2000.						
Chloroform	ND	ND	ND	39.7	70	80
Bromodichloromethane	ND	ND	ND	5	0.56	80
Methyl-t-butyl-ether	ND	24.4	2.5	ND	200	---

CONSTITUENT	5/11/93**	11/2/99**	2/11/02***	NCS	MCL
Younce residence (25)					
Tetrahydrofuran	ND	1.2 J	ND	---	---

CONSTITUENT	3/18/93*	3/30/94**	1/12/95**	10/24/95**	4/9/96**	10/9/96**	6/12/97**	2/10/98**	6/9/99**	NCS	MCL
Shared Well #2 (4 Houses) (14) Connected to public water in 2000.											
1,4-Dichlorobenzene	0.5	ND	ND	ND	ND	ND	ND	ND	ND	1.4	75
1,1-Dichloroethane	ND	ND	ND	<1.0	<1.0	<1.0	ND	ND	ND	700	---
1,1-Dichloroethene	ND	<1.0	<1.0	ND	ND	ND	ND	ND	ND	7	7
Tetrachloroethene	ND	ND	ND	trace	ND	trace	ND	ND	ND	0.7	5
1,1,1-Trichoroethane	ND	<1.0	ND	trace	ND	ND	ND	ND	ND	200	200
Chloroform	ND	trace	ND	9.0	ND	ND	ND	ND	ND	70	80
Bromodichloromethane	ND	ND	ND	1.4	ND	ND	ND	ND	ND	0.56	80
Dibromochloromethane	ND	ND	ND	<1.0	ND	ND	ND	ND	ND	---	80
2-Chlorotoluene	ND	ND	ND	1.2	ND	ND	ND	ND	ND	---	---
4-Chlorotoluene	ND	ND	ND	1.0	ND	ND	ND	ND	ND	---	---
Methyl Ethyl Ketone	ND	ND	ND	24.6	ND	ND	ND	ND	ND	4200	---
Tetrahydrofuran	ND	ND	ND	13.4	ND	ND	ND	ND	ND	---	---

CONSTITUENT	8/9/93**	10/20/93**	9/21/94**	NCS	MCL
McClintock residence (33) Connected to public water in 2000.					
1,2-Dichloroethane	<1.0	<1.0	ND	0.38	5
Chloroform	<1.0	ND	<1.0	70	80

CONSTITUENT	3/23/93**	5/20/96**	10/9/96**	6/12/97**	6/9/99**	NCS	MCL
Simko residence (20) Connected to public water in 2000.							
1,1,1-Trichloroethane	trace	trace	trace	trace	ND	200	200
Methyl-t-butyl-ether	ND	ND	ND	ND	<1.0	200	---
Chloroform	<1.0	<1.0	NDT	ND	<1.0	70	80

CONSTITUENT	10/20/93**	2/21/96**	8/19/98**	2/18/99**	9/6/00**	NCS	MCL
Meadowridge condominiums (38)							
Chloroform	<1.0	ND	ND	ND	ND	70	80
trans-1,2-Dichloroethene	<1.0	ND	ND	ND	ND	70	100
1,1,1-Trichloroethane	trace	ND	ND	ND	ND	200	200
Trichloroethene	trace	ND	ND	ND	ND	2.8	5

CONSTITUENT	5/11/93**	5/20/96**	6/12/97**	2/10/98**	11/2/99**	5/22/00**	2/14/02***	NCS	MCL
Johnson residence (23)									
Chloroform	trace	<1.0	<1.0	ND	trace	trace	ND	70	80
Methyl-t-butyl-ether	ND	ND	ND	ND	ND	trace	ND	200	---
Toluene	ND	ND	ND	ND	trace	ND	ND	1000	1000
Ethyl Benzene	ND	ND	ND	ND	trace	ND	ND	550	700
Xylenes	ND	ND	ND	ND	trace	ND	ND	530	10000
1,4-Dichlorobenzene	ND	ND	ND	ND	trace	ND	ND	1.4	75

NOTE: All Concentrations are in ppb (ug/L) (Other footnotes located on page 4)

POTABLE WELL TESTING - WATAUGA COUNTY, NC
WELLS SHOWING NO DETECTED ORGANIC COMPOUNDS

SAMPLING LOCATION	SAMPLING DATES
Mack Brown rental residence (3)	March 5, 1993*, July 3, 1994** and Feb. 19, 2001
Hollar and Green Produce (6)	3/5/93*, 9/19/98**, 5/24/01**, 7/21/03***, 3/30/05^^, and 4/5/06^^
Vannoy residence (8)	March 5, 1993*
Martin High Country Rentals #1 (9)	March 5, 1993* connected to public water.
Martin High Country Rentals #2 (10)	March 5, 1993* connected to public water.
Suddreth residence (17)	3/18/1993*, 9/21/1993**, 73/1994**and 10/12/1999**
Taylor residence (18)	March 1993*, Oct. 1996**, Nov. 1999*, and March 2005^^
Hodges residence (19)	March 1993*, Oct. 1999**, Feb. 2002***, and March 2005^^
Findt residence (21)	3/18/1993*, 5/22/2000**, 3/30/2005^^, AND 10/5/2005^^
Rusher residence (22)	March 23, 1993* and October 12, 1999**
McLean residence (26)	June 23, 1993**
Medloin residence (27)	June 23, 1993** and March 30, 2005^^
Rector residence (28)	June 23, 1993**
Robinson residence (29)	June 23, 1993** and March 30, 2005^^
Yates residence (30)	August 3, 1993**
Cook residence (31)	August 3, 1993**
Animal Control Office (32)	August 3, 1993**
Brook Hollow Trailer Park (37)	October 11, 1993**
Green residence (34)	October 20, 1993**
Shared well #3 (35)	October 20, 1993**
BREMCO residence (36) **REMOVED**	September 21, 1993**
Isaacs residence (39)	November 16, 1994** and August 7, 2001***
Austin residence (40)	January 12, 1995**
Norris residence (41)	January 12, 1995**
Meadowridge Condominiums (42)	February 16&17, 1998**
Meadowridge Condominiums (43)	February 16&17, 1998**
Meadowridge Condominiums (44)	August 19, 1998**
Bill Winkler residence (45)	Oct. 1999**, Aug. 2001***, Feb. 2002***, and March 2005^^
Beade residence (46)	Feb. 2001**, Aug. 2001***, Feb. 2002***, and March 2005^^
Eggers residence (47)	May 24, 2001**
Critcher residence (51)	August 7, 2001***
Steward residence (52)	August 7, 2001***
Holladay residence (48)	August 7, 2001***
Hartley residence (53)	August 7, 2001***
Teague residence (50)	August 7, 2001***
Hays residence (49)	August 7, 2001***
Wil Winkler residence (54)	February 14, 2002*** and March 30, 2005^^

TABLE NOTES:

The sampled well reference number as presented on the Vicinity Map (Figure 1) is denoted in parentheses following the sampling locations name.

* Laboratory analysis performed by Central Virginia Laboratories and Consultants (CVLC) utilizing EPA Methods 502.2 (Volatiles) and 525.1 (Semi-Volatiles).

** Laboratory Analysis performed by NCDENR Division of Laboratory Services utilizing EPA Method 502.2 (Volatiles).

*** Laboratory Analysis performed by Severn Trent Services utilizing EPA Method 524.2 (Volatiles).

**** Laboratory Analysis performed by Toxikon utilizing EPA Method 524.2 (Volatiles)

^^ Laboratory Analysis performed by Lancaster Lanoratories utilizing EPA Method 524.2 (Volatiles)

NSC - North Carolina Water Quality Standard (DEHNR-15A NCAC 2L.0202)

MCL - EPA Primary Drinking Water Standard Maximum Contaminant Level

ND denotes no compounds detected for entire analytical scan.

NDT denotes compound detected in trip blank at same concentration as well sample.

NS denotes not sampled on that date.

NA denotes compound not analyzed on that date.

(J) denotes estimated result. # denotes compound co-elutes.

(T) denotes found in Trip Blank. trace = < 0.5 ppb (ug/l)

Note that chloroform was detected in the residential wells 17, 18, 19, 22, 26, 30, 40, 45 and 46. Chloroform has not been detected in any of the landfill assessment monitoring wells to date, and is likely a transformation product resulting from the chlorination of the well systems.

Martin High Country Rentals (9 and 10) was connected to public water in 2000.

APPENDIX E

LABORATORY ANALYTICAL DATA SUMMARY SHEETS AND ASSOCIATED DATA VALIDATION SUMMARIES

CLP INORGANIC DATA REVIEW SUMMARY

Draper Aden Associates performed a limited review of the analytical results for six inorganic target parameters: barium, chromium, cobalt, iron, nickel and vanadium analyzed per USEPA Contract Laboratory Program (CLP) Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP) Method, ILM04.1. Sampling for this Assessment monitoring event was performed on April 4-5, 2006. The samples included in the sample delivery group (SDG) are MW-2, MW-3, MW-8, MW-9, MW-12 and MW-17. All target metals were analyzed for their total concentrations. Sample MW-3 was designated as the quality control (QC) sample for duplicate and matrix spike analyses.

CompuChem Environmental (CompuChem), a division of Liberty Analytical Corporation of Cary, North Carolina performed all the inorganic analyses. All analyses were performed in accordance with USEPA CLP Statement of Work ILM04.1. CompuChem submitted results to Draper Aden Associates in a final certificate of analysis which included sample analytical results as well as relevant documentation to verify and validate the results. The results of this data validation presented here are based upon a review of QA/QC information including holding times, preservation procedures and standards, spike analysis on sample matrix, blank samples analyses (method, trip, and calibration blanks), duplicate sample analyses, interference check sample results, laboratory control samples (LCS), serial dilution criteria, IDL/CRDL information. Review was performed on all summary sheets provided by the laboratory, unless a notable discrepancy in the data package required additional review of the raw data. The completeness of this data package was verified including the presence of raw analytical data, chain of custody and preparation logs.

All applicable holding time and preservation criteria were met.

CLP-ICP SOW ILM04.1

The original certificate of analysis appeared complete in its presentation and the data were of acceptable quality. The certificate of analysis demonstrated the ability of the laboratory to achieve the reported contract required detection limit (CRDL) for each target parameter. All CRDLs were equal to or less than the respective USEPA MCL drinking water standard and North Carolina groundwater quality standards, where applicable.

All relevant instrument calibration and calibration verification criteria were met. All CRDL standards recovered within control limits, where applicable. Interference check sample (ICS-AB), spike sample and laboratory control samples recovered within control limits. Representative duplicate sample analysis results were also within control limits. All applicable serial dilution criteria were met. No blank detections influenced sample results.

All sample results greater than the CRDL and unaffected by the above data validation process were recorded as reported by the laboratory. Sample results reported between the instrument detection limit (IDL) and CRDL were qualified as estimated and flagged "J."

INORGANIC DATA EVALUATION FOR CLP-ICP METHOD, ILM04.1

Sample ID: MW-2, MW-3, MW-8, MW-9, MW-12, MW-17
QC Samples: Lab blanks, Spikes (MW-3) and Duplicates (MW-3)
Laboratory: CompuChem Environmental Corporation, Cary, NC; SDG 9533

Does Laboratory analyte list correspond to analyte list requested by DAA? √ yes _ no
Corresponds to Ba, Cr, Co, Fe, Ni, V
"√" denotes items reviewed. See Data Validation Summary for additional comments.

A. QC DOCUMENTATION CRITERIA

√ Specific IDLs for all target analytes (Quarterly)
√ Specific CRDLs for all target analytes, except where noted below
√ CRDL standard 70-130%, concentration 2 X CRDL, all target analytes (except Al, Ba, Ca, Fe, Mg, Na or K not required)

B. TECHNICAL HOLDING TIMES / PRESERVATION REQUIREMENTS:

√ 6 month holding time
√ Adjust pH <2 w/ HNO_3

C. INSTRUMENT CALIBRATION CRITERIA:

√ 1 calibration blank and at least 1 standard

D. INITIAL / CONTINUING CALIBRATION VERIFICATION CRITERIA:

√ 10 sample frequency
√ Use of calibration blank and check standard
√ %R within 90-110% range

E. BLANK SAMPLES ANALYSES CRITERIA:

N/A Trip Blank (check only if analyzed)
N/A Equipment Blank (check only if analyzed)
√ Method/Other Lab Blanks (check only if analyzed)
√ Interference free
√ CCB 10 sample frequency

F. INTERFERENCE CHECK SAMPLES (ICS) CRITERIA:

√ At beginning and end of batch (80-120%)
√ Verification of ICP interelement correction factors (Annual)

G. DUPLICATE SAMPLE ANALYSES CRITERIA:

√ One duplicate per batch of samples
√ **DUP:** %RPD ± 20% for sample values greater than 5 X CRDL
√ {sample ± CRDL} when values are less than 5 X CRDL

H. SPIKED SAMPLES ANALYSES CRITERIA:

√ %R within 75-125% range

I. LCS RESULTS CRITERIA:

√ 85-115%, all target analytes

J. SERIAL DILUTION CRITERIA:

√ <10% Difference (applicable when concentration >50X DL)

K. SAMPLE RESULTS CRITERIA:

√ Results fall within ICP linear concentration range

DAA conducted a limited data validation of the above noted data set using summary tables provided by the analyzing laboratory. Data evaluation was conducted using CLP data validation guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004). Validation of this data set was limited to review of the items detailed in this report.

Validated by: Date:

Draper Aden Associates
Engineering • Surveying • Environmental Services

Kathy Olsen 05/25/06

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Data Validation Report for Inorganics Fraction. Monitoring Event: 4/5/2006

Watauga County Landfill

Draper Aden Associates
Engineering ♦ Surveying ♦ Environmental Services

Analyte	Sample ID	Laboratory Results (ug/L)		Validated Results (ug/L)		CRDL (ug/L)	Validation Notes
Method: ILM04.1							
Laboratory: CompuChem, a Division of Liberty Analytical, Cary, NC							
Barium	MW-2	330		330		200	No action taken.
	MW-3	168	B	168	J	200	Estimated result. Result < CRDL.
	MW-8	269		269		200	No action taken.
	MW-9	619		619		200	No action taken.
	MW-12	371		371		200	No action taken.
	MW-17	237		237		200	No action taken.
Chromium	MW-2	1.1	B	1.1	J	10	Estimated result. Result < CRDL.
	MW-3	2.9	B	2.9	J	10	Estimated result. Result < CRDL.
	MW-8	20.5		20.5		10	No action taken.
	MW-9	4.3	B	4.3	J	10	Estimated result. Result < CRDL.
	MW-17	11.8		11.8		10	No action taken.
Cobalt	MW-8	9.3	B	9.3	J	50	Estimated result. Result < CRDL.
	MW-9	8.5	B	8.5	J	50	Estimated result. Result < CRDL.
	MW-17	6	B	6	J	50	Estimated result. Result < CRDL.
Iron	MW-2	297		297		100	No action taken.
	MW-3	436		436		100	No action taken.
	MW-8	6800		6800		100	No action taken.
	MW-9	334		334		100	No action taken.
	MW-17	4280		4280		100	No action taken.
Nickel	MW-2	7.2	B	7.2	J	40	Estimated result. Result < CRDL.
	MW-3	4	B	4	J	40	Estimated result. Result < CRDL.
	MW-8	15.3	B	15.3	J	40	Estimated result. Result < CRDL.
	MW-9	8.9	B	8.9	J	40	Estimated result. Result < CRDL.
	MW-12	3.3	B	3.3	J	40	Estimated result. Result < CRDL.
	MW-17	22.2	B	22.2	J	40	Estimated result. Result < CRDL.

Definitions: **CRDL** Denotes contract required detection limit. **B** Denotes result < CRDL (a laboratory qualifier). **R** Denotes result is rejected.
J Denotes result is estimated. Target analytes not listed above were not detected above detection limit and no data qualification was required.

Data Validation Report for Inorganics Fraction. Monitoring Event: 4/5/2006

Watauga County Landfill

Draper Aden Associates
Engineering ♦ Surveying ♦ Environmental Services

Analyte	Sample ID	Laboratory Results (ug/L)		Validated Results (ug/L)		CRDL (ug/L)	Validation Notes
Vanadium	MW-2	3	B	3	J	50	Estimated result. Result < CRDL.
	MW-3	1.4	B	1.4	J	50	Estimated result. Result < CRDL.
	MW-8	17.4	B	17.4	J	50	Estimated result. Result < CRDL.
	MW-9	1.6	B	1.6	J	50	Estimated result. Result < CRDL.
	MW-12	0.52	B	0.52	J	50	Estimated result. Result < CRDL.
	MW-17	10.5	B	10.5	J	50	Estimated result. Result < CRDL.

Definitions: **CRDL** Denotes contract required detection limit. **B** Denotes result < CRDL (a laboratory qualifier). **R** Denotes result is rejected.
J Denotes result is estimated. Target analytes not listed above were not detected above detection limit and no data qualification was required.

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
MW-17

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix (soil/water): WATER Lab Sample ID: 953306

Level (low/med): LOW Date Received: 4/7/2006

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-39-3	Barium	237			P
7440-47-3	Chromium	11.8			P
7440-48-4	Cobalt	6.0	B		P
7439-89-6	Iron	4280			P
7440-02-0	Nickel	22.2	B		P
7440-62-2	Vanadium	10.5	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

US EPA - CLP

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW-2

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix (soil/water): WATER Lab Sample ID: 953302

Level (low/med): LOW Date Received: 4/7/2006

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-39-3	Barium	330			P
7440-47-3	Chromium	1.1	B		P
7440-48-4	Cobalt	0.40	U		P
7439-89-6	Iron	297			P
7440-02-0	Nickel	7.2	B		P
7440-62-2	Vanadium	3.0	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

US EPA - CLP

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW-3

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix (soil/water): WATER Lab Sample ID: 953301

Level (low/med): LOW Date Received: 4/7/2006

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-39-3	Barium	168	B		P
7440-47-3	Chromium	2.9	B		P
7440-48-4	Cobalt	0.40	U		P
7439-89-6	Iron	436			P
7440-02-0	Nickel	4.0	B		P
7440-62-2	Vanadium	1.4	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

US EPA - CLP

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW-8

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix (soil/water): WATER Lab Sample ID: 953303

Level (low/med): LOW Date Received: 4/7/2006

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-39-3	Barium	269			P
7440-47-3	Chromium	20.5			P
7440-48-4	Cobalt	9.3	B		P
7439-89-6	Iron	6800			P
7440-02-0	Nickel	15.3	B		P
7440-62-2	Vanadium	17.4	B		P

Color Before: BROWn Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

US EPA - CLP

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW-9

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix (soil/water): WATER Lab Sample ID: 953304

Level (low/med): LOW Date Received: 4/7/2006

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-39-3	Barium	619			P
7440-47-3	Chromium	4.3	B		P
7440-48-4	Cobalt	8.5	B		P
7439-89-6	Iron	334			P
7440-02-0	Nickel	8.9	B		P
7440-62-2	Vanadium	1.6	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

CLP VOLATILE ORGANIC ANALYSIS (VOA) DATA VALIDATION SUMMARY

Draper Aden Associates (DAA) performed a limited review of the analytical results for volatile organic analytes analyzed according to the requirements of EPA CLP 5/99 Statement of Work (SOW) document number OLM04.3. The reduced list of twelve target analytes included dichlorodifluoromethane. Samples were collected from monitoring well locations MW-2, MW-3, MW-8, MW-9, MW-12, MW-17 and surface water locations S-1, S-2, S-3, S-4, S-5 and S-6 during the April 4-5, 2006 sampling event at the Watauga County Landfill.

CompuChem Environmental (CompuChem), a division of Liberty Analytical Corporation of Cary, North Carolina performed the GC/MS analysis. CompuChem submitted results to DAA in a final certificate of analysis, which included sample analytical results as well as relevant documentation to validate and verify the analytical results.

The evaluation of CompuChem's compliance with the method was based on a limited review of the following items: QC deliverables package, case narrative, technical holding time and preservation requirements, instrument performance check, instrument calibrations, blank analysis, system monitoring recoveries, matrix spike/matrix spike duplicate (MS/MSD) analysis, internal standard requirements, laboratory control samples (LCS), and confirmation of detected analytes. Review of transcriptions from raw data to summary sheets was performed. Specific representative calculations were not performed except where noted. The following information is intended to summarize data review results and any observed significant deviations from method and/or contractual requirements.

The original certificate of analysis presented data which were of acceptable quality. All holding time, preservation, BFB tuning, initial and continuing calibration, blank, system (surrogate) monitoring, MS/MSD, internal standard and LCS requirements were met, unless where noted below. No transcription errors were noted.

Target analytes were detected both above and below the contract required quantitation limit (CRQL). Based on historical data, sample MW-2 required a 1:5 dilution.

CLP VOLATILE ORGANIC ANALYSIS DATA VALIDATION

Sample ID: MW-2, MW-3, MW-8, MW-9, MW-12, MW-17, S-1, S-2, S-3, S-4, S-5, S-6
QC Samples: MW-3 MS, MW-3 MSD, Trip blank, Lab blanks, LCS
Laboratory: CompuChem Environmental Corporation, Cary, NC.-SDG 9533

- Were all samples analyzed under CLP SOW for organic analysis and did the analyte list include dichlorodifluoromethane? ☑ YES ☐ NO

Comment: Samples were analyzed under CLP protocol (OLM04.3). Target analytes included: dichlorodifluoromethane, vinyl chloride, chloroethane, 1,1-dichloroethene, methylene chloride, trans-1,2-dichlroethene, 1,1-dichloroethane, cis-1,2-dichloroethene, 1,1,1-trichloroethane, benzene, trichloroethene, tetrachloroethene.

A. CLP TECHNICAL HOLDING TIME AND PRESERVATION CRITERIA:

1. Was the 14-day sample collection to analysis holding time met? ☑ YES ☐ NO
2. Were the samples received at 4°C (+/- 2°C) and in good condition? ☑ YES ☐ NO
3. Were the samples preserved, & pHs adjusted to <2 with HCl? ☑ YES ☐ NO
   If samples were not preserved, were they analyzed within 7 days? ☑ NA ☐ YES ☐ NO

Comment: All holding time and preservation criteria were met.

B. GCMS INSTRUMENT PERFORMANCE CHECK CRITERIA:

1. Was analysis of the instrument performance check solution performed at the beginning of each 12 hour period during which standards or samples were analyzed? ☑ YES ☐ NO
2. Was there documentation of the injection of a 5- 50 ng bromofluorobenzene (BFB) solution? ☑ YES ☐ NO
3. Were all ion abundance criteria met? (CLP Form V VOA) ☑ YES ☐ NO

Comment: All instrument performance check criteria were met.

C. INITIAL GCMS CALIBRATION CRITERIA:

- Were initial calibrations (ICAL) and any directly associated blanks and samples analyzed within 12 hours of the associated instrument performance (tune) check? ☑ YES ☐ NO

1. CLP Validation Criteria:

- Were quantitation ions randomly checked against the primary quantitation ions required by the method? ☑ YES ☐ NO

- Were all RRFs calculated based on the internal standard associated with that analyte as listed in the method? ☑ YES ☐ NO
- Did all target analytes and system monitoring compounds (surrogates) have RRFs ≥ 0.05 and %RSDs ≤ 30.0%? ☑ YES ☐ NO
  If not, list compounds which exceed criteria:
- Were 10% of the analytes recalculated? ☐ YES ☑ NO

2. CLP Contractual Requirements:

- Refer to Table 5 of OLMO4.3 and evaluate all relative response factors and % RSD results for method compliance. (Up to two compounds may fail these criteria; however, these analytes must have a minimum RRF ≥ 0.0100 and a % RSD ≤ 40.)
- Did ICAL meet the CLP initial calibration criteria? ☑ YES ☐ NO
- If not, explain:

Comment: All initial calibration criteria were met.

D. CONTINUING GCMS CALIBRATION CRITERIA:

- Were continuing calibrations (CCAL) analyzed at the beginning of each 12 hour period following the analysis of the instrument performance check and prior to analysis of the method blank and samples? The CCAL may be part of the ICAL or run independently on another 12 hour analysis period. ☑ YES ☐ NO

1. CLP Validation Criteria:

- Did all target analytes and surrogates have RRFs ≥ 0.05 and %D within ± 25.0%? ☑ YES ☐ NO
  If not, list compounds which exceed criteria:
- Were 10% of the analytes recalculated? ☐ YES ☑ NO

2. CLP Contractual Requirements:

- Evaluate RRFs and %D results based on Table 5 of OLM04.3
- Did the CCAL meet CLP continuing calibration criteria? ☐ YES ☑ NO

Comment: All continuing calibration criteria were met.

E. BLANK CRITERIA:

1. Was a method blank analyzed after the calibration standards, prior to sample analysis, and once for every 12 hour period? Was a blank also analyzed after highly contaminated samples to

prevent carry over contamination? ☑ YES ☐ NO

2. Was a trip blank analyzed with this sample batch? ☑ YES ☐ NO
3. Were the trip blanks and method blanks interference free? ☑ YES ☐ NO
4. Were any target analytes detected in other associated blanks? ☐ YES ☑ NO
5. List target analytes detected in the blanks:

Comment: All blank criteria were met.

F. SYSTEM MONITORING (SURROGATE) COMPOUNDS CRITERIA:

CLP Performance Criteria:

1. Were all three system monitoring compounds added to all samples and blanks to measure their recoveries in sample matrices? ☑ YES ☐ NO
2. Were the recoveries for the following analytes within the specified limits? ☑ YES ☐ NO
   - 1,2-dichloroethane-d_4 (76-114%)
   - 4-bromofluorobenzene (86-115%)
   - toluene-d_8 (88-110%)

Comment: System monitoring compounds criteria were met.

G. MATRIX SPIKE, MATRIX SPIKE DUPLICATE CRITERIA:

1. Was the MS/MSD analyzed at a frequency of one MS and MSD per 20 samples of a similar matrix? ☐ NA ☑ YES ☐ NO
2. Were spike recoveries within limits provided below, and as shown on Form III VOA? ☐ NA ☑ YES ☐ NO

Compound	*% R-Water*	*% RPD Water*
1,1-dichloroethene	61-145	≤ 14
trichloroethene	71-120	≤ 14
benzene	76-127	≤ 11
toluene	76-125	≤ 13
chlorobenzene	75-130	≤ 13

3. Were relative percent differences (RPDs) between MS/ MSD recoveries within the advisory limits provided above, and as shown on Form III VOA? ☑ YES ☐ NO

Comment: All MS/MSD criteria were met, where applicable.

H. INTERNAL STANDARDS CRITERIA:

1. Were internal standard areas within - 50% to + 100% of the last CCAL? ☑ YES ☐ NO
2. Were the internal standard retention times within +/- 30 seconds of the last CCAL? ☑ YES ☐ NO
3. Were the following internal standards used? ☑ YES ☐ NO
   - bromochloromethane
   - 1,4-difluorobenzene
   - chlorobenzene-d_5

Comment: Internal standards criteria were met.

I. TARGET ANALYTE IDENTIFICATION:

1. Were the RRTs of the reported analytes within +/- 0.06 RRT units of the standard RRT? ☑ YES ☐ NO
2. Check the sample spectra against the laboratory standard spectra to see that the following criteria were met:
   - Were all ions present in the standard spectra at a relative intensity of >10 %, present in the sample spectra?
   - Were the relative intensities of the ions between the standard and sample spectra within +/- 20 %? (Consider and account for ions present at > 10% in the sample spectra and not in the standard spectra.)

   Were all reported analytes confirmed? ☑ YES ☐ NO
3. Were all analyte concentrations which were recorded on the raw sample quantitation reports accurately transferred to the sample summary sheets? ☑ YES ☐ NO

Comment: Target analyte identification criteria were met. All reported analytes were confirmed.

J. TARGET ANALYTE QUANTITATION:

1. Was the correct internal standard, quantitation ion, and RRF used to quantitate the analyte? ☑ YES ☐ NO
2. Were the same internal standards, quantitation ions, and RRFs used consistently throughout, in both the calibration and quantitation process? ☑ YES ☐ NO
3. Were checks for peak splitting and tailing performed? ☑ YES ☐ NO
4. List all samples which required dilution: *MW-2*

Comment: Target analyte quantitation was accurate.

K. TENTATIVELY IDENTIFIED COMPOUNDS (TICs) VIA LIBRARY SEARCHES

Comment: A review of tentative identified compound (TIC) results revealed the presence of a few compounds in several samples as detailed in Section N.

L. SYSTEM PERFORMANCE:

1. Evaluate the overall system performance over the course of the 12 hour tune/calibration period based on:
   - shifts in chromatographic baseline
   - extraneous peaks
   - loss of resolution
   - peak tailing or splitting
   - trends in increase or decrease of IS areas
2. Was the overall system performance ☑ satisfactory ☐ unsatisfactory

Comment: The operation system appeared stable.

M. ADDITIONAL COMMENTS:

No revisions were needed.

N. ANALYTICAL DATA SET NOTES:

ANALYTE	SAMPLE ID	LAB RESULT (µg/l)	VALIDATED RESULT (µg/l)	NOTES[1]
Ethyl Ether	MW-3	25 NJ	22 NJ	Tentatively identified through comparison with the NIST/EPA/MSDS library of spectra. Estimated concentration calculated based on nearest internal standard.
Ethyl Ether	MW-8	20 NJ	20 NJ	
Trimethylsilanol	MW-8	29 NJ	29 NJ	
Chlorofluoromethane	MW-9	5 NJ	5 NJ	
Dichlorofluoromethane	MW-9	7 NJ	7 NJ	
Trimethylsilanol	MW-9	18 NJ	18 NJ	
Ethyl Ether	MW-12	22 NJ	22 NJ	
Ethyl Ether	S-2	20 NJ	20 NJ	

[1] *See definition section of report for additional information on Data Validation and Reporting Qualifiers.*
[2] *(Tentatively identified compounds denoted as laboratory contaminants and compounds that could not be tentatively identified, "unknowns", were not tabulated.)*

O. LIMITATIONS AND REFERENCES:

Draper Aden Associates conducted a limited data validation of the above noted data set using summary tables and raw data provided by the analyzing laboratory. Data evaluation was conducted in general accordance with *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October, 1999).* Validation of this data set is limited to the items detailed in this report.

Validated by:

Draper Aden Associates
Engineering ♦ Surveying ♦ Environmental Services

Date:

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Data Validation Report for GC/MS Fraction. Monitoring Event: 4/5/2006

Watauga County Landfill

Draper Aden Associates
Engineering ♦ Surveying ♦ Environmental Services

Analyte	Sample ID	Laboratory Results (ug/L)		Validated Results (ug/L)		LOQ/CRQL (ug/L)	Dilution	Validation Notes
Method: OLM04.3	*Laboratory: CompuChem, a Division of Liberty Analytical, Cary, NC*							
Chloroethane	MW-12	12		12		10	1	No action taken.
1,1-Dichloroethane	MW-12	34		34		10	1	No action taken.
cis-1,2-Dichloroethene	MW-12	61		61		10	1	No action taken.
Tetrachloroethene	MW-12	5	J	5	J	10	1	Estimated result. Result < CRQL.
Trichloroethene	MW-12	4	J	4	J	10	1	Estimated result. Result < CRQL.
Vinyl chloride	MW-12	5	J	5	J	10	1	Estimated result. Result < CRQL.
1,1-Dichloroethane	MW-17	5	J	5	J	10	1	Estimated result. Result < CRQL.
cis-1,2-Dichloroethene	MW-17	11		11		10	1	No action taken.
Tetrachloroethene	MW-17	3	J	3	J	10	1	Estimated result. Result < CRQL.
Trichloroethene	MW-17	1	J	1	J	10	1	Estimated result. Result < CRQL.
1,1-Dichloroethane	MW-2	85		85		10	1	No action taken.
1,1-Dichloroethene	MW-2	110		110		10	1	No action taken.
Tetrachloroethene	MW-2	5	J	5	J	10	1	Estimated result. Result < CRQL.
1,1,1-Trichloroethane	MW-2	700		700		50	5	No action taken.
Chloroethane	MW-3	11		11		10	1	No action taken.
1,1-Dichloroethane	MW-3	38		38		10	1	No action taken.
cis-1,2-Dichloroethene	MW-3	98		98		10	1	No action taken.
trans-1,2-Dichloroethene	MW-3	1	J	1	J	10	1	Estimated result. Result < CRQL.
Tetrachloroethene	MW-3	6	J	6	J	10	1	Estimated result. Result < CRQL.
Trichloroethene	MW-3	5	J	5	J	10	1	Estimated result. Result < CRQL.
Vinyl chloride	MW-3	8	J	8	J	10	1	Estimated result. Result < CRQL.
Chloroethane	MW-8	11		11		10	1	No action taken.
1,1-Dichloroethane	MW-8	11		11		10	1	No action taken.
cis-1,2-Dichloroethene	MW-8	6	J	6	J	10	1	Estimated result. Result < CRQL.
Tetrachloroethene	MW-8	2	J	2	J	10	1	Estimated result. Result < CRQL.
Trichloroethene	MW-8	2	J	2	J	10	1	Estimated result. Result < CRQL.

Definitions: **LOQ** Denotes laboratory limit of quantitation. **CRQL** Denotes laboratory contract required quantitation limit.
U Denotes analyte not detected above LOQ/CRQL. **J** Denotes analyte is estimated. When used with a "U" (i.e., "UJ"), denotes analyte not detected above LOQ/CRQL and LOQ/CRQL is estimated.
B Denotes result attributed to blank contamination. **R** Denotes result rejected. Target analytes not listed above were not detected above the laboratory detection limit LOQ/CRQL and no data qualification was required. For method reference CLP SOW-use CRQL.

Data Validation Report for GC/MS Fraction. Monitoring Event: 4/5/2006

Watauga County Landfill

Draper Aden Associates
Engineering ♦ Surveying ♦ Environmental Services

Analyte	Sample ID	Laboratory Results (ug/L)		Validated Results (ug/L)		LOQ/CRQL (ug/L)	Dilution	Validation Notes
Method: OLM04.3	***Laboratory: CompuChem, a Division of Liberty Analytical, Cary, NC***							
Benzene	MW-9	3	J	3	J	10	1	Estimated result. Result < CRQL.
Chloroethane	MW-9	7	J	7	J	10	1	Estimated result. Result < CRQL.
Dichlorodifluoromethane	MW-9	2	J	2	J	10	1	Estimated result. Result < CRQL.
1,1-Dichloroethane	MW-9	20		20		10	1	No action taken.
cis-1,2-Dichloroethene	MW-9	11		11		10	1	No action taken.
Tetrachloroethene	MW-9	1	J	1	J	10	1	Estimated result. Result < CRQL.
Trichloroethene	MW-9	2	J	2	J	10	1	Estimated result. Result < CRQL.
Benzene	S-2	1	J	1	J	10	1	Estimated result. Result < CRQL.
Chloroethane	S-2	39		39		10	1	No action taken.
1,1-Dichloroethane	S-2	7	J	7	J	10	1	Estimated result. Result < CRQL.
cis-1,2-Dichloroethene	S-2	2	J	2	J	10	1	Estimated result. Result < CRQL.
Methylene chloride	S-2	1	J	1	J	10	1	Estimated result. Result < CRQL.
1,1-Dichloroethane	S-4	3	J	3	J	10	1	Estimated result. Result < CRQL.
cis-1,2-Dichloroethene	S-4	7	J	7	J	10	1	Estimated result. Result < CRQL.
Dichlorodifluoromethane	S-5	4	J	4	J	10	1	Estimated result. Result < CRQL.

Definitions: LOQ Denotes laboratory limit of quantitation. **CRQL** Denotes laboratory contract required quantitation limit.
U Denotes analyte not detected above LOQ/CRQL. **J** Denotes analyte is estimated. When used with a "U" (i.e., "UJ"), denotes analyte not detected above LOQ/CRQL and LOQ/CRQL is estimated.
B Denotes result attributed to blank contamination. **R** Denotes result rejected. Target analytes not listed above were not detected above the laboratory detection limit LOQ/CRQL and no data qualification was required. For method reference CLP SOW-use CRQL.

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-12

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953305

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953305B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
75-01-4	Vinyl Chloride	5	J
75-00-3	Chloroethane	12	
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	34	
156-59-2	cis-1,2-Dichloroethene	61	
71-55-6	1,1,1-Trichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	4	J
127-18-4	Tetrachloroethene	5	J

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-12

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953305

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953305B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.07	6	J
2.	60-29-7	ETHYL ETHER	6.47	22	NJ
3.		UNKNOWN	8.79	10	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-17

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953306

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953306B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	5	J
156-59-2	cis-1,2-Dichloroethene	11	
71-55-6	1,1,1-Trichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	1	J
127-18-4	Tetrachloroethene	3	J

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-17

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953306

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953306B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-2

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953302

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953302B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND		CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	✓	10	U
75-01-4	Vinyl Chloride	✓	10	U
75-00-3	Chloroethane	✓	10	U
75-35-4	1,1-Dichloroethene	✓	110	
75-09-2	Methylene Chloride	✓	10	U
156-60-5	trans-1,2-Dichloroethene	✓	10	U
75-34-3	1,1-Dichloroethane	✓	85	
156-59-2	cis-1,2-Dichloroethene	✓	10	U
71-55-6	1,1,1-Trichloroethane	✓	100 530	E
71-43-2	Benzene	✓	10	U
79-01-6	Trichloroethene	✓	10	U
127-18-4	Tetrachloroethene	✓	5	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-2

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953302

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953302B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.80	6	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-2DL

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953302

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953302DB73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	50	U
75-01-4	Vinyl Chloride	50	U
75-00-3	Chloroethane	50	U
75-35-4	1,1-Dichloroethene	150	D
75-09-2	Methylene Chloride	50	U
156-60-5	trans-1,2-Dichloroethene	50	U
75-34-3	1,1-Dichloroethane	110	D
156-59-2	cis-1,2-Dichloroethene	50	U
71-55-6	1,1,1-Trichloroethane	700	D
71-43-2	Benzene	50	U
79-01-6	Trichloroethene	50	U
127-18-4	Tetrachloroethene	7	DJ

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-2DL

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953302

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953302DB73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-3

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953301

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953301B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
75-01-4	Vinyl Chloride	8	J
75-00-3	Chloroethane	11	
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	1	J
75-34-3	1,1-Dichloroethane	38	
156-59-2	cis-1,2-Dichloroethene	98	
71-55-6	1,1,1-Trichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	5	J
127-18-4	Tetrachloroethene	6	J

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EPA SAMPLE NO.

MW-3

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953301

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953301B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	60-29-7	ETHYL ETHER	6.47	25	NJ
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-3MS

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 98951

Sample wt/vol: 5 (g/mL) ML Lab File ID: 98951B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/18/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	46	
75-01-4	Vinyl Chloride	50	
75-00-3	Chloroethane	55	
75-35-4	1,1-Dichloroethene	46	
75-09-2	Methylene Chloride	48	
156-60-5	trans-1,2-Dichloroethene	47	
75-34-3	1,1-Dichloroethane	82	
156-59-2	cis-1,2-Dichloroethene	140	
71-55-6	1,1,1-Trichloroethane	48	
71-43-2	Benzene	49	
79-01-6	Trichloroethene	52	
127-18-4	Tetrachloroethene	52	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-3MSD

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 98952

Sample wt/vol: 5 (g/mL) ML Lab File ID: 98952B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/18/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	46	
75-01-4	Vinyl Chloride	53	
75-00-3	Chloroethane	56	
75-35-4	1,1-Dichloroethene	47	
75-09-2	Methylene Chloride	50	
156-60-5	trans-1,2-Dichloroethene	49	
75-34-3	1,1-Dichloroethane	84	
156-59-2	cis-1,2-Dichloroethene	140	
71-55-6	1,1,1-Trichloroethane	48	
71-43-2	Benzene	49	
79-01-6	Trichloroethene	52	
127-18-4	Tetrachloroethene	52	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953303

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953303B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	11	
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	11	
156-59-2	cis-1,2-Dichloroethene	6	J
71-55-6	1,1,1-Trichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	2	J
127-18-4	Tetrachloroethene	2	J

1F

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-8

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953303

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953303B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.07	5	J
2.	60-29-7	ETHYL ETHER	6.48	20	NJ
3.	1066-40-6	SILANOL, TRIMETHYL-	8.79	29	NJ
4.					
5.					
6.					
7.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-9

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953304

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953304B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	2	J
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	7	J
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	20	
156-59-2	cis-1,2-Dichloroethene	11	
71-55-6	1,1,1-Trichloroethane	10	U
71-43-2	Benzene	3	J
79-01-6	Trichloroethene	2	J
127-18-4	Tetrachloroethene	1	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S-1

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953308

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953308B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
127-18-4	Tetrachloroethene	10	U

1F

EPA SAMPLE NO.

S-1

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953308

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953308B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.79	6	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S-2

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953309

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953309B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	39	
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	1	J
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	7	J
156-59-2	cis-1,2-Dichloroethene	2	J
71-55-6	1,1,1-Trichloroethane	10	U
71-43-2	Benzene	1	J
79-01-6	Trichloroethene	10	U
127-18-4	Tetrachloroethene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

S-2

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953309

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953309B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	3.97	7	J
2.		UNKNOWN	4.07	10	J
3.		UNKNOWN	4.66	7	J
4.		UNKNOWN	6.26	7	J
5.	60-29-7	ETHYL ETHER	6.48	20	NJ
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S-3

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953310

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953310B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
127-18-4	Tetrachloroethene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

S-3

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953310

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953310B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
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9.					
10.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S-4

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 952211

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953311B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	3	J
156-59-2	cis-1,2-Dichloroethene	7	J
71-55-6	1,1,1-Trichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
127-18-4	Tetrachloroethene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

S-4

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 952211

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953311B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S-5

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 952212

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953312B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4	J
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
127-18-4	Tetrachloroethene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

S-5

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 952212

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953312B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
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10.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S-6

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 952213

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953313B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/09/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
127-18-4	Tetrachloroethene	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

S-6

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 952213

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953313B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/09/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953307

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953307B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
127-18-4	Tetrachloroethene	10	U

1F

EPA SAMPLE NO.

TRIP BLANK

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 9533

Matrix: (soil/water) WATER Lab Sample ID: 953307

Sample wt/vol: 5 (g/mL) ML Lab File ID: 953307B73

Level: (low/med) LOW Date Received: 04/07/06

% Moisture: not dec. _____ Date Analyzed: 04/08/06

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.79	8	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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30.					

Lancaster Laboratories

RECEIVED
APR 24 2006
By

ANALYTICAL RESULTS

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

540-552-0444

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 984786. Samples arrived at the laboratory on Friday, April 07, 2006.

Client Description	Lancaster Labs Number
RES-1 Grab Water Sample	4745821
H&G_Produce Grab Water Sample	4745822
RES-15 Grab Water Sample	4745823
RES-16 Grab Water Sample	4745824
BREMCO Grab Water Sample	4745825
Trip_Blank Water Sample	4745826

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Draper Aden Associates, Inc.	Attn: Janet Frazier
1 COPY TO	Data Package Group	

Lancaster Laboratories

Questions? Contact your Client Services Representative
Barbara A Weyandt at (717) 656-2300

Respectfully Submitted,

Robin C. Runkle
Senior Specialist

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 984786
Reported: 04/19/06 at 03:55 PM

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Benzene	< 0.5	0.5	ug/l	107		70-130		
1,2-Dichloroethane	< 0.5	0.5	ug/l	105		70-130		
Trichloroethene	< 0.5	0.5	ug/l	101		70-130		
1,2-Dichloropropane	< 0.5	0.5	ug/l	103		70-130		
Bromodichloromethane	< 0.5	0.5	ug/l	103		70-130		
Toluene	< 0.5	0.5	ug/l	101		70-130		
1,1,2-Trichloroethane	< 0.5	0.5	ug/l	101		70-130		
Tetrachloroethene	< 0.5	0.5	ug/l	103		70-130		
Dibromochloromethane	< 0.5	0.5	ug/l	104		70-130		
Chlorobenzene	< 0.5	0.5	ug/l	104		70-130		
Ethylbenzene	< 0.5	0.5	ug/l	105		70-130		
Styrene	< 0.5	0.5	ug/l	104		70-130		
Bromoform	< 0.5	0.5	ug/l	99		70-130		
1,1,2,2-Tetrachloroethane	< 0.5	0.5	ug/l	97		70-130		

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: EPA Method 524.2
Batch number: S061021AA

	4-Bromofluorobenzene	1,2-Dichlorobenzene-d4
4745821	95	92
4745822	100	93
4745823	98	96
4745824	100	93
4745825	104	100
4745826	104	99
Blank	102	104
LCS	99	95
Limits:	80-120	80-120

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. PW 4745821

RES-1 Grab Water Sample
March 2006 Semiannual Assess. Monitoring Event
Watauga County Landfill
Collected:04/05/2006 12:20 by CB

Account Number: 11200

Submitted: 04/07/2006 09:35
Reported: 04/19/2006 at 15:54
Discard: 05/20/2006

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RES-1 SDG#: WAT02-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
03643	EPA Method 524.2					
00328	1,1,1,2-Tetrachloroethane	630-20-6	< 0.5	0.5	ug/l	1
00498	Dichlorodifluoromethane	75-71-8	< 0.5	0.5	ug/l	1
00503	2,2-Dichloropropane	594-20-7	< 0.5	0.5	ug/l	1
00891	cis-1,2-Dichloroethene	156-59-2	< 0.5	0.5	ug/l	1
00892	Bromochloromethane	74-97-5	< 0.5	0.5	ug/l	1
00978	1,1-Dichloropropene	563-58-6	< 0.5	0.5	ug/l	1
00979	Dibromomethane	74-95-3	< 0.5	0.5	ug/l	1
00980	1,3-Dichloropropane	142-28-9	< 0.5	0.5	ug/l	1
00981	1,2-Dibromoethane	106-93-4	< 0.5	0.5	ug/l	1
00983	m+p-Xylene	1330-20-7	< 0.5	0.5	ug/l	1
00985	o-Xylene	95-47-6	< 0.5	0.5	ug/l	1
00986	Isopropylbenzene	98-82-8	< 0.5	0.5	ug/l	1
00987	Bromobenzene	108-86-1	< 0.5	0.5	ug/l	1
00988	1,2,3-Trichloropropane	96-18-4	< 0.5	0.5	ug/l	1
00989	n-Propylbenzene	103-65-1	< 0.5	0.5	ug/l	1
00990	2-Chlorotoluene	95-49-8	< 0.5	0.5	ug/l	1
00991	1,3,5-Trimethylbenzene	108-67-8	< 0.5	0.5	ug/l	1
00992	4-Chlorotoluene	106-43-4	< 0.5	0.5	ug/l	1
00993	tert-Butylbenzene	98-06-6	< 0.5	0.5	ug/l	1
00994	1,2,4-Trimethylbenzene	95-63-6	< 0.5	0.5	ug/l	1
00995	sec-Butylbenzene	135-98-8	< 0.5	0.5	ug/l	1
00996	p-Isopropyltoluene	99-87-6	< 0.5	0.5	ug/l	1
00997	1,3-Dichlorobenzene	541-73-1	< 0.5	0.5	ug/l	1
00998	1,4-Dichlorobenzene	106-46-7	< 0.5	0.5	ug/l	1
00999	n-Butylbenzene	104-51-8	< 0.5	0.5	ug/l	1
01000	1,2-Dichlorobenzene	95-50-1	< 0.5	0.5	ug/l	1
01001	1,2-Dibromo-3-chloropropane	96-12-8	< 0.5	0.5	ug/l	1
01002	1,2,4-Trichlorobenzene	120-82-1	< 0.5	0.5	ug/l	1
01003	Hexachlorobutadiene	87-68-3	< 0.5	0.5	ug/l	1
01004	Naphthalene	91-20-3	< 0.5	0.5	ug/l	1
01005	1,2,3-Trichlorobenzene	87-61-6	< 0.5	0.5	ug/l	1
03397	trans-1,3-Dichloropropene	10061-02-6	< 0.5	0.5	ug/l	1
03398	cis-1,3-Dichloropropene	10061-01-5	< 0.5	0.5	ug/l	1
03399	Chloromethane	74-87-3	< 0.5	0.5	ug/l	1
03400	Bromomethane	74-83-9	< 0.5	0.5	ug/l	1
03401	Vinyl Chloride	75-01-4	< 0.5	0.5	ug/l	1
03402	Chloroethane	75-00-3	< 0.5	0.5	ug/l	1
03403	Trichlorofluoromethane	75-69-4	< 0.5	0.5	ug/l	1

Lancaster Laboratories

Lancaster Laboratories Sample No. PW 4745821

RES-1 Grab Water Sample
March 2006 Semiannual Assess. Monitoring Event
Watauga County Landfill
Collected:04/05/2006 12:20 by CB

Account Number: 11200

Submitted: 04/07/2006 09:35
Reported: 04/19/2006 at 15:54
Discard: 05/20/2006

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RES-1 SDG#: WAT02-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
03404	1,1-Dichloroethene	75-35-4	< 0.5	0.5	ug/l	1
03405	Methylene Chloride	75-09-2	0.8	0.5	ug/l	1
03406	trans-1,2-Dichloroethene	156-60-5	< 0.5	0.5	ug/l	1
03407	1,1-Dichloroethane	75-34-3	< 0.5	0.5	ug/l	1
03408	Chloroform	67-66-3	< 0.5	0.5	ug/l	1
03409	1,1,1-Trichloroethane	71-55-6	< 0.5	0.5	ug/l	1
03410	Carbon Tetrachloride	56-23-5	< 0.5	0.5	ug/l	1
03411	Benzene	71-43-2	< 0.5	0.5	ug/l	1
03412	1,2-Dichloroethane	107-06-2	< 0.5	0.5	ug/l	1
03413	Trichloroethene	79-01-6	< 0.5	0.5	ug/l	1
03414	1,2-Dichloropropane	78-87-5	< 0.5	0.5	ug/l	1
03415	Bromodichloromethane	75-27-4	< 0.5	0.5	ug/l	1
03416	Toluene	108-88-3	< 0.5	0.5	ug/l	1
03417	1,1,2-Trichloroethane	79-00-5	< 0.5	0.5	ug/l	1
03418	Tetrachloroethene	127-18-4	< 0.5	0.5	ug/l	1
03419	Dibromochloromethane	124-48-1	< 0.5	0.5	ug/l	1
03420	Chlorobenzene	108-90-7	< 0.5	0.5	ug/l	1
03421	Ethylbenzene	100-41-4	< 0.5	0.5	ug/l	1
03422	Styrene	100-42-5	< 0.5	0.5	ug/l	1
03423	Bromoform	75-25-2	< 0.5	0.5	ug/l	1
03424	1,1,2,2-Tetrachloroethane	79-34-5	< 0.5	0.5	ug/l	1

The laboratory is NC DHHS certified for all SDWA regulated compounds reported (Lab ID 42705). North Carolina Department of Health and Human Services does not offer certification for unregulated compounds.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
03643	EPA Method 524.2	EPA 524.2 Rev. 4.1	1	04/12/2006 17:16	Shawn J Rice	1

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. PW 4745822

H&G_Produce Grab Water Sample
March 2006 Semiannual Assess. Monitoring Event
Watauga County Landfill
Collected:04/05/2006 12:05 by CB

Account Number: 11200

Submitted: 04/07/2006 09:35
Reported: 04/19/2006 at 15:54
Discard: 05/20/2006

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

HGPRO SDG#: WAT02-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
03643	EPA Method 524.2					
00328	1,1,1,2-Tetrachloroethane	630-20-6	< 0.5	0.5	ug/l	1
00498	Dichlorodifluoromethane	75-71-8	< 0.5	0.5	ug/l	1
00503	2,2-Dichloropropane	594-20-7	< 0.5	0.5	ug/l	1
00891	cis-1,2-Dichloroethene	156-59-2	< 0.5	0.5	ug/l	1
00892	Bromochloromethane	74-97-5	< 0.5	0.5	ug/l	1
00978	1,1-Dichloropropene	563-58-6	< 0.5	0.5	ug/l	1
00979	Dibromomethane	74-95-3	< 0.5	0.5	ug/l	1
00980	1,3-Dichloropropane	142-28-9	< 0.5	0.5	ug/l	1
00981	1,2-Dibromoethane	106-93-4	< 0.5	0.5	ug/l	1
00983	m+p-Xylene	1330-20-7	< 0.5	0.5	ug/l	1
00985	o-Xylene	95-47-6	< 0.5	0.5	ug/l	1
00986	Isopropylbenzene	98-82-8	< 0.5	0.5	ug/l	1
00987	Bromobenzene	108-86-1	< 0.5	0.5	ug/l	1
00988	1,2,3-Trichloropropane	96-18-4	< 0.5	0.5	ug/l	1
00989	n-Propylbenzene	103-65-1	< 0.5	0.5	ug/l	1
00990	2-Chlorotoluene	95-49-8	< 0.5	0.5	ug/l	1
00991	1,3,5-Trimethylbenzene	108-67-8	< 0.5	0.5	ug/l	1
00992	4-Chlorotoluene	106-43-4	< 0.5	0.5	ug/l	1
00993	tert-Butylbenzene	98-06-6	< 0.5	0.5	ug/l	1
00994	1,2,4-Trimethylbenzene	95-63-6	< 0.5	0.5	ug/l	1
00995	sec-Butylbenzene	135-98-8	< 0.5	0.5	ug/l	1
00996	p-Isopropyltoluene	99-87-6	< 0.5	0.5	ug/l	1
00997	1,3-Dichlorobenzene	541-73-1	< 0.5	0.5	ug/l	1
00998	1,4-Dichlorobenzene	106-46-7	< 0.5	0.5	ug/l	1
00999	n-Butylbenzene	104-51-8	< 0.5	0.5	ug/l	1
01000	1,2-Dichlorobenzene	95-50-1	< 0.5	0.5	ug/l	1
01001	1,2-Dibromo-3-chloropropane	96-12-8	< 0.5	0.5	ug/l	1
01002	1,2,4-Trichlorobenzene	120-82-1	< 0.5	0.5	ug/l	1
01003	Hexachlorobutadiene	87-68-3	< 0.5	0.5	ug/l	1
01004	Naphthalene	91-20-3	< 0.5	0.5	ug/l	1
01005	1,2,3-Trichlorobenzene	87-61-6	< 0.5	0.5	ug/l	1
03397	trans-1,3-Dichloropropene	10061-02-6	< 0.5	0.5	ug/l	1
03398	cis-1,3-Dichloropropene	10061-01-5	< 0.5	0.5	ug/l	1
03399	Chloromethane	74-87-3	< 0.5	0.5	ug/l	1
03400	Bromomethane	74-83-9	< 0.5	0.5	ug/l	1
03401	Vinyl Chloride	75-01-4	< 0.5	0.5	ug/l	1
03402	Chloroethane	75-00-3	< 0.5	0.5	ug/l	1
03403	Trichlorofluoromethane	75-69-4	< 0.5	0.5	ug/l	1

Lancaster Laboratories

Lancaster Laboratories Sample No. PW 4745822

H&G_Produce Grab Water Sample
March 2006 Semiannual Assess. Monitoring Event
Watauga County Landfill
Collected:04/05/2006 12:05 by CB

Account Number: 11200

Submitted: 04/07/2006 09:35
Reported: 04/19/2006 at 15:54
Discard: 05/20/2006

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

HGPRO SDG#: WAT02-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
03404	1,1-Dichloroethene	75-35-4	< 0.5	0.5	ug/l	1
03405	Methylene Chloride	75-09-2	0.8	0.5	ug/l	1
03406	trans-1,2-Dichloroethene	156-60-5	< 0.5	0.5	ug/l	1
03407	1,1-Dichloroethane	75-34-3	< 0.5	0.5	ug/l	1
03408	Chloroform	67-66-3	< 0.5	0.5	ug/l	1
03409	1,1,1-Trichloroethane	71-55-6	< 0.5	0.5	ug/l	1
03410	Carbon Tetrachloride	56-23-5	< 0.5	0.5	ug/l	1
03411	Benzene	71-43-2	< 0.5	0.5	ug/l	1
03412	1,2-Dichloroethane	107-06-2	< 0.5	0.5	ug/l	1
03413	Trichloroethene	79-01-6	< 0.5	0.5	ug/l	1
03414	1,2-Dichloropropane	78-87-5	< 0.5	0.5	ug/l	1
03415	Bromodichloromethane	75-27-4	< 0.5	0.5	ug/l	1
03416	Toluene	108-88-3	< 0.5	0.5	ug/l	1
03417	1,1,2-Trichloroethane	79-00-5	< 0.5	0.5	ug/l	1
03418	Tetrachloroethene	127-18-4	< 0.5	0.5	ug/l	1
03419	Dibromochloromethane	124-48-1	< 0.5	0.5	ug/l	1
03420	Chlorobenzene	108-90-7	< 0.5	0.5	ug/l	1
03421	Ethylbenzene	100-41-4	< 0.5	0.5	ug/l	1
03422	Styrene	100-42-5	< 0.5	0.5	ug/l	1
03423	Bromoform	75-25-2	< 0.5	0.5	ug/l	1
03424	1,1,2,2-Tetrachloroethane	79-34-5	< 0.5	0.5	ug/l	1

The laboratory is NC DHHS certified for all SDWA regulated compounds reported (Lab ID 42705). North Carolina Department of Health and Human Services does not offer certification for unregulated compounds.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
03643	EPA Method 524.2	EPA 524.2 Rev. 4.1	1	04/12/2006 17:42	Shawn J Rice	1

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. PW 4745823

RES-15 Grab Water Sample
March 2006 Semiannual Assess. Monitoring Event
Watauga County Landfill
Collected:04/05/2006 11:55 by CB

Account Number: 11200

Submitted: 04/07/2006 09:35
Reported: 04/19/2006 at 15:54
Discard: 05/20/2006

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RES15 SDG#: WAT02-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
03643	EPA Method 524.2					
00328	1,1,1,2-Tetrachloroethane	630-20-6	< 0.5	0.5	ug/l	1
00498	Dichlorodifluoromethane	75-71-8	< 0.5	0.5	ug/l	1
00503	2,2-Dichloropropane	594-20-7	< 0.5	0.5	ug/l	1
00891	cis-1,2-Dichloroethene	156-59-2	< 0.5	0.5	ug/l	1
00892	Bromochloromethane	74-97-5	< 0.5	0.5	ug/l	1
00978	1,1-Dichloropropene	563-58-6	< 0.5	0.5	ug/l	1
00979	Dibromomethane	74-95-3	< 0.5	0.5	ug/l	1
00980	1,3-Dichloropropane	142-28-9	< 0.5	0.5	ug/l	1
00981	1,2-Dibromoethane	106-93-4	< 0.5	0.5	ug/l	1
00983	m+p-Xylene	1330-20-7	< 0.5	0.5	ug/l	1
00985	o-Xylene	95-47-6	< 0.5	0.5	ug/l	1
00986	Isopropylbenzene	98-82-8	< 0.5	0.5	ug/l	1
00987	Bromobenzene	108-86-1	< 0.5	0.5	ug/l	1
00988	1,2,3-Trichloropropane	96-18-4	< 0.5	0.5	ug/l	1
00989	n-Propylbenzene	103-65-1	< 0.5	0.5	ug/l	1
00990	2-Chlorotoluene	95-49-8	< 0.5	0.5	ug/l	1
00991	1,3,5-Trimethylbenzene	108-67-8	< 0.5	0.5	ug/l	1
00992	4-Chlorotoluene	106-43-4	< 0.5	0.5	ug/l	1
00993	tert-Butylbenzene	98-06-6	< 0.5	0.5	ug/l	1
00994	1,2,4-Trimethylbenzene	95-63-6	< 0.5	0.5	ug/l	1
00995	sec-Butylbenzene	135-98-8	< 0.5	0.5	ug/l	1
00996	p-Isopropyltoluene	99-87-6	< 0.5	0.5	ug/l	1
00997	1,3-Dichlorobenzene	541-73-1	< 0.5	0.5	ug/l	1
00998	1,4-Dichlorobenzene	106-46-7	< 0.5	0.5	ug/l	1
00999	n-Butylbenzene	104-51-8	< 0.5	0.5	ug/l	1
01000	1,2-Dichlorobenzene	95-50-1	< 0.5	0.5	ug/l	1
01001	1,2-Dibromo-3-chloropropane	96-12-8	< 0.5	0.5	ug/l	1
01002	1,2,4-Trichlorobenzene	120-82-1	< 0.5	0.5	ug/l	1
01003	Hexachlorobutadiene	87-68-3	< 0.5	0.5	ug/l	1
01004	Naphthalene	91-20-3	< 0.5	0.5	ug/l	1
01005	1,2,3-Trichlorobenzene	87-61-6	< 0.5	0.5	ug/l	1
03397	trans-1,3-Dichloropropene	10061-02-6	< 0.5	0.5	ug/l	1
03398	cis-1,3-Dichloropropene	10061-01-5	< 0.5	0.5	ug/l	1
03399	Chloromethane	74-87-3	< 0.5	0.5	ug/l	1
03400	Bromomethane	74-83-9	< 0.5	0.5	ug/l	1
03401	Vinyl Chloride	75-01-4	< 0.5	0.5	ug/l	1
03402	Chloroethane	75-00-3	< 0.5	0.5	ug/l	1
03403	Trichlorofluoromethane	75-69-4	< 0.5	0.5	ug/l	1

Lancaster Laboratories

Lancaster Laboratories Sample No. PW 4745823

RES-15 Grab Water Sample
March 2006 Semiannual Assess. Monitoring Event
Watauga County Landfill
Collected:04/05/2006 11:55 by CB

Account Number: 11200

Submitted: 04/07/2006 09:35
Reported: 04/19/2006 at 15:54
Discard: 05/20/2006

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RES15 SDG#: WAT02-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
03404	1,1-Dichloroethene	75-35-4	< 0.5	0.5	ug/l	1
03405	Methylene Chloride	75-09-2	0.8	0.5	ug/l	1
03406	trans-1,2-Dichloroethene	156-60-5	< 0.5	0.5	ug/l	1
03407	1,1-Dichloroethane	75-34-3	< 0.5	0.5	ug/l	1
03408	Chloroform	67-66-3	< 0.5	0.5	ug/l	1
03409	1,1,1-Trichloroethane	71-55-6	< 0.5	0.5	ug/l	1
03410	Carbon Tetrachloride	56-23-5	< 0.5	0.5	ug/l	1
03411	Benzene	71-43-2	< 0.5	0.5	ug/l	1
03412	1,2-Dichloroethane	107-06-2	< 0.5	0.5	ug/l	1
03413	Trichloroethene	79-01-6	< 0.5	0.5	ug/l	1
03414	1,2-Dichloropropane	78-87-5	< 0.5	0.5	ug/l	1
03415	Bromodichloromethane	75-27-4	< 0.5	0.5	ug/l	1
03416	Toluene	108-88-3	< 0.5	0.5	ug/l	1
03417	1,1,2-Trichloroethane	79-00-5	< 0.5	0.5	ug/l	1
03418	Tetrachloroethene	127-18-4	< 0.5	0.5	ug/l	1
03419	Dibromochloromethane	124-48-1	< 0.5	0.5	ug/l	1
03420	Chlorobenzene	108-90-7	< 0.5	0.5	ug/l	1
03421	Ethylbenzene	100-41-4	< 0.5	0.5	ug/l	1
03422	Styrene	100-42-5	< 0.5	0.5	ug/l	1
03423	Bromoform	75-25-2	< 0.5	0.5	ug/l	1
03424	1,1,2,2-Tetrachloroethane	79-34-5	< 0.5	0.5	ug/l	1

The laboratory is NC DHHS certified for all SDWA regulated compounds reported (Lab ID 42705). North Carolina Department of Health and Human Services does not offer certification for unregulated compounds.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
03643	EPA Method 524.2	EPA 524.2 Rev. 4.1	1	04/12/2006 18:07	Shawn J Rice	1

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. PW 4745824

RES-16 Grab Water Sample
March 2006 Semiannual Assess. Monitoring Event
Watauga County Landfill
Collected:04/05/2006 11:50 by CB

Account Number: 11200

Submitted: 04/07/2006 09:35
Reported: 04/19/2006 at 15:54
Discard: 05/20/2006

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RES16 SDG#: WAT02-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
03643	EPA Method 524.2					
00328	1,1,1,2-Tetrachloroethane	630-20-6	< 0.5	0.5	ug/l	1
00498	Dichlorodifluoromethane	75-71-8	< 0.5	0.5	ug/l	1
00503	2,2-Dichloropropane	594-20-7	< 0.5	0.5	ug/l	1
00891	cis-1,2-Dichloroethene	156-59-2	< 0.5	0.5	ug/l	1
00892	Bromochloromethane	74-97-5	< 0.5	0.5	ug/l	1
00978	1,1-Dichloropropene	563-58-6	< 0.5	0.5	ug/l	1
00979	Dibromomethane	74-95-3	< 0.5	0.5	ug/l	1
00980	1,3-Dichloropropane	142-28-9	< 0.5	0.5	ug/l	1
00981	1,2-Dibromoethane	106-93-4	< 0.5	0.5	ug/l	1
00983	m+p-Xylene	1330-20-7	< 0.5	0.5	ug/l	1
00985	o-Xylene	95-47-6	< 0.5	0.5	ug/l	1
00986	Isopropylbenzene	98-82-8	< 0.5	0.5	ug/l	1
00987	Bromobenzene	108-86-1	< 0.5	0.5	ug/l	1
00988	1,2,3-Trichloropropane	96-18-4	< 0.5	0.5	ug/l	1
00989	n-Propylbenzene	103-65-1	< 0.5	0.5	ug/l	1
00990	2-Chlorotoluene	95-49-8	< 0.5	0.5	ug/l	1
00991	1,3,5-Trimethylbenzene	108-67-8	< 0.5	0.5	ug/l	1
00992	4-Chlorotoluene	106-43-4	< 0.5	0.5	ug/l	1
00993	tert-Butylbenzene	98-06-6	< 0.5	0.5	ug/l	1
00994	1,2,4-Trimethylbenzene	95-63-6	< 0.5	0.5	ug/l	1
00995	sec-Butylbenzene	135-98-8	< 0.5	0.5	ug/l	1
00996	p-Isopropyltoluene	99-87-6	< 0.5	0.5	ug/l	1
00997	1,3-Dichlorobenzene	541-73-1	< 0.5	0.5	ug/l	1
00998	1,4-Dichlorobenzene	106-46-7	< 0.5	0.5	ug/l	1
00999	n-Butylbenzene	104-51-8	< 0.5	0.5	ug/l	1
01000	1,2-Dichlorobenzene	95-50-1	< 0.5	0.5	ug/l	1
01001	1,2-Dibromo-3-chloropropane	96-12-8	< 0.5	0.5	ug/l	1
01002	1,2,4-Trichlorobenzene	120-82-1	< 0.5	0.5	ug/l	1
01003	Hexachlorobutadiene	87-68-3	< 0.5	0.5	ug/l	1
01004	Naphthalene	91-20-3	< 0.5	0.5	ug/l	1
01005	1,2,3-Trichlorobenzene	87-61-6	< 0.5	0.5	ug/l	1
03397	trans-1,3-Dichloropropene	10061-02-6	< 0.5	0.5	ug/l	1
03398	cis-1,3-Dichloropropene	10061-01-5	< 0.5	0.5	ug/l	1
03399	Chloromethane	74-87-3	< 0.5	0.5	ug/l	1
03400	Bromomethane	74-83-9	< 0.5	0.5	ug/l	1
03401	Vinyl Chloride	75-01-4	< 0.5	0.5	ug/l	1
03402	Chloroethane	75-00-3	< 0.5	0.5	ug/l	1
03403	Trichlorofluoromethane	75-69-4	< 0.5	0.5	ug/l	1

Lancaster Laboratories

Lancaster Laboratories Sample No. PW 4745824

RES-16 Grab Water Sample
March 2006 Semiannual Assess. Monitoring Event
Watauga County Landfill
Collected:04/05/2006 11:50 by CB

Account Number: 11200

Submitted: 04/07/2006 09:35
Reported: 04/19/2006 at 15:54
Discard: 05/20/2006

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

RES16 SDG#: WAT02-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
03404	1,1-Dichloroethene	75-35-4	< 0.5	0.5	ug/l	1
03405	Methylene Chloride	75-09-2	0.8	0.5	ug/l	1
03406	trans-1,2-Dichloroethene	156-60-5	< 0.5	0.5	ug/l	1
03407	1,1-Dichloroethane	75-34-3	< 0.5	0.5	ug/l	1
03408	Chloroform	67-66-3	< 0.5	0.5	ug/l	1
03409	1,1,1-Trichloroethane	71-55-6	< 0.5	0.5	ug/l	1
03410	Carbon Tetrachloride	56-23-5	< 0.5	0.5	ug/l	1
03411	Benzene	71-43-2	< 0.5	0.5	ug/l	1
03412	1,2-Dichloroethane	107-06-2	< 0.5	0.5	ug/l	1
03413	Trichloroethene	79-01-6	< 0.5	0.5	ug/l	1
03414	1,2-Dichloropropane	78-87-5	< 0.5	0.5	ug/l	1
03415	Bromodichloromethane	75-27-4	< 0.5	0.5	ug/l	1
03416	Toluene	108-88-3	< 0.5	0.5	ug/l	1
03417	1,1,2-Trichloroethane	79-00-5	< 0.5	0.5	ug/l	1
03418	Tetrachloroethene	127-18-4	< 0.5	0.5	ug/l	1
03419	Dibromochloromethane	124-48-1	< 0.5	0.5	ug/l	1
03420	Chlorobenzene	108-90-7	< 0.5	0.5	ug/l	1
03421	Ethylbenzene	100-41-4	< 0.5	0.5	ug/l	1
03422	Styrene	100-42-5	< 0.5	0.5	ug/l	1
03423	Bromoform	75-25-2	< 0.5	0.5	ug/l	1
03424	1,1,2,2-Tetrachloroethane	79-34-5	< 0.5	0.5	ug/l	1

The laboratory is NC DHHS certified for all SDWA regulated compounds reported (Lab ID 42705). North Carolina Department of Health and Human Services does not offer certification for unregulated compounds.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
03643	EPA Method 524.2	EPA 524.2 Rev. 4.1	1	04/12/2006 18:33	Shawn J Rice	1

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. PW 4745825

BREMCO Grab Water Sample
March 2006 Semiannual Assess. Monitoring Event
Watauga County Landfill
Collected:04/05/2006 11:30 by CB

Account Number: 11200

Submitted: 04/07/2006 09:35
Reported: 04/19/2006 at 15:54
Discard: 05/20/2006

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

BREMC SDG#: WAT02-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
03643	EPA Method 524.2					
00328	1,1,1,2-Tetrachloroethane	630-20-6	< 0.5	0.5	ug/l	1
00498	Dichlorodifluoromethane	75-71-8	< 0.5	0.5	ug/l	1
00503	2,2-Dichloropropane	594-20-7	< 0.5	0.5	ug/l	1
00891	cis-1,2-Dichloroethene	156-59-2	< 0.5	0.5	ug/l	1
00892	Bromochloromethane	74-97-5	< 0.5	0.5	ug/l	1
00978	1,1-Dichloropropene	563-58-6	< 0.5	0.5	ug/l	1
00979	Dibromomethane	74-95-3	< 0.5	0.5	ug/l	1
00980	1,3-Dichloropropane	142-28-9	< 0.5	0.5	ug/l	1
00981	1,2-Dibromoethane	106-93-4	< 0.5	0.5	ug/l	1
00983	m+p-Xylene	1330-20-7	< 0.5	0.5	ug/l	1
00985	o-Xylene	95-47-6	< 0.5	0.5	ug/l	1
00986	Isopropylbenzene	98-82-8	< 0.5	0.5	ug/l	1
00987	Bromobenzene	108-86-1	< 0.5	0.5	ug/l	1
00988	1,2,3-Trichloropropane	96-18-4	< 0.5	0.5	ug/l	1
00989	n-Propylbenzene	103-65-1	< 0.5	0.5	ug/l	1
00990	2-Chlorotoluene	95-49-8	< 0.5	0.5	ug/l	1
00991	1,3,5-Trimethylbenzene	108-67-8	< 0.5	0.5	ug/l	1
00992	4-Chlorotoluene	106-43-4	< 0.5	0.5	ug/l	1
00993	tert-Butylbenzene	98-06-6	< 0.5	0.5	ug/l	1
00994	1,2,4-Trimethylbenzene	95-63-6	< 0.5	0.5	ug/l	1
00995	sec-Butylbenzene	135-98-8	< 0.5	0.5	ug/l	1
00996	p-Isopropyltoluene	99-87-6	< 0.5	0.5	ug/l	1
00997	1,3-Dichlorobenzene	541-73-1	< 0.5	0.5	ug/l	1
00998	1,4-Dichlorobenzene	106-46-7	< 0.5	0.5	ug/l	1
00999	n-Butylbenzene	104-51-8	< 0.5	0.5	ug/l	1
01000	1,2-Dichlorobenzene	95-50-1	< 0.5	0.5	ug/l	1
01001	1,2-Dibromo-3-chloropropane	96-12-8	< 0.5	0.5	ug/l	1
01002	1,2,4-Trichlorobenzene	120-82-1	< 0.5	0.5	ug/l	1
01003	Hexachlorobutadiene	87-68-3	< 0.5	0.5	ug/l	1
01004	Naphthalene	91-20-3	< 0.5	0.5	ug/l	1
01005	1,2,3-Trichlorobenzene	87-61-6	< 0.5	0.5	ug/l	1
03397	trans-1,3-Dichloropropene	10061-02-6	< 0.5	0.5	ug/l	1
03398	cis-1,3-Dichloropropene	10061-01-5	< 0.5	0.5	ug/l	1
03399	Chloromethane	74-87-3	< 0.5	0.5	ug/l	1
03400	Bromomethane	74-83-9	< 0.5	0.5	ug/l	1
03401	Vinyl Chloride	75-01-4	< 0.5	0.5	ug/l	1
03402	Chloroethane	75-00-3	< 0.5	0.5	ug/l	1
03403	Trichlorofluoromethane	75-69-4	< 0.5	0.5	ug/l	1

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. PW 4745825

BREMCO Grab Water Sample
March 2006 Semiannual Assess. Monitoring Event
Watauga County Landfill
Collected:04/05/2006 11:30 by CB

Account Number: 11200

Submitted: 04/07/2006 09:35
Reported: 04/19/2006 at 15:54
Discard: 05/20/2006

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

BREMC SDG#: WAT02-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
03404	1,1-Dichloroethene	75-35-4	< 0.5	0.5	ug/l	1
03405	Methylene Chloride	75-09-2	0.9	0.5	ug/l	1
03406	trans-1,2-Dichloroethene	156-60-5	< 0.5	0.5	ug/l	1
03407	1,1-Dichloroethane	75-34-3	0.5	0.5	ug/l	1
03408	Chloroform	67-66-3	< 0.5	0.5	ug/l	1
03409	1,1,1-Trichloroethane	71-55-6	< 0.5	0.5	ug/l	1
03410	Carbon Tetrachloride	56-23-5	< 0.5	0.5	ug/l	1
03411	Benzene	71-43-2	< 0.5	0.5	ug/l	1
03412	1,2-Dichloroethane	107-06-2	< 0.5	0.5	ug/l	1
03413	Trichloroethene	79-01-6	< 0.5	0.5	ug/l	1
03414	1,2-Dichloropropane	78-87-5	< 0.5	0.5	ug/l	1
03415	Bromodichloromethane	75-27-4	< 0.5	0.5	ug/l	1
03416	Toluene	108-88-3	< 0.5	0.5	ug/l	1
03417	1,1,2-Trichloroethane	79-00-5	< 0.5	0.5	ug/l	1
03418	Tetrachloroethene	127-18-4	< 0.5	0.5	ug/l	1
03419	Dibromochloromethane	124-48-1	< 0.5	0.5	ug/l	1
03420	Chlorobenzene	108-90-7	< 0.5	0.5	ug/l	1
03421	Ethylbenzene	100-41-4	< 0.5	0.5	ug/l	1
03422	Styrene	100-42-5	< 0.5	0.5	ug/l	1
03423	Bromoform	75-25-2	< 0.5	0.5	ug/l	1
03424	1,1,2,2-Tetrachloroethane	79-34-5	< 0.5	0.5	ug/l	1

The laboratory is NC DHHS certified for all SDWA regulated compounds reported (Lab ID 42705). North Carolina Department of Health and Human Services does not offer certification for unregulated compounds.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
03643	EPA Method 524.2	EPA 524.2 Rev. 4.1	1	04/12/2006 18:59	Shawn J Rice	1

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. PW 4745826

Trip Blank Water Sample
March 2006 Semiannual Assess. Monitoring Event
Watauga County Landfill
Collected:04/04/2006 08:00

Account Number: 11200

Submitted: 04/07/2006 09:35
Reported: 04/19/2006 at 15:55
Discard: 05/20/2006

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

WTGTB SDG#: WAT02-06TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
03643	EPA Method 524.2					
00328	1,1,1,2-Tetrachloroethane	630-20-6	< 0.5	0.5	ug/l	1
00498	Dichlorodifluoromethane	75-71-8	< 0.5	0.5	ug/l	1
00503	2,2-Dichloropropane	594-20-7	< 0.5	0.5	ug/l	1
00891	cis-1,2-Dichloroethene	156-59-2	< 0.5	0.5	ug/l	1
00892	Bromochloromethane	74-97-5	< 0.5	0.5	ug/l	1
00978	1,1-Dichloropropene	563-58-6	< 0.5	0.5	ug/l	1
00979	Dibromomethane	74-95-3	< 0.5	0.5	ug/l	1
00980	1,3-Dichloropropane	142-28-9	< 0.5	0.5	ug/l	1
00981	1,2-Dibromoethane	106-93-4	< 0.5	0.5	ug/l	1
00983	m+p-Xylene	1330-20-7	< 0.5	0.5	ug/l	1
00985	o-Xylene	95-47-6	< 0.5	0.5	ug/l	1
00986	Isopropylbenzene	98-82-8	< 0.5	0.5	ug/l	1
00987	Bromobenzene	108-86-1	< 0.5	0.5	ug/l	1
00988	1,2,3-Trichloropropane	96-18-4	< 0.5	0.5	ug/l	1
00989	n-Propylbenzene	103-65-1	< 0.5	0.5	ug/l	1
00990	2-Chlorotoluene	95-49-8	< 0.5	0.5	ug/l	1
00991	1,3,5-Trimethylbenzene	108-67-8	< 0.5	0.5	ug/l	1
00992	4-Chlorotoluene	106-43-4	< 0.5	0.5	ug/l	1
00993	tert-Butylbenzene	98-06-6	< 0.5	0.5	ug/l	1
00994	1,2,4-Trimethylbenzene	95-63-6	< 0.5	0.5	ug/l	1
00995	sec-Butylbenzene	135-98-8	< 0.5	0.5	ug/l	1
00996	p-Isopropyltoluene	99-87-6	< 0.5	0.5	ug/l	1
00997	1,3-Dichlorobenzene	541-73-1	< 0.5	0.5	ug/l	1
00998	1,4-Dichlorobenzene	106-46-7	< 0.5	0.5	ug/l	1
00999	n-Butylbenzene	104-51-8	< 0.5	0.5	ug/l	1
01000	1,2-Dichlorobenzene	95-50-1	< 0.5	0.5	ug/l	1
01001	1,2-Dibromo-3-chloropropane	96-12-8	< 0.5	0.5	ug/l	1
01002	1,2,4-Trichlorobenzene	120-82-1	< 0.5	0.5	ug/l	1
01003	Hexachlorobutadiene	87-68-3	< 0.5	0.5	ug/l	1
01004	Naphthalene	91-20-3	< 0.5	0.5	ug/l	1
01005	1,2,3-Trichlorobenzene	87-61-6	< 0.5	0.5	ug/l	1
03397	trans-1,3-Dichloropropene	10061-02-6	< 0.5	0.5	ug/l	1
03398	cis-1,3-Dichloropropene	10061-01-5	< 0.5	0.5	ug/l	1
03399	Chloromethane	74-87-3	< 0.5	0.5	ug/l	1
03400	Bromomethane	74-83-9	< 0.5	0.5	ug/l	1
03401	Vinyl Chloride	75-01-4	< 0.5	0.5	ug/l	1
03402	Chloroethane	75-00-3	< 0.5	0.5	ug/l	1
03403	Trichlorofluoromethane	75-69-4	< 0.5	0.5	ug/l	1

Lancaster Laboratories

Lancaster Laboratories Sample No. PW 4745826

Trip Blank Water Sample
March 2006 Semiannual Assess. Monitoring Event
Watauga County Landfill
Collected:04/04/2006 08:00

Account Number: 11200

Submitted: 04/07/2006 09:35
Reported: 04/19/2006 at 15:55
Discard: 05/20/2006

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

WTGTB SDG#: WAT02-06TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
03404	1,1-Dichloroethene	75-35-4	< 0.5	0.5	ug/l	1
03405	Methylene Chloride	75-09-2	< 0.5	0.5	ug/l	1
03406	trans-1,2-Dichloroethene	156-60-5	< 0.5	0.5	ug/l	1
03407	1,1-Dichloroethane	75-34-3	< 0.5	0.5	ug/l	1
03408	Chloroform	67-66-3	< 0.5	0.5	ug/l	1
03409	1,1,1-Trichloroethane	71-55-6	< 0.5	0.5	ug/l	1
03410	Carbon Tetrachloride	56-23-5	< 0.5	0.5	ug/l	1
03411	Benzene	71-43-2	< 0.5	0.5	ug/l	1
03412	1,2-Dichloroethane	107-06-2	< 0.5	0.5	ug/l	1
03413	Trichloroethene	79-01-6	< 0.5	0.5	ug/l	1
03414	1,2-Dichloropropane	78-87-5	< 0.5	0.5	ug/l	1
03415	Bromodichloromethane	75-27-4	< 0.5	0.5	ug/l	1
03416	Toluene	108-88-3	< 0.5	0.5	ug/l	1
03417	1,1,2-Trichloroethane	79-00-5	< 0.5	0.5	ug/l	1
03418	Tetrachloroethene	127-18-4	< 0.5	0.5	ug/l	1
03419	Dibromochloromethane	124-48-1	< 0.5	0.5	ug/l	1
03420	Chlorobenzene	108-90-7	< 0.5	0.5	ug/l	1
03421	Ethylbenzene	100-41-4	< 0.5	0.5	ug/l	1
03422	Styrene	100-42-5	< 0.5	0.5	ug/l	1
03423	Bromoform	75-25-2	< 0.5	0.5	ug/l	1
03424	1,1,2,2-Tetrachloroethane	79-34-5	< 0.5	0.5	ug/l	1

State of North Carolina Lab Certification No. 521

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
03643	EPA Method 524.2	EPA 524.2 Rev. 4.1	1	04/12/2006 19:24	Shawn J Rice	1

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 984786
Reported: 04/19/06 at 03:55 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: S061021AA	Sample number(s): 4745821-4745826							
1,1,1,2-Tetrachloroethane	< 0.5	0.5	ug/l	99		70-130		
Dichlorodifluoromethane	< 0.5	0.5	ug/l	92		70-130		
2,2-Dichloropropane	< 0.5	0.5	ug/l	103		70-130		
cis-1,2-Dichloroethene	< 0.5	0.5	ug/l	98		70-130		
Bromochloromethane	< 0.5	0.5	ug/l	98		70-130		
1,1-Dichloropropene	< 0.5	0.5	ug/l	105		70-130		
Dibromomethane	< 0.5	0.5	ug/l	103		70-130		
1,3-Dichloropropane	< 0.5	0.5	ug/l	106		70-130		
1,2-Dibromoethane	< 0.5	0.5	ug/l	103		70-130		
m+p-Xylene	< 0.5	0.5	ug/l	106		70-130		
o-Xylene	< 0.5	0.5	ug/l	105		70-130		
Isopropylbenzene	< 0.5	0.5	ug/l	106		70-130		
Bromobenzene	< 0.5	0.5	ug/l	100		70-130		
1,2,3-Trichloropropane	< 0.5	0.5	ug/l	98		70-130		
n-Propylbenzene	< 0.5	0.5	ug/l	104		70-130		
2-Chlorotoluene	< 0.5	0.5	ug/l	102		70-130		
1,3,5-Trimethylbenzene	< 0.5	0.5	ug/l	102		70-130		
4-Chlorotoluene	< 0.5	0.5	ug/l	102		70-130		
tert-Butylbenzene	< 0.5	0.5	ug/l	99		70-130		
1,2,4-Trimethylbenzene	< 0.5	0.5	ug/l	99		70-130		
sec-Butylbenzene	< 0.5	0.5	ug/l	95		70-130		
p-Isopropyltoluene	< 0.5	0.5	ug/l	102		70-130		
1,3-Dichlorobenzene	< 0.5	0.5	ug/l	96		70-130		
1,4-Dichlorobenzene	< 0.5	0.5	ug/l	96		70-130		
n-Butylbenzene	< 0.5	0.5	ug/l	96		70-130		
1,2-Dichlorobenzene	< 0.5	0.5	ug/l	95		70-130		
1,2-Dibromo-3-chloropropane	< 0.5	0.5	ug/l	95		70-130		
1,2,4-Trichlorobenzene	< 0.5	0.5	ug/l	89		70-130		
Hexachlorobutadiene	< 0.5	0.5	ug/l	98		70-130		
Naphthalene	< 0.5	0.5	ug/l	88		70-130		
1,2,3-Trichlorobenzene	< 0.5	0.5	ug/l	85		70-130		
trans-1,3-Dichloropropene	< 0.5	0.5	ug/l	104		70-130		
cis-1,3-Dichloropropene	< 0.5	0.5	ug/l	104		70-130		
Chloromethane	< 0.5	0.5	ug/l	98		70-130		
Bromomethane	< 0.5	0.5	ug/l	96		70-130		
Vinyl Chloride	< 0.5	0.5	ug/l	93		70-130		
Chloroethane	< 0.5	0.5	ug/l	101		70-130		
Trichlorofluoromethane	< 0.5	0.5	ug/l	96		70-130		
1,1-Dichloroethene	< 0.5	0.5	ug/l	101		70-130		
Methylene Chloride	< 0.5	0.5	ug/l	96		70-130		
trans-1,2-Dichloroethene	< 0.5	0.5	ug/l	97		70-130		
1,1-Dichloroethane	< 0.5	0.5	ug/l	102		70-130		
Chloroform	< 0.5	0.5	ug/l	101		70-130		
1,1,1-Trichloroethane	< 0.5	0.5	ug/l	100		70-130		
Carbon Tetrachloride	< 0.5	0.5	ug/l	104		70-130		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

CHAIN OF CUSTODY RECORD

Track# 1Z 237 301 01 4186 9840

acct# 11200 Group# 984786 Sample# 4745821-26

Laboratory: Lancaster Laboratories, Lancaster, PA Project Manager: Barbara Weyandt 1-717-656-2300

Client: Watauga County, NC **Attn:** Mr. J.V. Polter **Address:** 842 West King Street?/Courthouse, Suite 1 Boone, NC 28607 **Phone:** (704) 265-8003 **Fax:** 0 **Fax:** 0	**Consultant:** Draper Aden Associates **Attn:** Janet C. Frazier **Address:** 2206 South Main Street Blacksburg, Virginia 24060 **Phone:** (540) 552-0444 **Fax:** (540) 552-0291	**Sample Site:** Watauga County Landfill **Location:** Watauga County, NC **Event:** March 2006 Semiannual Assess. Monitoring Event **DAA JN:** 6520-39 **Lab JN:**	**Project Specific (PS) or Batch (B) QC:** ☐ PS ☑ B **Sample Collection for Project Complete? (See Note 1)** ☑ YES ☐ NO **Carrier:** UPS **Tracking Number:**

Box 1: Matrix
SW Surface Water, GW Groundwater, L Leachate, S Soil, T Trip Blank, E Equipment Blank, P Product, O Other

Box 2: Preservative
A HCL, B HNO_3, C H_2SO_4, D $Na_2S_2O_3$, E NaOH, F ZnAc, G Other (Specify), H None

Box 3: Filtered/Unfiltered
F Filtered, U Unfiltered

Box 4: Sample Type
G Grab, C Composite

Box 5: Sample Container Type
P Plastic, V VOA, AG Amber Glass, CG Clear Glass

Invoice
Copy to Consultant: ☑ YES ☐ NO
Bill: ☑ Client ☐ Consultant
Preserved and shipped on ice: ☑ YES ☐ NO

Box 4 - Sample Type	G
Box 3 - Filtered/Unfiltered	U
Required pH of Sample	<2
Box 2 - Preservative	A
Box 5 - Sample Container Type	3-40ml V

GENERAL NOTES: (lancaster level 1 deliverable) Report Quantitation Limit, detection limit and estimated results "J" flag.

-See attached analyte list + reporting limits.

JVP 3/22/06

Sample ID	Date: 2006	Time	Box 1: Matrix	Number of Bottles	524.2								
RES-1	4/5	12:20	GW	3	X				Bolick, 2239 Hwy 421 S.	Well reference # 1			
~~RES-21~~			~~GW~~	~~3~~	~~X~~				~~142 Green Briar Road~~	~~Well reference # 21~~			
H & G Produce	4/5	12:05	GW	3	X				230 Cabbage Row (Hollar & Greene)	Well reference # 6			
RES-15	4/5	11:55	GW	3	X				2711 Hwy 421 S (Grear)	Well reference # 15			
RES-16	4/5	11:50	GW	3	X				2737 Hwy 421 S (Williamson)	Well reference # 16			
BREMCO	4/5	11:30	GW	3	X				2491 Hwy 421 S. Well ref # 3	Well reference # 3			
TRIP BLANK	4/4	0800	T	3	X								

Clients Special Instructions:

Received by lab in Good Condition ____ Yes ____ No Custody Seal Intact ____ Yes ____ No Temperature upon arrival ____ Received on Ice ____ Yes ____ No
Describe problems, if any:

Sampler Name (Print): Chris Branscome	Date: 4/5/06	#1 Relinquished by (Signature): Carrie N. Blackwood	Date: 4/6/06	#2 Relinquished by (Signature):	Date:	Sample Storage Time Requested:
Sampler Signature: Chris Branscome	Time: 1700	Company Name: DAA	Time: 1700	Company Name:	Time:	
Sampler Name (Print): Carrie N. Blackwood	Date: 4/5/06	#1 Received by (Signature):	Date:	#2 Received by (Signature): [signature]	Date: 4/7/06	30 DYS ORG/6 MTHS INORG
Sampler Signature: Carrie N. Blackwood	Time: 1700	Company Name:	Time:	Company Name: LLI	Time: 0935	

\\draperaden.net\DAA\Projects\ADMIN\DIVISIONS\ENVR\Templates\BBURG ETEAM TEMP\Field Events\Watauga\2005-CompuChemCOC - CoreMW's,Surf & Res.XLS

1/4 JVP 3/22/06

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
524.2	Volatile Organics					
	Dichlorodifluoromethane	ND	0.5	ug/L	08/16/01	jdn
	Chloromethane	ND	0.5	ug/L	08/16/01	jdn
	Vinyl chloride	ND	0.5	ug/L	08/16/01	jdn
	Bromomethane	ND	0.5	ug/L	08/16/01	jdn
	Chloroethane	ND	0.5	ug/L	08/16/01	jdn
	Trichlorofluoromethane	ND	0.5	ug/L	08/16/01	jdn
	1,1-Dichloroethene	ND	0.5	ug/L	08/16/01	jdn
	Methylene chloride	ND	0.5	ug/L	08/16/01	jdn
	trans-1,2-Dichloroethene	ND	0.5	ug/L	08/16/01	jdn
	1,1-Dichloroethane	ND	0.5	ug/L	08/16/01	jdn
	2,2-Dichloropropane	ND	0.5	ug/L	08/16/01	jdn
	cis-1,2-Dichloroethene	ND	0.5	ug/L	08/16/01	jdn
	Bromochloromethane	ND	0.5	ug/L	08/16/01	jdn
	Chloroform	ND	0.5	ug/L	08/16/01	jdn
	1,1,1-Trichloroethane	ND	0.5	ug/L	08/16/01	jdn
	1,1-Dichloropropene	ND	0.5	ug/L	08/16/01	jdn
	Carbon tetrachloride	ND	0.5	ug/L	08/16/01	jdn
	Benzene	ND	0.5	ug/L	08/16/01	jdn
	1,2-Dichloroethane	ND	0.5	ug/L	08/16/01	jdn
	Trichloroethene	ND	0.5	ug/L	08/16/01	jdn
	1,2-Dichloropropane	ND	0.5	ug/L	08/16/01	jdn
	Dibromomethane	ND	0.5	ug/L	08/16/01	jdn
	Bromodichloromethane	ND	0.5	ug/L	08/16/01	jdn
	cis-1,3-Dichloropropene	ND	0.5	ug/L	08/16/01	jdn
	Toluene	ND	0.5	ug/L	08/16/01	jdn
	trans-1,3-Dichloropropene	ND	0.5	ug/L	08/16/01	jdn
	1,1,2-Trichloroethane	ND	0.5	ug/L	08/16/01	jdn
	Tetrachloroethene	ND	0.5	ug/L	08/16/01	jdn
	1,3-Dichloropropane	ND	0.5	ug/L	08/16/01	jdn
	Dibromochloromethane	ND	0.5	ug/L	08/16/01	jdn
	1,2-Dibromoethane (EDB)	ND	0.5	ug/L	08/16/01	jdn
	Chlorobenzene	ND	0.5	ug/L	08/16/01	jdn
	1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	08/16/01	jdn
	Ethylbenzene	ND	0.5	ug/L	08/16/01	jdn
	m&p-Xylenes	ND	0.5	ug/L	08/16/01	jdn
	Xylenes (total)	ND	0.5	ug/L	08/16/01	jdn
	o-Xylene	ND	0.5	ug/L	08/16/01	jdn
	Styrene	ND	0.5	ug/L	08/16/01	jdn
	Bromoform	ND	0.5	ug/L	08/16/01	jdn
	Isopropylbenzene	ND	0.5	ug/L	08/16/01	jdn
	1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	08/16/01	jdn
	Bromobenzene	ND	0.5	ug/L	08/16/01	jdn
	1,2,3-Trichloropropane	ND	0.5	ug/L	08/16/01	jdn
	n-Propylbenzene	ND	0.5	ug/L	08/16/01	jdn
	2-Chlorotoluene	ND	0.5	ug/L	08/16/01	jdn
	1,3,5-Trimethylbenzene	ND	0.5	ug/L	08/16/01	jdn
	4-Chlorotoluene	ND	0.5	ug/L	08/16/01	jdn
	tert-Butylbenzene	ND	0.5	ug/L	08/16/01	jdn

In Description = Dry Wgt.

To ~~[illegible]~~ JCF
~~[illegible]~~ residential Lancaster
samples: 524.2
JCF 3-15-05

2/4 320/06
JCF

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	1,2,4-Trimethylbenzene	ND	0.5	ug/L	08/16/01	jdn
	sec-Butylbenzene	ND	0.5	ug/L	08/16/01	jdn
	1,3-Dichlorobenzene	ND	0.5	ug/L	08/16/01	jdn
	p-Isopropyltoluene	ND	0.5	ug/L	08/16/01	jdn
	1,4-Dichlorobenzene	ND	0.5	ug/L	08/16/01	jdn
	n-Butylbenzene	ND	0.5	ug/L	08/16/01	jdn
	1,2-Dichlorobenzene	ND	0.5	ug/L	08/16/01	jdn
	1,2-Dibromo-3-chloropropane	ND	0.5	ug/L	08/16/01	jdn
	1,2,4-Trichlorobenzene	ND	0.5	ug/L	08/16/01	jdn
	Hexachlorobutadiene	ND	0.5	ug/L	08/16/01	jdn
	Naphthalene	ND	0.5	ug/L	08/16/01	jdn
	1,2,3-Trichlorobenzene	ND	0.5	ug/L	08/16/01	jdn

* In Description = Dry Wgt.

3/20/06
3/4 ak