REPORT ON
CURRENT CONDITIONS AND PROPOSED FINAL REMEDY
BOVANO OF CHESHIRE
830 MAIN STREET
CHESHIRE, CONNECTICUT

by

Haley & Aldrich, Inc.
Glastonbury, Connecticut

for

United States Environmental Protection Agency - Region I
Boston, Massachusetts

File No. 26269-400
October 2000

RDMS Doc ID 106777

UNDERGROUND
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12 October 2000
File No. 26269-400

United States Environmental Protection Agency -Region I
RCRA Corrective Action Section
John F. Kennedy Building – 90 Canal Street
Boston Massachusetts 02203-0001

Attention: Mr. David Lim
Project Manager

Subject: Current Conditions Report and Proposed Final Remedy
Bovano of Cheshire
830 South Main Street
Cheshire, Connecticut 06410
CTD001179316

Gentlemen:

On behalf of our client, CONN/STEP, Haley & Aldrich is submitting this Current Conditions Report and proposed Final Remedy for the above referenced site for your review.

FACILITY BACKGROUND INFORMATION

The facility, Bovano of Cheshire (Bovano) is located at 830 South Main Street (Rte 10) (Site) in Cheshire, Connecticut (Figure 1, Site Locus). The facility is bounded to the east by the Mill River, to the south by Jinny Hill Road and a McDonald's restaurant, to the west by South Main Street and a gasoline service station, and to the north by residential properties. The site contains four buildings (Sweet Claude's ice cream shop, garage, retail gift shop and storage facility, and a design manufacturing and warehouse facility) (Figure 2, Site Plan). The remainder of the site is paved, landscaped or wooded. A production/drinking water well is located on site. Groundwater flow direction at the Site flows approximately southerly towards the Mill River. Bovano is currently assessing continued operation at this location or moving its operation to a new facility.

History of Ownership and Description of Operation

The Bovano facility has been producing ornamental glass objects and gifts since 1955. Prior to 1955, a non-ferrous metal foundry dating back to pre-1900 was located at the site. These glass items and gifts are produced by glass enameling on copper for jewelry, figurines and

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wall ornaments. Operations at the manufacturing facility have included pickling, solvent cleaning and degreasing of metal parts, lacquer application to metal parts and glass enameling by applying glass powder and baking it onto metal. A former solvent degreaser was dismantled in June 1982 and use of the solvent trichloroethylene was discontinued at that time.

Etching is conducted at the facility using a self-contained machine, which was installed at the facility in 1981/1982. At that time the etching was performed using ferric chloride. The facility generated approximately 10 gallons per week of spent ferric chloride. The waste was collected into drums and stored in the former Chemical Storage Area (Figure 2). A closure plan for this former Chemical Storage Area was submitted to CTDEP for review in May 1991. Recently, the CTDEP has been in contact with Bovano and required closure of the area under the CTDEP "Draft RCRA Closure Guidance for Generators Who Store Less Than 90 Days". Bovano is currently reviewing bid documents for developing an updated closure plan and conducting closure activities under the CTDEP draft guidance document.

In 1986, the facility placed a larger etching machine into operation. Etching with ferric chloride was replaced with cupric chloride at that time. The cupric chloride waste is regenerated at the facility. Overgeneration results in 7 to 8 gallons per week that is manifested out as D002 and D007 waste. There is a sensor which bleeds off wastewater from the etching process and sends the wastewater to two 1,000-gallon above ground holding tanks (AGHTs) until it is picked up by a waste hauler. The regeneration rate is approximately 1,500 to 1,800 gallons of wastewater every 90 days.

A sulfuric acid and nitric acid bright dip is used to clean metal parts after the etching process. Wastewater from this process is discharged to the two 1,000-gallon AGHTs where it is stored prior to pick-up by a waste hauler. Prior to the installation of the two 1,000-gallon AGHTs, the facility used an indoor open concrete tank with a capacity of 1,500-gallons. The bright dip wastewater was sent to the tank and treated with sodium hydroxide. The treated wastewater in the indoor concrete tank was picked up by a waste hauler from 1981 to 1986. The treatment of the wastewater with sodium hydroxide was terminated in 1986. The untreated wastewater was held in the tank until Environmental Waste Resources picked it up.

From 1976 to 1977, the facility collected the bright dip wastewater into the 1,500-gallon concrete tank for neutralization with sodium hydroxide then discharged the treated wastewater/sludge to an outside lagoon. The liquid in the lagoon was discharged to a dry well. The sludge in the lagoon was classified as copper hydroxide (F006).

The facility has nine booths where glass powder or "frit" is applied by hand to copper or brass parts that have been sprayed with a food-grade adhesive. The parts are then baked in ovens. The glass powder was formerly sprayed onto parts and collected outside the north end of the facility in a wooden baffle box. Soil in that area of the site was sampled and was found

to contain lead, cadmium and arsenic. The CTDEP issued an order to have the soil remediated and the area was excavated in 1990. The soil was disposed off-site in 1992 by Excavation Technologies, Inc. of Cheshire, Connecticut. Currently the nine booths are connected to a bag house located on the roof of the facility. Lacquering is applied to metal by hand using a paintbrush. This process does not generate any waste.

Regulatory Enforcement

The following is a summary of previous and current enforcement action at the site:

- Order No. 2036: The order required Bovano to install a treatment system for its metal finishing operations. Bovano installed the former sludge lagoon as a response to this order. In December 1978, CTDEP issued Bovano a permit to discharge treated wastewater to the former sludge lagoon. The granting of this permit acknowledged full compliance with Order No. 2036.

- Order No. 3242: The order was issued after a RCRA inspection of the former sludge lagoon in December 1981. The order contained d three items to be addressed:

  1. An investigation of soil, surface water and groundwater contamination;
  2. A best management plan (BMP) for chemical handling and storage; and,
  3. Elimination of metal finishing wastewater discharges to groundwater.

  Bovano complied with the order by taking the following action:

  1. Elimination of the trichloroethylene (TCE) degreaser in June 1982;
  2. Contracted with TRC Consultants to conduct an environmental investigation at the site. TRC results indicated some copper and TCE impacts to soil and groundwater. At Well B, TCE (1,200 μg/L) was present at significant levels in 1982 but has since dropped off to below the laboratory detection limit (refer to Table I, Results of Chemical Testing of Groundwater). Historically, TCE has also been detected in groundwater at MW-2 and MW-3.
  3. Contaminated soil was removed from the former sludge lagoon and the former chemical storage area (presently the garage) to the satisfaction and approval of the CTDEP. Both areas were eliminated as part of the BMP prepared by Bovano.

- Notice of Violation (NOV) No. 307: As a result of a hazardous waste inspection, the NOV was issued for Bovano to comply with the following:

  1. Hazardous Waste Determinations

2. General inspection requirements
3. Personnel training
4. Contingency plan and emergency procedures
5. Use and management of containers

- Order No HM-688: Issued May 1990, the order was prompted by a CTDEP inspection for compliance with NOV 307. Compliance with NOV 307 was obtained in August 1990. Another stipulation of the order was to excavate and remove soil impacted by enamel powder located north of the facility. The soil was disposed off-site in 1992 by Excavation Technologies, Inc. of Cheshire, Connecticut.

On 26 April 2000, a NOV No. 1046 was issued by the CTDEP as a result of a facility inspection conducted on 3 February 2000. The NOV addresses the following:

1. Failure to establish financial assurance for the closure of the former hazardous waste storage area,
2. Failure to properly establish financial assurance for post-closure care of the facility,
3. Failed to perform hazardous waste determinations,
4. Failed to perform and log inspections; and,
5. Failed to perform and assessment of tank systems.

Bovano is currently addressing these issues. In a letter from CTDEP dated 8 June 2000, CTDEP concurred with Bovano that the hazardous waste storage area should be closed under generator requirements. Consequently, the CTDEP does not require Bovano to establish financial assurance for closure of the facility or financial assurance for post-closure care of the facility as stated in NOV 1046. The CTDEP recognizes that Bovano has not operated as a RCRA storage facility.

In the same letter dated 8 June 2000, the CTDEP requires that Bovano close the former hazardous waste storage area in accordance with the CTDEP "Draft RCRA Closure Guidance for Generators Who Store Less Than 90 Days". This is required by Section 22a-449(c)-102(a) of the Regulations of Connecticut State Agencies ("RCSA") incorporating 40 CFR Parts 262.354 (a), 265.111 and 265.114.

In a letter from Bovano to CTDEP dated 21 June 2000, Bovano notified CTDEP that Item Nos. 3,4 and 5 of NOV 1046 are currently under review.

Abutting Land Uses

Abutting land uses to the west and south is Commercial/Retail and to the east and north are residential. Land use at the site and vicinity of the site is commercial/retail and residential.

A gasoline station is located west of the site across South Main Street (Rte. 10). A McDonald's restaurant and Fabric Store are located south of the site. Residential property is located north and east of the site and across Jinny Hill Road located south of the site.

With the exception of two apartment complexes located within 0.25-miles to 0.5-miles of Bovano, the area is served by municipal water supplied by the South Central Regional Water Authority (SCRWA) (New Haven Water Company). A well owned by the SCRWA is located approximately 0.75-mile south of Bovano adjacent to the eastern side of South Main Street (Rte. 10) (refer to Figure 1, Site Locus). According to published information, the well was installed in 1975. The reported static depth to water is 8.0 ft. below ground surface (bgs). The surficial geology through which the well was installed is reported as silty clay and fine sand to a depth of 27.0 ft. bgs, coarse to fine sand and gravel to a depth of 79 ft. bgs and glacial till at 79.0 ft. bgs.

NATURE AND EXTENT OF CONTAMINATION

Historic release of copper, lead, and TCE to soil and groundwater at the site has led to the completion of various environmental assessments and remediation of soil and groundwater at the site. The CTDEP through various administrative orders and NOVs has overseen the investigation and remediation of soil and groundwater.

Groundwater Quality

On 13 and 14 June 2000, Haley and Aldrich sampled groundwater from the existing monitoring wells (MW-A, MW-B, MW-C, MW-1, MW-2, MW-3, MW-4) at the site using low-flow purging and sampling techniques (refer to Figure 2 for sampling locations). The samples were placed into glass or plastic containers with the appropriate preservative in accordance with standard methodology. The groundwater samples were kept chilled for subsequent chemical testing by a state-certified laboratory. Groundwater samples were submitted for chemical testing for the presence of volatile organic compounds (VOCs) by EPA Method 8260, total and dissolved cadmium, chromium, copper, lead, manganese, and iron by EPA Method 200.7, chloride, sulfate, nitrate, nitrite by EPA Method 300.0, sulfide by EPA Method 376.2, alkalinity by EPA Method 310.2, ammonia by EPA Method 350.1, total organic carbon by EPA Method 415.1, dissolved hydrogen, methane ethane and ethylene.

The results of chemical testing are presented in Appendix A. A summary of historical and current groundwater quality is summarized in Table I. Historical data on VOCs present in groundwater at MW-3 is presented graphically in Appendix B. VOCs were not detected at or above the laboratory detection limit in all the monitoring wells. At MW-A, total and dissolved manganese (0.063 mg/L, respectively) were detected. At MW-B and MW-C, low levels of total and dissolved iron were detected. Total and dissolved metals (cadmium,

chromium, copper, lead manganese and iron) were not detected in groundwater at or above the laboratory detection limit at MW-1, MW-2, MW-3 and MW-4. The graphical representation of historical data indicates the site groundwater plume has naturally attenuated over time.

Groundwater was previously collected from the site production/drinking water well (WS-1) in August 1996, May 1997, May 1998, and July 1999. The groundwater was chemically tested by a state-certified laboratory for the presence of VOCs by EPA Method 8260 and total and dissolved cadmium, chromium, copper and lead. The results of chemical testing are presented in Appendix C. A summary of chemical testing at WS-1 is presented in the following table.

Date	VOCs (ug/L)	Total Metals (mg/L)	Dissolved Metals (mg/L)	Regulatory Exceedances
9 August 1996	ND (1)	Copper 1.54 mg/L, Lead 0.494 mg/L	Copper 0.74 mg/L, Lead 0.016 mg/L (3)	Exceeds GA GWPC of 1.3 mg/L for copper and 0.015 mg/L for lead
8 May 1997	ND	ND	--(2)	none
28 May 1998	ND	Copper 0.12 mg/L, Lead 0.002 mg/L	Copper 0.09 mg/L	none
12 July 1999	ND	Copper 0.06 mg/L, Lead 0.003 mg/L	ND	none

Notes:

(1) ND means the analyte was not detected at or above the laboratory detection limit.
(2) -- means the parameter was not tested.
(3) The drinking water sampled was filtered and preserved.

SITE CONDITIONS

Hydrogeology

Published regional meteorological information indicates normal daily mean temperatures at the site may range from 39 °F to 74 °F in spring and summer and 42 °F to 25 °F in the fall and winter, respectively. Typical monthly precipitation ranges from 3.5 in. to 4.0 in. per month in a given year. Average wind speeds range from approximately 7 to 13 miles-per-hour. Prevailing winds are from the north/northwest in the fall and winter and the south/southwest in the summer. Meteorological data presented here is from the National Oceanographic and Atmospheric Administration. The database has been maintained for these parameters over the past 27 to 30 years.

Site topography is relatively flat at an elevation of approximately 160 ft. above mean sea level. The physiography of the area is gently rolling hills. The Mill River located along the eastern site boundary is depositional in nature.

Approximately 46 percent of the site is covered by paved areas or buildings. During a stormwater event, sheet flow will be toward catch basins or landscaped areas. The remaining 54 percent of the site is wooded, grassed area or unpaved parking. Stormwater in this area of the site would percolated through the soil to groundwater or contribute to transpiration by grasses and trees.

The majority of the site soils are mapped as Urban Land consisting of areas that are covered by buildings and paved parking lots. The portion of the property that abuts the Mill River is mapped as Saco silt loam, consisting of a poorly drained mottled silt loam. This soil has a high water table at or near the ground surface most of the year. It is subject to frequent flooding.

The site geology is mapped as stratified drift consisting of sand, gravel, silt and clay deposits. Site test boring logs indicate coarse to fine sand and gravel to depths ranging from 21.0 ft. bgs to 34 ft. bgs. Bedrock at the site is mapped as New Haven Arkose consisting of red to brown, medium to coarse grained sandstone sedimentary rock containing quartz, feldspar and rock fragments. Site groundwater flows in a southerly direction at the site. Groundwater flow velocity is estimated to range from 0.14 ft./day to 0.16 ft./day on site.

Evaluation for Natural Attenuation

Intrinsic bioremediation and natural attenuation are typically evaluated using a "lines of evidence" approach (USEPA OSWER Directive 9200.4-17, 1997). The "lines of evidence" consist of:

- documenting mass loss of chemicals at the field scale;
- documenting the presence and distribution of geochemical and biochemical indicators of intrinsic degradation; and,
- collecting direct microbiological evidence through microcosm testing.

At the Bovano site, the third line of evidence (microcosm testing) was not performed, and only limited data regarding geochemical and biochemical indicators exists (the second line of evidence). However, of the three lines of evidence outlined in the OSWER Directive, documenting mass loss over time or distance along a groundwater flowpath is frequently considered to be the most important evidence supporting the extent to which natural processes are impacting chemical concentrations.

Review of the historic groundwater chemistry data for the Site shows considerable impact that natural degradation processes have had since the earliest monitoring conducted in 1982 on the concentrations and distributions of Site-related VOCs. For example, Figure 3 illustrates a significant decline in TCE over time in wells MW-B and MW-3 from September 1982 to June 2000. (No other wells showed contamination above regulatory limits at the Site). Well MW-B, situated adjacent to the areas of suspected source release, contained substantial levels of TCE shortly after the source removal action in 1982 (1220 ppb), but displayed quick and steady declines to non-detectable levels by 1995. Well MW-3, installed in 1984, had slightly higher, but similar levels of TCE as did MW-B at that time (50 ppb compared to 34 ppb). MW-3 is downgradient of the former source area, and the slightly higher concentrations likely represent a portion of the groundwater plume as it moved past that area following the source removal. The contaminant levels in MW-3 also show a marked decline at about the same rate as that seen in MW-B (Figure 3).

The mechanism for attenuation at the Bovano site is likely a combination of some biodegradation and dilution. Evidence for biodegradation includes the presence of 1,2-*cis*-DCE in MW-3. The *cis*-DCE isomer is essentially all created by biological factors and is highly unlikely to have been a constituent of the original release. Also, its absence, appearance and then disappearance in concert with reduction in the parent compound, TCE, suggests biological activity. Other degradation products, such as vinyl chloride and ethene are rapidly oxidized to CO_2 and hydrogen in an aerobic environment and would not likely be detectable.

Groundwater upgradient in the MW-B area has already been attenuated to non-detectable levels. Two of the last three rounds of sampling at MW-3 have shown non-detectable levels of VOCs. The slight increase in June of 1999 to 8.5 ppb (MCL = 5 ppb) is likely reflective of small-scale heterogeneous hydrogeologic conditions. Given the fact that (1) source removal has occurred, (2) one well (MW-B) adjacent to the original source has moved from highly contaminated to non-detect and (3) the only remaining well (MW-3) with detectable contamination appears to be following the pattern and rate of attenuation seen at MW-B, it is

reasonable to assume that VOC contamination in MW-3 will also continue to attenuate to non-detectable levels.

Potential Migration Pathways

Groundwater

One production/drinking water supply well (WS-1) is located adjacent to the south side of the facility. The results of annual chemical testing of groundwater from this well (1996 through 1999) indicate that groundwater has not been impacted by Site activities during the previous three years. Also, the well owned by the SCRWA located approximately 0.75-mile south of the Bovano site has recently been tested and no VOCs were detected at or above State and Federal MCLs (See Appendix D). Other than these two supply wells, the area around the Bovano site is served by municipal water. Based on this information, there is no known exposure pathway from groundwater usage. Additionally, as described above, contaminants at the site have attenuated to the point that only one well (MW-3) has had contamination levels above regulatory standards at all and that only sporadically.

Surface Water

Surface water adjacent to the Site is classified by the CTDEP as "B/AA". The "B" designation allows for uses such as a cold water fishery and wildlife habitat, recreational use, agricultural and industrial supply and navigation. The CTDEP goal for this surface water is "AA". The "AA" designation allows for the surface water to be used for direct human consumption without pretreatment as well as those uses under the "B" designation with a potential restriction on recreational use.

With the substantial attenuation of contaminants seen in the monitoring record, the likelihood of a surface water impact is minimal. Even under the most conservative of assumptions (e.g., that contaminated groundwater from the Site reaches the river), the much higher flows in the river relative to that volume of groundwater recharge would result in dilution to non-detectable levels in surface water with no risk to human health or the environment.

ENVIRONMENTAL INDICATORS (EIs)

Human EI Evaluation

A completed human EI evaluation form is presented in Appendix E. Based on historic and current Site information, the Human EI indicates a minimal risk to human health at the Site due to contamination. Available data indicates Site soil has been remediated to acceptable levels in accordance with CTDEP guidance and approval.

Recent drinking water well data indicates no risk due to consumption of groundwater from the on-site production/drinking water well WS-1 and from the supply wells located south of the Site.

Physical controls are in place at the facility, which includes ventilation systems and hazardous waste storage in compatible containment systems. Signs are posted within the facility to warn employees of potential hazards (i.e. confined spaces and chemical hazards) as well as safety signs and annual blood testing of employees.

Based on this data, the EI for Human Health has been achieved.

Groundwater EI Evaluation

A completed groundwater EI evaluation form is presented in Appendix F. Recent and historic information on groundwater indicates the groundwater contamination has experienced and continues to experience significant attenuation due to a combination of biological processes and dilution. Contaminants previously detected in Site wells (TCE, cadmium, chromium, copper and lead) were not detected in groundwater in June 2000. Previous Geoprobe data of groundwater downgradient of the property indicated compliance with State and Federal groundwater standards adjacent to the north side of Jinny Hill Road. Groundwater collected annually (1997 through 1999) from the Site monitoring well WS-1 indicates compliance with RSRs GA Groundwater Protection Criteria and Federal Maximum Contaminant Levels (MCLs) for TCE, cadmium, chromium, copper, and lead. In addition, recent data do not exceed the RSRs surface water protection criteria for TCE, cadmium, chromium copper and lead.

Based on this data, the EI for groundwater has been achieved.

PROPOSED FINAL REMEDY

Based on the available site information on soil and groundwater quality and potential risks to human health and the environment, a proposed final remedy for the site is Monitored Natural Attenuation (MNA) of groundwater. This proposed final remedy takes into account EPA's OSWER Directive 9200.4-17 (21 April 1999). Recent and historical data indicates the contaminant plume has shrunk and attenuated at the site. The remedial objectives for the site would be to take cognizance of the CTDEP RSRs as guidance to achieve the remedial goal of compliance with the CTDEP RSR GA GWPC and Federal MCLs.

In accordance with the CTDEP "Remediation Standard Regulations" (RSRs) used as guidance for the determination of post-remedial monitoring frequency and discontinuation of monitoring, one year of quarterly groundwater monitoring to demonstrate groundwater and surface water compliance would be appropriate for the Site. The effectiveness of MNA will

be demonstrated both short term and long term by the year of quarterly monitoring of groundwater for the presence of TCE and dissolved metals (i.e. cadmium, chromium, copper and lead).

If you have any questions or require more information, please do not hesitate to contact us.

Sincerely yours,
HALEY & ALDRICH, INC.

Jeffery J. Duigou
Senior Scientist

for Muriel E. Robinette, P.G.
Vice President

c: CONN/STEP; Ms. Judy Wlodarczyk
Bovano of Cheshire; Mr. James Flood

Attachments:

References
Figure 1 – Site Locus
Figure 2 – Site Plan
Figure 3 – TCE and cis-DCE Levels, MW-B and MW-3
Table 1 – Results of Chemical Testing of Groundwater
Appendix A –Chemical Testing Results - Groundwater
Appendix B – Historical Summary of VOCs in Groundwater at MW-3
Appendix C – Chemical Testing Results from WS-1
Appendix D – Results of Chemical Testing – 13 June & 15 August 2000
South Cheshire Well Field Effluent
Appendix E - Human Environmental Indicators
Appendix F – Groundwater Environmental Indicator

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REFERENCES

TRC Environmental Consultants, Inc. "Technical Report to Bovano Industries on Ground Water Investigations" dated 13 July 1984

TRC letter to Bovano on "TRC Project No. 2661-N51-00 - Soil Sampling Results" dated 17 September 1986

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HRP Associates report on "Phase I Environmental Site Assessment and Phase II Limited Subsurface Investigation, Bovano of Cheshire, 830 South Main Street, Cheshire, Connecticut (HRP#BOV-0002.P2)" dated 27 July 1995

"Closure Plan - Container Storage Area - Bovano Industries, 830 South Main Street, Cheshire, Connecticut"

Connecticut Department of Environmental Protection letter dated 26 April 2000, "Notice of Violation No. 1046"

Connecticut Department of Environmental Protection letter dated 8 June 2000, "Notice of Violation No. 1046 - Issued to Bovano Industries, Inc. on April 26, 2000"

Haley and Aldrich, Inc. report on "Semi-Annual Report - Bovano Site - 830 South Main Street - Cheshire, Connecticut" dated 4 October 1996

Haley and Aldrich, Inc. report on "Groundwater Sampling and Flow Rate Determination - Bovano Site - 830 South Main Street - Cheshire, Connecticut" dated 20 June 1997

Haley and Aldrich, Inc. report on "Geoprobe Drilling/Groundwater Sampling-Bovano Site - 830 South Main Street - Cheshire, Connecticut" dated 13 August 1997

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"Soil Survey of New haven County, Connecticut" by Charles A. Reynolds, United States Department of Agriculture, Soil Conservation Service, July 1979

"Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites", U.S. Department of Environmental Protection Agency, Office of Solid Waste and Emergency Response Directive 9200.4-17P, April 1999

TABLE I

RESULTS OF CHEMICAL TESTING OF GROUNDWATER
BOVANO OF CHESHIRE
CHESHIRE, CONNECTICUT

Parameter	Sample Number / Sampling Date	MW-1 19-Jun-84	29-Jun-95	9-Aug-96	8-May-97	28-May-98	12-Jul-99	14-Jun-00	GA Groundwater Protection Criteria	Surface Water Protection Criteria	Industrial Volatilization Criteria	Maximum Contaminant Level
Volatile Organic Compounds (ug/L):												
trans-1,2,-Dichloroethene		ND<1	ND	ND<1	ND<1	ND<1	ND<1	ND<1	100	NE	NE	100
cis-1,2-Dichloroethene		– (b)	ND	ND<1	ND<1	ND<1	ND<1	ND<1	70	NE	NE	70
Toluene		ND<1	ND	ND<1	ND<1	ND<1	ND<1	ND<1	1000	4000000	2615	1000
Trichloroethene		ND<1	ND	ND<1	ND<1	ND<1	ND<1	ND<1	5	2340	16	5
Dissolved Gases (ug/L):												
Methane		–	–	–	–	–	–	–	NE	NE	NE	NE
Ethane		–	–	–	–	–	–	–	NE	NE	NE	NE
Ethene		–	–	–	–	–	–	–	NE	NE	NE	NE
Hydrogen (nM/L)		–	–	–	–	–	–	–	NE	NE	NE	NE
Total Organic Carbon (mg/L):		–	–	–	–	–	–	250	NE	NE	NE	NE
Total Metals (mg/L):												
Cadmium		–	–	0.003	–	0.005	0.016	ND<0.005	NA	NA	NA	NA
Chromium		–	–	0.04	–	0.03	0.09	ND<0.05	NA	NA	NA	NA
Copper		–	–	2.14	–	5.22	12.87	ND<0.05	NA	NA	NA	NA
Lead		–	–	0.028	–	0.052	0.148	ND<0.013	NA	NA	NA	NA
Manganese		–	–	–	–	–	–	ND<0.05	NA	NA	NA	NA
Iron		–	–	–	–	–	–	ND<0.1	NA	NA	NA	NA
Dissolved Metals (mg/L):												
Cadmium		–	ND	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.005	0.005	0.006	NA	0.005
Chromium		–	ND	ND<0.02	ND<0.02	ND<0.02	0.02	ND<0.05	0.05	NE	NA	0.1
Copper		–	ND	ND<0.04	ND<0.04	ND<0.02	0.03	ND<0.05	1.3	0.048	NA	1.3
Lead		–	ND	ND<0.001	0.001	ND<0.001	ND<0.001	ND<0.013	0.015	0.013	NA	0.015
Manganese		–	–	–	–	–	–	ND<0.05	NE	NE	NA	NE
Iron		–	–	–	–	–	–	ND<0.1	NE	NE	NA	NE
Inorganics (mg/L):												
Alkalinity		–	–	–	–	–	–	250	NE	NE	NE	NE
Ammonia		–	–	–	–	–	–	–	NE	NE	NE	NE
Nitrate		–	–	–	–	–	–	1.1	NE	NE	NE	10
Nitrite		–	–	–	–	–	–	ND<0.10	NE	NE	NE	1
Chloride		–	–	–	–	–	–	–	NE	NE	NE	NE
Sulfate		–	–	–	–	–	–	12	NE	NE	NE	NE
Sulfide		–	–	–	–	–	–	–	NE	NE	NE	NE

Refer to Notes on Page 9 of 9

TABLE I (continued)

RESULTS OF CHEMICAL TESTING OF GROUNDWATER
BOVANO OF CHESHIRE
CHESHIRE, CONNECTICUT

Parameter	Sample Number / Sampling Date	19-Jun-84	29-Jun-95	9-Aug-96	MW-2 8-May-97	28-May-98	21-Jun-99	14-Jun-00	GA Groundwater Protection Criteria	Surface Water Protection Criteria	Industrial Volatilization Criteria	Maximum Contaminant Level
Volatile Organic Compounds (ug/L):												
trans-1,2,-Dichloroethene		ND<1	ND	ND<1	ND<1	ND<1	ND<1	ND<1	100	NE	NE	100
cis-1,2-Dichloroethene		--	ND	ND<1	ND<1	ND<1	ND<1	ND<1	70	NE	NE	70
Toluene		ND<1	ND	ND<1	ND<1	ND<1	11.3	ND<1	1000	4000000	2615	1000
Trichloroethene		1	ND	ND<1	ND<1	ND<1	ND<1	ND<1	5	2340	16	5
Dissolved Gases (ug/L):												
Methane		--	--	--	--	--	--	ND<0.2 (c)	NE	NE	NE	NE
Ethane		--	--	--	--	--	--	ND<0.01	NE	NE	NE	NE
Ethene		--	--	--	--	--	--	ND<0.01	NE	NE	NE	NE
Hydrogen (nM/L)		--	--	--	--	--	--	0.5	NE	NE	NE	NE
Total Organic Carbon (mg/L):		--	--	--	--	--	--	6.4	NE	NE	NE	NE
Total Metals (mg/L):												
Cadmium		--	--	ND<0.001	--	0.002	0.002	ND<0.005	NA	NA	NA	NA
Chromium		--	--	ND<0.02	--	ND<0.02	0.18	ND<0.05	NA	NA	NA	NA
Copper		--	--	0.18	--	1.17	5.74	ND<0.05	NA	NA	NA	NA
Lead		--	--	0.084	--	0.121	5.021	ND<0.013	NA	NA	NA	NA
Manganese		--	--	--	--	--	--	ND<0.05	NA	NA	NA	NA
Iron		--	--	--	--	--	--	ND<0.1	NA	NA	NA	NA
Dissolved Metals (mg/L):												
Cadmium		--	ND	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.005	0.005	0.006	NA	0.005
Chromium		--	ND	ND<0.02	ND<0.02	ND<0.02	0.03	ND<0.05	0.05	NE	NA	0.1
Copper		--	ND	ND<0.04	ND<0.04	ND<0.02	0.02	ND<0.05	1.3	0.048	NA	1.3
Lead		--	ND	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.013	0.015	0.013	NA	0.015
Manganese		--	--	--	--	--	--	ND<0.05	NE	NE	NA	NE
Iron		--	--	--	--	--	--	ND<0.1	NE	NE	NA	NE
Inorganics (mg/L):												
Alkalinity		--	--	--	--	--	--	260	NE	NE	NE	NE
Ammonia		--	--	--	--	--	--	ND<0.01	NE	NE	NE	NE
Nitrate		--	--	--	--	--	--	1.5	NE	NE	NE	10
Nitrite		--	--	--	--	--	--	ND<0.10	NE	NE	NE	1
Chloride		--	--	--	--	--	--	19	NE	NE	NE	NE
Sulfate		--	--	--	--	--	--	14	NE	NE	NE	NE
Sulfide		--	--	--	--	--	--	ND<1.0	NE	NE	NE	NE

Refer to Notes on Page 9 of 9

TABLE I (continued)

RESULTS OF CHEMICAL TESTING OF GROUNDWATER
BOVANO OF CHESHIRE
CHESHIRE, CONNECTICUT

Parameter	Sample Number / Sampling Date	19-Jun-84	29-July-95	9-Aug-96	MW-3 8-May-97	28-May-98	21-Jun-99	14-Jun-00	GA Groundwater Protection Criteria	Surface Water Protection Criteria	Industrial Volatilization Criteria	Maximum Contaminant Level
Volatile Organic Compounds (ug/L):												
trans-1,2,-Dichloroethene		ND<1	4	ND<1	ND<1	ND<1	ND<1	ND<1	100	NE	NE	100
cis-1,2-Dichloroethene		--	ND	8	22	22.5	8.9	ND<1	70	NE	NE	70
Toluene		ND<1	ND	ND<1	ND<1	ND<1	5.4	ND<1	1000	4000000	2615	1000
Trichloroethene		50	7	12	20	ND<1	8.5	ND<1	5	2340	16	5
Dissolved Gases (ug/L):												
Methane		--	--	--	--	--	--	ND<0.2	NE	NE	NE	NE
Ethane		--	--	--	--	--	--	ND<0.01	NE	NE	NE	NE
Ethene		--	--	--	--	--	--	ND<0.01	NE	NE	NE	NE
Hydrogen (nM/L)		--	--	--	--	--	--	0.4	NE	NE	NE	NE
Total Organic Carbon (mg/L):		--	--	--	--	--	--	1.4	NE	NE	NE	NE
Total Metals (mg/L):												
Cadmium		--	--	0.002	--	0.002	0.003	ND<0.005	NA	NA	NA	NA
Chromium		--	--	0.07	--	0.05	0.05	ND<0.05	NA	NA	NA	NA
Copper		--	--	0.23	--	0.26	0.28	ND<0.05	NA	NA	NA	NA
Lead		--	--	0.103	--	0.016	0.118	ND<0.013	NA	NA	NA	NA
Manganese		--	--	--	--	--	--	ND<0.05	NA	NA	NA	NA
Iron		--	--	--	--	--	--	ND<0.1	NA	NA	NA	NA
Dissolved Metals (mg/L):												
Cadmium		--	ND	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.005	0.005	0.006	NA	0.005
Chromium		--	0.22	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.05	0.05	NE	NA	0.1
Copper		--	0.74	ND<0.04	ND<0.04	ND<0.02	ND<0.02	ND<0.05	1.3	0.048	NA	1.3
Lead		--	0.308	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.013	0.015	0.013	NA	0.015
Manganese		--	--	--	--	--	--	ND<0.05	NE	NE	NA	NE
Iron		--	--	--	--	--	--	ND<0.1	NE	NE	NA	NE
Inorganics (mg/L):												
Alkalinity		--	--	--	--	--	--	33	NE	NE	NE	NE
Ammonia		--	--	--	--	--	--	ND<0.10	NE	NE	NE	NE
Nitrate		--	--	--	--	--	--	1.7	NE	NE	NE	10
Nitrite		--	--	--	--	--	--	ND<0.10	NE	NE	NE	1
Chloride		--	--	--	--	--	--	13	NE	NE	NE	NE
Sulfate		--	--	--	--	--	--	13	NE	NE	NE	NE
Sulfide		--	--	--	--	--	--	ND<1.0	NE	NE	NE	NE

Refer to Notes on Page 9 of 9

TABLE I (continued)

RESULTS OF CHEMICAL TESTING OF GROUNDWATER
BOVANO OF CHESHIRE
CHESHIRE, CONNECTICUT

Parameter	Sample Number / Sampling Date	19-Jun-84	29-Jun-95	26-Aug-96	MW-4 8-May-97	28-May-98	21-Jun-99	14-Jun-00	GA Groundwater Protection Criteria	Surface Water Protection Criteria	Industrial Volatilization Criteria	Maximum Contaminant Level
Volatile Organic Compounds (ug/L):												
trans-1,2,-Dichloroethene		--	ND	ND<1	ND<1	ND<1	ND<1	ND<1	100	NE	NE	100
cis-1,2-Dichloroethene		--	ND	ND<1	ND<1	ND<1	ND<1	ND<1	70	NE	NE	70
Toluene		--	ND	ND<1	ND<1	ND<1	ND<1	ND<1	1000	4000000	2615	1000
Trichloroethene		--	ND	ND<1	ND<1	ND<1	ND<1	ND<1	5	2340	16	5
Dissolved Gases (ug/L):												
Methane		--	--	--	--	--	--	ND<0.2	NE	NE	NE	NE
Ethane		--	--	--	--	--	--	ND<0.01	NE	NE	NE	NE
Ethene		--	--	--	--	--	--	ND<0.01	NE	NE	NE	NE
Hydrogen (nM/L)		--	--	--	--	--	--	0.4	NE	NE	NE	NE
Total Organic Carbon (mg/L):		--	--	--	--	--	--	2	NE	NE	NE	NE
Total Metals (mg/L):												
Cadmium		--	--	**0.005**	--	0.002	0.003	ND<0.005	NA	NA	NA	NA
Chromium		--	--	**0.16**	--	0.03	0.03	ND<0.05	NA	NA	NA	NA
Copper		--	--	**5.7**	--	2.53	2.94	ND<0.05	NA	NA	NA	NA
Lead		--	--	**0.038**	--	0.51	0.501	ND<0.013	NA	NA	NA	NA
Manganese		--	--	--	--	--	--	ND<0.05	NA	NA	NA	NA
Iron		--	--	--	--	--	--	ND<0.1	NA	NA	NA	NA
Dissolved Metals (mg/L):												
Cadmium		--	**0.01**	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.005	0.005	0.006	NA	0.005
Chromium		--	**0.45**	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.05	0.05	NE	NA	0.1
Copper		--	**13.5**	ND<0.04	ND<0.001	ND<0.02	ND<0.02	ND<0.05	1.3	0.048	NA	1.3
Lead		--	**0.52**	ND<0.001	0.003	ND<0.001	ND<0.001	ND<0.013	0.015	0.013	NA	0.015
Manganese		--	--	--	--	--	--	ND<0.05	NE	NE	NA	NE
Iron		--	--	--	--	--	--	ND<0.1	NE	NE	NA	NE
Inorganics (mg/L):												
Alkalinity		--	--	--	--	--	--	280	NE	NE	NE	NE
Ammonia		--	--	--	--	--	--	2.8	NE	NE	NE	NE
Nitrate		--	--	--	--	--	--	1.5	NE	NE	NE	10
Nitrite		--	--	--	--	--	--	ND<0.10	NE	NE	NE	1
Chloride		--	--	--	--	--	--	18	NE	NE	NE	NE
Sulfate		--	--	--	--	--	--	13	NE	NE	NE	NE
Sulfide		--	--	--	--	--	--	ND<1.0	NE	NE	NE	NE

Refer to Notes on Page 9 of 9

TABLE I (continued)

RESULTS OF CHEMICAL TESTING OF GROUNDWATER
BOVANO OF CHESHIRE
CHESHIRE, CONNECTICUT

Parameter	Sample Number / Sampling Date	19-Jun-84	29-Jun-95	26-Aug-96	MW-A 8-May-97	28-May-98	21-Jun-99	14-Jun-00	GA Groundwater Protection Criteria	Surface Water Protection Criteria	Industrial Volatilization Criteria	Maximum Contaminant Level
Volatile Organic Compounds (ug/L):												
trans-1,2,-Dichloroethene		--	ND	ND<1	ND<1	ND<1	ND<1	ND<1	100	NE	NE	100
cis-1,2-Dichloroethene		--	ND	ND<1	ND<1	ND<1	ND<1	ND<1	70	NE	NE	70
Toluene		--	ND	ND<1	ND<1	ND<1	15.7	ND<1	1000	4000000	2615	1000
Trichloroethene		--	ND	ND<1	ND<1	ND<1	ND<1	ND<1	5	2340	16	5
Dissolved Gases (ug/L):												
Methane		--	--	--	--	--	--	3.1	NE	NE	NE	NE
Ethane		--	--	--	--	--	--	ND<0.01	NE	NE	NE	NE
Ethene		--	--	--	--	--	--	ND<0.01	NE	NE	NE	NE
Hydrogen (nM/L)		--	--	--	--	--	--	0.4	NE	NE	NE	NE
Total Organic Carbon (mg/L):		--	--	--	--	--	--	2.6	NE	NE	NE	NE
Total Metals (mg/L):												
Cadmium		--	--	**0.015**	--	0.005	0.014	ND<0.005	NA	NA	NA	NA
Chromium		--	--	**0.18**	--	0.03	0.17	ND<0.05	NA	NA	NA	NA
Copper		--	--	**0.79**	--	0.13	1.02	ND<0.05	NA	NA	NA	NA
Lead		--	--	**0.195**	--	0.036	0.074	ND<0.013	NA	NA	NA	NA
Manganese		--	--	--	--	--	--	0.063	NA	NA	NA	NA
Iron		--	--	--	--	--	--	ND<0.1	NA	NA	NA	NA
Dissolved Metals (mg/L):												
Cadmium		--	ND	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.005	0.005	0.006	NA	0.005
Chromium		--	ND	ND<0.02	ND<0.02	ND<0.02	0.02	ND<0.05	0.05	NE	NA	0.1
Copper		--	ND	ND<0.04	ND<0.04	ND<0.02	0.03	ND<0.05	1.3	0.048	NA	1.3
Lead		--	ND	0.008	ND<0.001	ND<0.001	ND<0.001	ND<0.013	0.015	0.013	NA	0.015
Manganese		--	--	--	--	--	--	0.063	NE	NE	NA	NE
Iron		--	--	--	--	--	--	ND<0.1	NE	NE	NA	NE
Inorganics (mg/L):												
Alkalinity		--	--	--	--	--	--	26	NE	NE	NE	NE
Ammonia		--	--	--	--	--	--	ND<0.10	NE	NE	NE	NE
Nitrate		--	--	--	--	--	--	0.28	NE	NE	NE	10
Nitrite		--	--	--	--	--	--	ND<0.10	NE	NE	NE	1
Chloride		--	--	--	--	--	--	9.5	NE	NE	NE	NE
Sulfate		--	--	--	--	--	--	15	NE	NE	NE	NE
Sulfide		--	--	--	--	--	--	ND<1.0	NE	NE	NE	NE

Refer to Notes on Page 9 of 9

TABLE I (continued)

RESULTS OF CHEMICAL TESTING OF GROUNDWATER
BOVANO OF CHESHIRE
CHESHIRE, CONNECTICUT

Parameter	Sample Number / Sampling Date	Sep-82	19-Jun-84	29-Jun-95	26-Aug-96	MW-B 8-May-97	28-May-98	21-Jun-99	13-Jun-00	GA Groundwater Protection Criteria	Surface Water Protection Criteria	Industrial Volatilization Criteria	Maximum Contaminant Level
Volatile Organic Compounds (ug/L):													
trans-1,2,-Dichloroethene		--	--	ND	ND<1	ND<1	--	--	ND<1	100	NE	NE	100
cis-1,2-Dichloroethene		--	--	ND	ND<1	ND<1	--	--	ND<1	70	NE	NE	70
Toluene		--	--	ND	ND<1	ND<1	--	--	ND<1	1000	4000000	2615	1000
Trichloroethene		1220	--	ND	ND<1	ND<1	--	--	ND<1	5	2340	16	5
Dissolved Gases (ug/L):													
Methane		--	--	--	--	--	--	--	--	NE	NE	NE	NE
Ethane		--	--	--	--	--	--	--	--	NE	NE	NE	NE
Ethene		--	--	--	--	--	--	--	--	NE	NE	NE	NE
Hydrogen (nM/L)		--	--	--	--	--	--	--	--	NE	NE	NE	NE
Total Organic Carbon (mg/L):		--	--	--	--	--	--	--	--	NE	NE	NE	NE
Total Metals (mg/L):													
Cadmium		--	--	--	0.002	--	--	--	ND<0.005	NA	NA	NA	NA
Chromium		--	--	--	0.04	--	--	--	ND<0.05	NA	NA	NA	NA
Copper		--	--	--	**0.13**	--	--	--	ND<0.05	NA	NA	NA	NA
Lead		--	--	--	**0.151**	--	--	--	ND<0.013	NA	NA	NA	NA
Manganese		--	--	--	--	--	--	--	0.12	NA	NA	NA	NA
Iron		--	--	--	--	--	--	--	ND<0.1	NA	NA	NA	NA
Dissolved Metals (mg/L):													
Cadmium		--	--	ND	ND<0.001	ND<0.001	--	--	ND<0.005	0.005	0.006	NA	0.005
Chromium		--	--	ND	ND<0.02	ND<0.02	--	--	ND<0.05	0.05	NE	NA	0.1
Copper		--	--	ND	ND<0.04	ND<0.04	--	--	ND<0.05	1.3	0.048	NA	1.3
Lead		--	--	ND	0.002	ND<0.001	--	--	ND<0.013	0.015	0.013	NA	0.015
Manganese		--	--	--	--	--	--	--	0.13	NE	NE	NA	NE
Iron		--	--	--	--	--	--	--	ND<0.1	NE	NE	NA	NE
Inorganics (mg/L):													
Alkalinity		--	--	--	--	--	--	--	15	NE	NE	NE	NE
Ammonia		--	--	--	--	--	--	--	--	NE	NE	NE	NE
Nitrate		--	--	--	--	--	--	--	ND<0.10	NE	NE	NE	10
Nitrite		--	--	--	--	--	--	--	ND<0.10	NE	NE	NE	1
Chloride		--	--	--	--	--	--	--	--	NE	NE	NE	NE
Sulfate		--	--	--	--	--	--	--	17	NE	NE	NE	NE
Sulfide		--	--	--	--	--	--	--	--	NE	NE	NE	NE

Refer to Notes on Page 9 of 9

TABLE I (continued)

RESULTS OF CHEMICAL TESTING OF GROUNDWATER
BOVANO OF CHESHIRE
CHESHIRE, CONNECTICUT

Parameter	Sample Number / Sampling Date	19-Jun-84	29-Jun-95	26-Aug-96	MW-C 8-May-97	28-May-98	21-Jun-99	14-Jun-00	GA Groundwater Protection Criteria	Surface Water Protection Criteria	Industrial Volatilization Criteria	Maximum Contaminant Level
Volatile Organic Compounds (ug/L):												
trans-1,2,-Dichloroethene		–	ND	ND<1	ND<1	ND<1	ND<1	ND<1	100	NE	NE	100
cis-1,2-Dichloroethene		–	ND	ND<1	ND<1	ND<1	ND<1	ND<1	70	NE	NE	70
Toluene		–	ND	ND<1	ND<1	ND<1	10.1	ND<1	1000	4000000	2615	1000
Trichloroethene		–	ND	ND<1	ND<1	ND<1	ND<1	ND<1	5	2340	16	5
Dissolved Gases (ug/L):												
Methane		–	–	–	–	–	–	–	NE	NE	NE	NE
Ethane		–	–	–	–	–	–	–	NE	NE	NE	NE
Ethene		–	–	–	–	–	–	–	NE	NE	NE	NE
Hydrogen (nM/L)		–	–	–	–	–	–	–	NE	NE	NE	NE
Total Organic Carbon (mg/L):		–	–	–	–	–	–	–	NE	NE	NE	NE
Total Metals (mg/L):												
Cadmium		–	–	0.003	–	ND<0.001	0.002	ND<0.005	NA	NA	NA	NA
Chromium		–	–	0.14	–	0.02	0.03	ND<0.05	NA	NA	NA	NA
Copper		–	–	0.572	–	0.12	0.22	ND<0.05	NA	NA	NA	NA
Lead		–	–	0.152	–	0.019	0.03	ND<0.013	NA	NA	NA	NA
Manganese		–	–	–	–	–	–	ND<0.05	NA	NA	NA	NA
Iron		–	–	–	–	–	–	0.17	NA	NA	NA	NA
Dissolved Metals (mg/L):												
Cadmium		–	ND	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.005	0.005	0.006	NA	0.005
Chromium		–	ND	ND<0.02	ND<0.02	ND<0.02	ND<0.02	ND<0.05	0.05	NE	NA	0.1
Copper		–	ND	ND<0.04	ND<0.04	ND<0.02	ND<0.02	ND<0.05	1.3	0.048	NA	1.3
Lead		–	ND	ND<0.001	ND<0.001	0.001	ND<0.001	ND<0.013	0.015	0.013	NA	0.015
Manganese		–	–	–	–	–	–	ND<0.05	NE	NE	NA	NE
Iron		–	–	–	–	–	–	0.14	NE	NE	NA	NE
Inorganics (mg/L):												
Alkalinity		–	–	–	–	–	–	51	NE	NE	NE	NE
Ammonia		–	–	–	–	–	–	–	NE	NE	NE	NE
Nitrate		–	–	–	–	–	–	0.6	NE	NE	NE	10
Nitrite		–	–	–	–	–	–	ND<0.10	NE	NE	NE	1
Chloride		–	–	–	–	–	–	–	NE	NE	NE	NE
Sulfate		–	–	–	–	–	–	12	NE	NE	NE	NE
Sulfide		–	–	–	–	–	–	–	NE	NE	NE	NE

Refer to Notes on Page 9 of 9

TABLE I

RESULTS OF CHEMICAL TESTING OF GROUNDWATER
BOVANO OF CHESHIRE
CHESHIRE, CONNECTICUT

Parameter	Sample Number Sampling Date	GP-1 24-Jul-97	GA Groundwater Protection Criteria	Surface Water Protection Criteria	Industrial Volatilization Criteria	Maximum Contaminant Level
Volatile Organic Compounds (ug/L):						
trans-1,2,-Dichloroethene		ND<5	100	NE	NE	100
cis-1,2-Dichloroethene		ND<5	70	NE	NE	70
Toluene		ND<5	1000	4000000	2615	1000
Trichloroethene		ND<5	5	2340	16	5
Dissolved Gases (ug/L):						
Methane		--	NE	NE	NE	NE
Ethane		--	NE	NE	NE	NE
Ethene		--	NE	NE	NE	NE
Hydrogen (nM/L)		--	NE	NE	NE	NE
Total Organic Carbon (mg/L):		--	NE	NE	NE	NE
Total Metals (mg/L):						
Cadmium		--	NA	NA	NA	NA
Chromium		--	NA	NA	NA	NA
Copper		--	NA	NA	NA	NA
Lead		--	NA	NA	NA	NA
Manganese		--	NA	NA	NA	NA
Iron		--	NA	NA	NA	NA
Dissolved Metals (mg/L):						
Cadmium		--	0.005	0.006	NA	0.005
Chromium		--	0.05	NE	NA	0.1
Copper		--	1.3	0.048	NA	1.3
Lead		--	0.015	0.013	NA	0.015
Manganese		--	NE	NE	NA	NE
Iron		--	NE	NE	NA	NE
Inorganics (mg/L):						
Alkalinity		--	NE	NE	NE	NE
Ammonia		--	NE	NE	NE	NE
Nitrate		--	NE	NE	NE	10
Nitrite		--	NE	NE	NE	1
Chloride		--	NE	NE	NE	NE
Sulfate		--	NE	NE	NE	NE
Sulfide		--	NE	NE	NE	NE

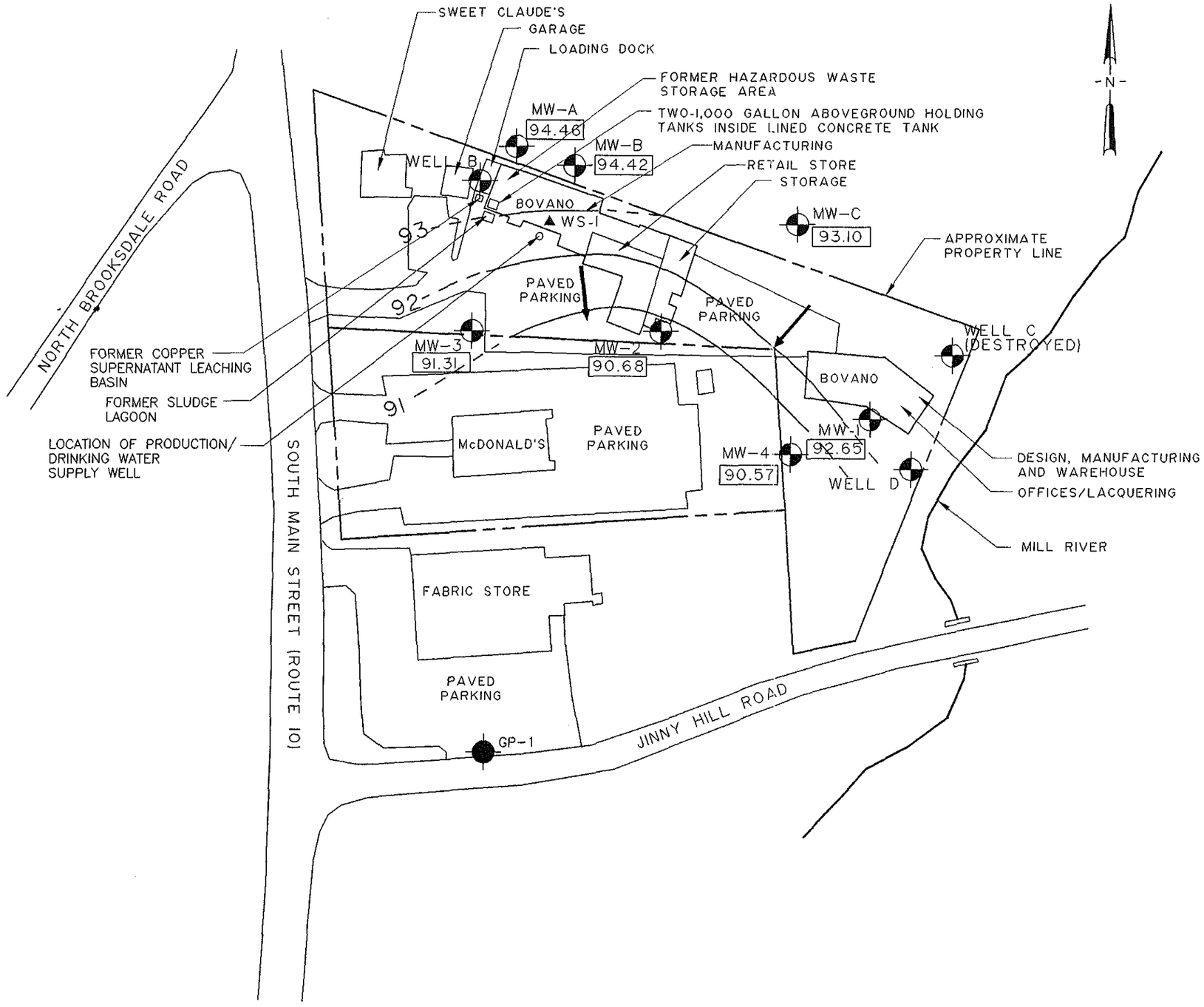
Refer to Notes on Page 9 of 9

TABLE I

RESULTS OF CHEMICAL TESTING OF GROUNDWATER
BOVANO OF CHESHIRE
CHESHIRE, CONNECTICUT

Notes:

1. Complete laboratory results June 2000 sampling event are presented in Appendix B.
2. Sept-82 groundwater results are taken from a TRC Environmental Consultants, Inc. (TRC) report on "Preliminary Report of Ground Water Investigation at Bovano Industries of Cheshire" dated November 1982.
3. Jun-84 groundwater results are taken from a TRC report on "Technical Report to Bovano Industries on Ground Water Investigations" dated 13 July 1984.
4. May-95 groundwater results are taken from a letter to Bovano Industries from the CTDEP dated 11 July 1985.
5. 29-Jun-95 groundwater results are taken from an HRP Associates, Inc. report on "Phase I Environmental Site Assessment, Bovano of Cheshire, 830 South Main Street, Cheshire, Connecticut (HRP# BOV-0002.P2)" dated 27 July 1995.
6. GA Groundwater Protection Criteria, Surface Water Criteria, and Industrail Volitalization Criteria for groundwater are from Appendices C, D and E of the CTDEP Remediation Standard Regulations.
7. ND<1 means the analyte was not detected at or above the laboratory detection limit.
8. Refer to Figure 2 "Site Plan" for sampling locations.
9. Values printed in bold are at or exceed relevant criteria.
10. NE means a regulatory criterion has not been established for this parameter.
11. NA means not applicable.
12. – means parameter not tested for.
13. Sample GP-1 was collected in the Town of Cheshire Right-of-Way along the north side of Jinny Hill Road. Refer to Figure 2.



LEGEND

MW-C MW-2 WELL B	EXISTING MONITOR WELL INSTALLED BY OTHERS
92.65	GROUNDWATER ELEVATION BASED ON MEASUREMENTS MADE FROM TOP OF CASING BY HALEY & ALDRICH, INC. ON 14 JUNE 2000 AND A RELATIVE ELEVATION LEVEL SURVEY PERFORMED BY HRP ASSOCIATES, INC. IN 1995 USING A SITE DATUM OF 100 FT.
WS-1	APPROXIMATE LOCATION OF WATER SUPPLY WELL SAMPLE COLLECTED BY HALEY & ALDRICH, INC. ON 9 AUGUST 1996.
GP-1	APPROXIMATE LOCATION OF GROUNDWATER SAMPLE COLLECTED USING GEOPROBE SAMPLING TECHNIQUES.
91	APPROXIMATE GROUNDWATER TABLE CONTOUR WITH RELATIVE ELEVATION ON 14 JUNE 2000. LINE IS DASHED WHERE INFERRED.
	APPROXIMATE DIRECTION OF GROUNDWATER FLOW

NOTE

1. SITE PLAN BASED ON FIGURE 1 OF A HRP ASSOCIATES, INC. REPORT ON "PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT, BOVANO INDUSTRIES, INC. 830 SOUTH MAIN STREET, CHESHIRE, CONNECTICUT HRP#BOV-2000.P2" DATED 27 JULY 1995.

0 100 200
SCALE IN FEET

HALEY & ALDRICH
UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

BOVANO OF CHESHIRE
830 SOUTH MAIN STREET
CHESHIRE, CONNECTICUT

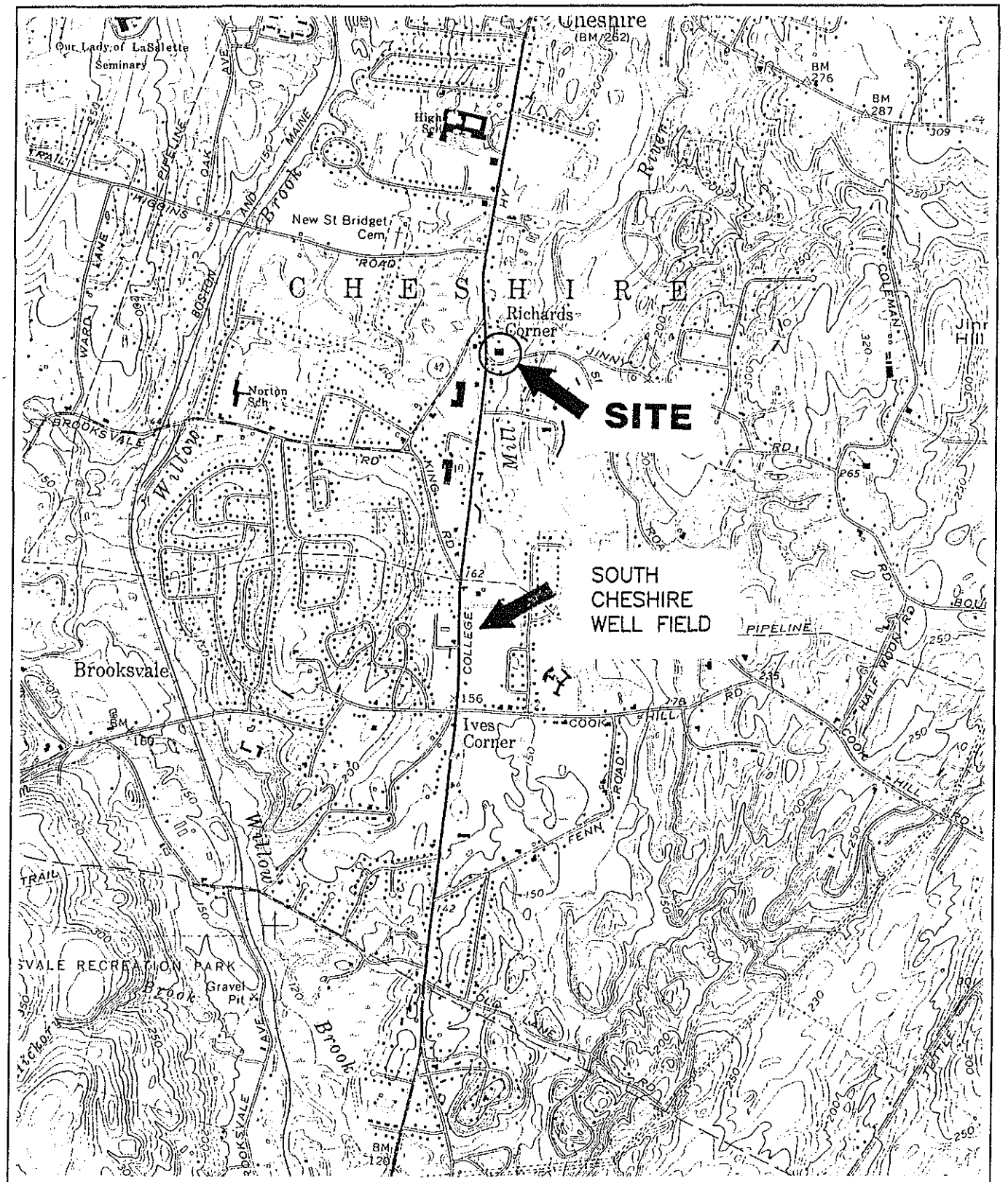
SITE PLAN

SCALE: AS SHOWN

SEPTEMBER 2000

26269-400 B04

FIGURE 2



SITE COORDINATES: 41°28'51.48N" 072°54'19.49W"

U.S.G.S. QUADRANGLE: MOUNT CARMEL, CONNECTICUT

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

BOVANO OF CHESHIRE
830 SOUTH MAIN STREET
CHESHIRE, CONNECTICUT

PROJECT LOCUS

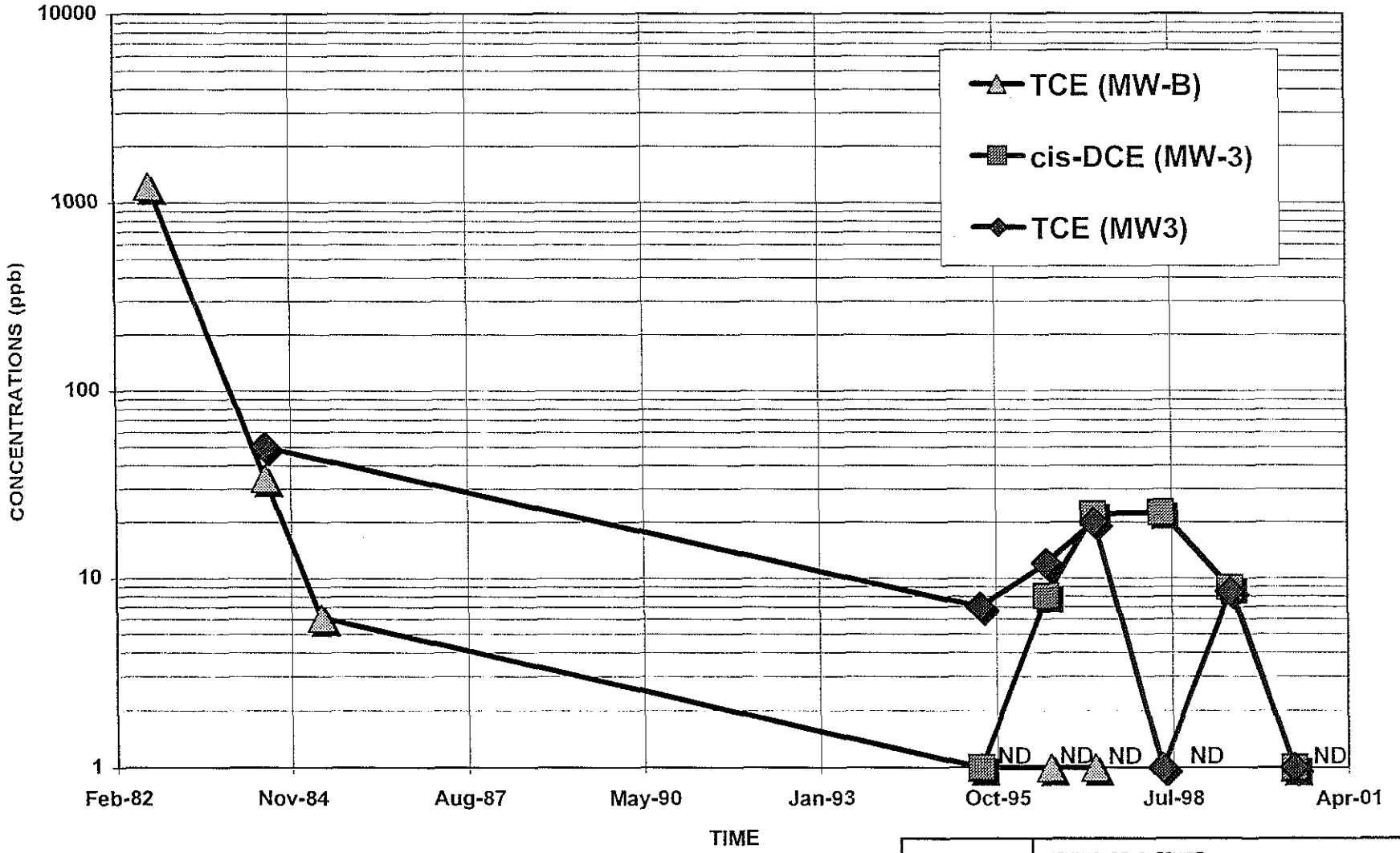
SCALE: 1:24,000

SEPTEMBER 2000

26269-400 A01

FIGURE 1

26269-400 A03



HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

BOVANO OF CHESHIRE
830 SOUTH MAIN STREET
CHESHIRE, CONNECTICUT

TCE AND cis-DCE CONCENTRATIONS
MW-B AND MW-3

NOT TO SCALE

OCTOBER 2000

FIGURE 3

APPENDIX A

Chemical Testing Results - Groundwater

COMPLETE ENVIRONMENTAL TESTING, INC.

80 Lupes Drive
Stratford, CT 06615

Tel: (203) 377-9984
Fax: (203) 377-9952
e-mail: cet@cetlabs.com

June 21, 2000

Mr. Jeff Duigou
Haley & Aldrich
110 National Dr.
Glastonbury, CT 06033

JUN 26 2000

Project: CONN/STEP
Project #: 26269-400
CET #: 00060479
Water: MW-3; MW-A; MW-B; MW-C
Collection Date(s): 6/13/00; 6/14/00

ANALYSIS:

Alkalinity, Tot(CaCO3) [EPA 310.2] Units: mg/l Analysis Date: 6/15/00

	MW-B	MW-C	MW-A	MW-3
Alkalinity, Tot(CaCO3)	15	51	26	33

Chloride [EPA 300.0] Units: mg/l Analysis Date: 6/15/00

	MW-A	MW-3
Chloride	9.5	13

Sulfide [EPA 376.2] Units: mg/l Analysis Date: 6/15/00

	MW-A	MW-3
Sulfide	ND < 1.0	ND < 1.0

Ammonia as N [EPA 350.1] Units: mg/l Analysis Date: 6/15/00

	MW-A	MW-3
Ammonia as N	ND < 0.10	ND < 0.10

Nitrite as N [EPA 300.0] Units: mg/l Analysis Date: 6/15/00

	MW-B	MW-C	MW-A	MW-3
Nitrite as N	ND < 0.10	ND < 0.10	ND < 0.10	ND < 0.10

NOTES:
[] Indicates Date Prep Test Completed; ND is Not Detected.

Connecticut Laboratory Certification PH 0116
Massachusetts Laboratory Certification M-CT903
Rhode Island Laboratory Certification 199

Nitrate as N [EPA 300.0] Units: mg/l Analysis Date: 6/15/00

	MW-B	MW-C	MW-A	MW-3
Nitrate as N	ND < 0.10	0.60	0.28	1.7

Sulfate [EPA 300.0] Units: mg/l Analysis Date: 6/15/00

	MW-B	MW-C	MW-A	MW-3
Sulfate	17	12	15	13

Total Organic Carbon [EPA 415.1] Units: mg/l Analysis Date: 6/22/00

	MW-A	MW-3
Total Organic Carbon	2.6	1.4

Total Metals [EPA 200.7] Units: mg/l Analysis Date: 6/15/00

	MW-B	MW-C	MW-A	MW-3
Lead	ND < 0.013	ND < 0.013	ND < 0.013	ND < 0.013
Cadmium	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005
Chromium	ND < 0.05	ND < 0.05	ND < 0.05	ND < 0.05
Copper	ND < 0.05	ND < 0.05	ND < 0.05	ND < 0.05
Manganese	0.12	ND < 0.05	0.063	ND < 0.05
Iron	ND < 0.10	0.17	ND < 0.10	ND < 0.10

Dissolved Metals [EPA 200.7] Units: mg/l Analysis Date: 6/15/00

	MW-B	MW-C	MW-A	MW-3
Lead	ND < 0.013	ND < 0.013	ND < 0.013	ND < 0.013
Cadmium	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005
Chromium	ND < 0.05	ND < 0.05	ND < 0.05	ND < 0.05
Copper	ND < 0.05	ND < 0.05	ND < 0.05	ND < 0.05
Manganese	0.13	ND < 0.05	0.063	ND < 0.05
Iron	ND < 0.10	0.14	ND < 0.10	ND < 0.10

Volatile Organics [EPA 8260] Units: ug/l Analysis Date: 6/17/00

	MW-B	MW-C	MW-A	MW-3
Dichlorodifluoromethane	ND < 10	ND < 10	ND < 10	ND < 10
Chloromethane	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0
Vinyl Chloride	ND < 2.0	ND < 2.0	ND < 2.0	ND < 2.0
Bromomethane	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0
Chloroethane	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0
Trichlorofluoromethane	ND < 25	ND < 25	ND < 25	ND < 25
1,1-Dichloroethene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Methylene Chloride	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0
Methyl-t-Butyl Ether (MTBE)	ND < 10	ND < 10	ND < 10	ND < 10
trans-1,2-Dichloroethene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,1-Dichloroethane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
2,2-Dichloropropane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
cis-1,2-Dichloroethene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Bromochloromethane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Chloroform	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,1,1-Trichloroethane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Carbon Tetrachloride	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,1-Dichloropropene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0

Notes:
[ ]Indicates Date Prep Test Completed; ND is Not Detected.

Volatile Organics [EPA 8260] Units: ug/l Analysis Date: 6/17/00

	MW-B	MW-C	MW-A	MW-3
Benzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,2-Dichloroethane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Trichloroethene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,2-Dichloropropane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Dibromomethane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Bromodichloromethane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
cis-1,3-Dichloropropene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Toluene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
trans-1,3-Dichloropropene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,1,2-Trichloroethane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Tetrachloroethene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,3-Dichloropropane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Dibromochloromethane	ND < 0.50	ND < 0.50	ND < 0.50	ND < 0.50
1,2-Dibromoethane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Chlorobenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,1,1,2-Tetrachloroethane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Ethylbenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
m+p Xylenes	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
o-Xylene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Styrene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Bromoform	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Isopropylbenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,1,2,2-Tetrachloroethane	ND < 0.50	ND < 0.50	ND < 0.50	ND < 0.50
Bromobenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,2,3-Trichloropropane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
n-Propylbenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
2-Chlorotoluene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
4-Chlorotoluene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,3,5-Trimethylbenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
tert-Butylbenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,2,4-Trimethylbenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
sec-Butylbenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,3-Dichlorobenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
4-Isopropyltoluene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,4-Dichlorobenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,2-Dichlorobenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
n-Butylbenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,2-Dibromo-3-Chloropropane	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,2,4-Trichlorobenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Hexachlorobutadiene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
Naphthalene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0
1,2,3-Trichlorobenzene	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0

Sincerely,

David Ditta
Laboratory Director
Ref. Lab: PH0504

Notes:
[ ]Indicates Date Prep Test Completed; ND is Not Detected.

COMPLETE ENVIRONMENTAL TESTING, INC.

80Lupes Drive
Stratford, CT 06615

Tel: (203) 377-9984
Fax: (203) 377-9952
e-mail: cet@cetlabs.com

QA Report

Project: CONN/STEP
CET#: 00060479

QA Type: Nitrite as N Date Analyzed: 6/15/00 QA Sample ID: AA45496

Analyte	SampRes	SpkAmt	SpkRes	SpkDupRes	Spk%Rec	Dup%Rec	RPD	Blank
Nitrite as N	ND<0.10	2.5	2.4	2.1	96	84	13.33	ND<0.05

QA Type: Nitrate as N Date Analyzed: 6/15/00 QA Sample ID: AA45496

Analyte	SampRes	SpkAmt	SpkRes	SpkDupRes	Spk%Rec	Dup%Rec	RPD	Blank
Nitrate as N	1.7	4.52	5.4	5.2	82	77	5.56	ND<0.10

QA Type: Sulfate Date Analyzed: 6/15/00 QA Sample ID: AA45496

Analyte	SampRes	SpkAmt	SpkRes	SpkDupRes	Spk%Rec	Dup%Rec	RPD	Blank
Sulfate	13	20	30	29	85	80	6.06	ND<0.10

QA Type: Total Metals Date Analyzed: 6/15/00 QA Sample ID: AA45555

Analyte	SampRes	SpkAmt	SpkRes	SpkDupRes	Spk%Rec	Dup%Rec	RPD	Blank
Lead	ND<0.013	0.20	0.19	0.19	95	95	0.00	ND<0.013
Cadmium	ND<0.005	0.20	0.19	0.19	95	95	0.00	ND<0.005
Chromium	ND<0.05	0.20	0.20	0.20	100	100	0.00	ND<0.05
Copper	ND<0.05	0.20	0.19	0.19	95	95	0.00	ND<0.05
Manganese	0.18	0.20	0.32	0.32	70	70	0.00	ND<0.05

QA Type: Dissolved Metals Date Analyzed: 6/15/00 QA Sample ID: AA45396

Analyte	SampRes	SpkAmt	SpkRes	SpkDupRes	Spk%Rec	Dup%Rec	RPD	Blank
Lead	ND<0.013	0.20	0.19	0.19	95	95	0.00	ND<0.013
Cadmium	ND<0.005	0.20	0.19	0.19	95	95	0.00	ND<0.005
Chromium	ND<0.05	0.20	0.20	0.20	100	100	0.00	ND<0.05
Copper	ND<0.05	0.20	0.19	0.19	95	95	0.00	ND<0.05
Manganese	0.12	0.20	0.32	0.32	100	100	0.00	ND<0.05

QA Type: Volatile Organics Date Analyzed: 6/17/00 QA Sample ID: AA45396

Analyte	SampRes	SpkAmt	SpkRes	SpkDupRes	Spk%Rec	Dup%Rec	RPD	Blank
1,1-Dichloroethene	ND<1.0	50	69	66	138	132	4.44	ND<1.0
Benzene	ND<1.0	50	54	51	108	102	5.71	ND<1.0
Chlorobenzene	ND<1.0	50	52	49	104	98	5.94	ND<1.0
Toluene	ND<1.0	50	53	51	106	102	3.85	ND<1.0
Trichloroethene	ND<1.0	50	48	46	96	92	4.26	ND<1.0

ND is not detected

Connecticut Laboratory Certification PH0116
Massachusetts Laboratory Certification M-CT903
Rhode Island Laboratory Certification 199

HALEY & ALDRICH
Haley & Aldrich, Inc.
110 National Drive,
Glastonbury, CT 06033

CHAIN OF CUSTODY RECORD

Phone (860) 659-4248
Fax (860) 659-4003

H&A FILE NO.	26269-400	LABORATORY	Complete Environmental Testing	DELIVERY DATE	14 JUNE 2000
PROJECT NAME	CONN/STEP	ADDRESS	Stratford, Connecticut	TURNAROUND TIME	Normal
H&A CONTACT	J. Duigou	CONTACT	Dave Ditta	PROJECT MANAGER	J. Duigou

Sample No.	Date	Time	Depth	Type	VOC 8260	Dissolved Cd, Cr, Cu, & Pb	Total Cd, Cr, Cu, & Pb	Dissolved Fe & Mn	Total Fe & Mn	Sulfate	Nitrate & Nitrite	Chloride	Alkalinity	Sulfide	Ammonia	Total Organic Carbon	Number of Containers
MW-B	6/13/00	1715	—	Water	X	X	X	X		X	X		X				6
MW-C	6/14/00	1200	—	Water	X	X	X	X		X	X		X				6
MW-A	6/14/00	1350	—	Water	X	X	X	X	X	X	X	X	X	X	X	X	9
MW-3	6/14/00	1610	—	Water	X	X	X	X	X	X	X	X	X	X	X	X	9

Comments (special instructions, precautions, additional method numbers, etc.)

Please analyze samples as indicated for:

VOCs by EPA Method 8260

Dissolved Cadmium, Chromium, Copper, & Lead

Total Cadmium, Chromium, Copper, & Lead

Dissolved Iron & Manganese

Total Iron & Manganese

Sulfate

Nitrate & Nitrite

Chloride

Alkalinity

Sulfide

Ammonia

Total Organic Carbon

Sampled and Relinquished by	Received by
Sign [signature]	Sign W. E. Lauck
Print ~~Stephen L. Broussou~~ Roy Prescott	Print W. E. Lauck
Firm Haley & Aldrich, Inc.	Firm LSTS
Date 14 JUNE 2000 Time 1655	Date 14/06/00 Time 1655
Relinquished by	**Received by**
Sign W. E. Lauck	Sign [signature]
Print W. E. Lauck	Print Timothy Fusid
Firm LSTS	Firm CET
Date 6/14/00 Time 1745	Date 6/14/00 Time 1745
Relinquished by	**Received by**
Sign	Sign
Print	Print
Firm	Firm
Date Time	Date Time

LIQUID													
	X											X	VOA Vial
										X			Amber Glass
		X	X	X	X	X	X	X	X		X		Plastic Bottle
Preservative	AF	A	AD	A	AD	A	A	A	A	AC	AE	AF	
Volume	40 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	1 L	250 ml	40 ml	

SOLID													
													VOA Vial
													Amber Glass
													Clear Glass
													Preservative
													Volume

Sampling Comments

Evidence samples were tampered with? YES NO

If YES, please explain in section below.

PRESERVATION KEY

A Sample chilled C NaOH E H_2SO_4 G Methanol
B Sample filtered D HNO_3 F HCL H Sodium Bisulfate

Form #3204

COMPLETE ENVIRONMENTAL TESTING, INC.

80 Lupes Drive
Stratford, CT 06615

Tel: (203) 377-9984
Fax: (203) 377-9952
e-mail: cet@cetlabs.com

June 21, 2000

Mr. Jeff Duigou
Haley & Aldrich
110 National Dr.
Glastonbury, CT 06033

Project: CONN/STEP
Project #: 26269-400
CET #: 00060495
Water: MW-1; MW-2; MW-4
Collection Date(s): 6/14/00

ANALYSIS:

Alkalinity, Tot(CaCO3) [EPA 310.2] Units: mg/l Analysis Date: 6/15/00

	MW-4	MW-2	MW-1
Alkalinity, Tot(CaCO3)	280	260	250

Chloride [EPA 300.0] Units: mg/l Analysis Date: 6/15/00

	MW-4	MW-2
Chloride	18	19

Sulfide [EPA 376.2] Units: mg/l Analysis Date: 6/15/00

	MW-4	MW-2
Sulfide	ND < 1.0	ND < 1.0

Ammonia as N [EPA 350.1] Units: mg/l Analysis Date: 6/15/00

	MW-4	MW-2
Ammonia as N	2.8	ND < 0.10

Nitrite as N [EPA 300.0] Units: mg/l Analysis Date: 6/15/00

	MW-4	MW-2	MW-1
Nitrite as N	ND < 0.10	ND < 0.10	ND < 0.10

NOTES:
[ ] Indicates Date Prep Test Completed; ND is Not Detected.

Connecticut Laboratory Certification PH 0116
Massachusetts Laboratory Certification M-CT903
Rhode Island Laboratory Certification 199

Nitrate as N [EPA 300.0] Units: mg/l Analysis Date: 6/15/00

	MW-4	MW-2	MW-1
Nitrate as N	1.5	1.5	1.1

Sulfate [EPA 300.0] Units: mg/l Analysis Date: 6/15/00

	MW-4	MW-2	MW-1
Sulfate	13	14	12

Total Organic Carbon [EPA 415.1] Units: mg/l Analysis Date: 6/22/00

	MW-4	MW-2
Total Organic Carbon	2.0	6.4

Total Metals [EPA 200.7] Units: mg/l Analysis Date: 6/16/00

	MW-4	MW-2	MW-1
Lead	ND < 0.013	ND < 0.013	ND < 0.013
Cadmium	ND < 0.005	ND < 0.005	ND < 0.005
Chromium	ND < 0.05	ND < 0.05	ND < 0.05
Copper	ND < 0.05	ND < 0.05	ND < 0.05
Manganese	ND < 0.05	ND < 0.05	ND < 0.05
Iron	ND < 0.10	ND < 0.10	ND < 0.10

Dissolved Metals [EPA 200.7] Units: mg/l Analysis Date: 6/16/00

	MW-4	MW-2	MW-1
Lead	ND < 0.013	ND < 0.013	ND < 0.013
Cadmium	ND < 0.005	ND < 0.005	ND < 0.005
Chromium	ND < 0.05	ND < 0.05	ND < 0.05
Copper	ND < 0.05	ND < 0.05	ND < 0.05
Manganese	ND < 0.05	ND < 0.05	ND < 0.05
Iron	ND < 0.05	ND < 0.05	ND < 0.05

Volatile Organics [EPA 8260] Units: ug/l Analysis Date: 6/18/00

	MW-4	MW-2	MW-1
Dichlorodifluoromethane	ND < 10	ND < 10	ND < 10
Chloromethane	ND < 5.0	ND < 5.0	ND < 5.0
Vinyl Chloride	ND < 2.0	ND < 2.0	ND < 2.0
Bromomethane	ND < 5.0	ND < 5.0	ND < 5.0
Chloroethane	ND < 5.0	ND < 5.0	ND < 5.0
Trichlorofluoromethane	ND < 25	ND < 25	ND < 25
1,1-Dichloroethene	ND < 1.0	ND < 1.0	ND < 1.0
Methylene Chloride	ND < 5.0	ND < 5.0	ND < 5.0
Methyl-t-Butyl Ether (MTBE)	ND < 10	ND < 10	ND < 10
trans-1,2-Dichloroethene	ND < 1.0	ND < 1.0	ND < 1.0
1,1-Dichloroethane	ND < 1.0	ND < 1.0	ND < 1.0
2,2-Dichloropropane	ND < 1.0	ND < 1.0	ND < 1.0
cis-1,2-Dichloroethene	ND < 1.0	ND < 1.0	ND < 1.0
Bromochloromethane	ND < 1.0	ND < 1.0	ND < 1.0
Chloroform	ND < 1.0	ND < 1.0	ND < 1.0
1,1,1-Trichloroethane	ND < 1.0	ND < 1.0	ND < 1.0
Carbon Tetrachloride	ND < 1.0	ND < 1.0	ND < 1.0
1,1-Dichloropropene	ND < 1.0	ND < 1.0	ND < 1.0

Notes:
[ ]Indicates Date Prep Test Completed; ND is Not Detected.

Volatile Organics [EPA 8260] Units: ug/l Analysis Date: 6/18/00

	MW-4	MW-2	MW-1
Benzene	ND < 1.0	ND < 1.0	ND < 1.0
1,2-Dichloroethane	ND < 1.0	ND < 1.0	ND < 1.0
Trichloroethene	ND < 1.0	ND < 1.0	ND < 1.0
1,2-Dichloropropane	ND < 1.0	ND < 1.0	ND < 1.0
Dibromomethane	ND < 1.0	ND < 1.0	ND < 1.0
Bromodichloromethane	ND < 1.0	ND < 1.0	ND < 1.0
cis-1,3-Dichloropropene	ND < 1.0	ND < 1.0	ND < 1.0
Toluene	ND < 1.0	ND < 1.0	ND < 1.0
trans-1,3-Dichloropropene	ND < 1.0	ND < 1.0	ND < 1.0
1,1,2-Trichloroethane	ND < 1.0	ND < 1.0	ND < 1.0
Tetrachloroethene	ND < 1.0	ND < 1.0	ND < 1.0
1,3-Dichloropropane	ND < 1.0	ND < 1.0	ND < 1.0
Dibromochloromethane	ND < 0.50	ND < 0.50	ND < 0.50
1,2-Dibromoethane	ND < 1.0	ND < 1.0	ND < 1.0
Chlorobenzene	ND < 1.0	ND < 1.0	ND < 1.0
1,1,1,2-Tetrachloroethane	ND < 1.0	ND < 1.0	ND < 1.0
Ethylbenzene	ND < 1.0	ND < 1.0	ND < 1.0
m+p Xylenes	ND < 1.0	ND < 1.0	ND < 1.0
o-Xylene	ND < 1.0	ND < 1.0	ND < 1.0
Styrene	ND < 1.0	ND < 1.0	ND < 1.0
Bromoform	ND < 1.0	ND < 1.0	ND < 1.0
Isopropylbenzene	ND < 1.0	ND < 1.0	ND < 1.0
1,1,2,2-Tetrachloroethane	ND < 0.50	ND < 0.50	ND < 0.50
Bromobenzene	ND < 1.0	ND < 1.0	ND < 1.0
1,2,3-Trichloropropane	ND < 1.0	ND < 1.0	ND < 1.0
n-Propylbenzene	ND < 1.0	ND < 1.0	ND < 1.0
2-Chlorotoluene	ND < 1.0	ND < 1.0	ND < 1.0
4-Chlorotoluene	ND < 1.0	ND < 1.0	ND < 1.0
1,3,5-Trimethylbenzene	ND < 1.0	ND < 1.0	ND < 1.0
tert-Butylbenzene	ND < 1.0	ND < 1.0	ND < 1.0
1,2,4-Trimethylbenzene	ND < 1.0	ND < 1.0	ND < 1.0
sec-Butylbenzene	ND < 1.0	ND < 1.0	ND < 1.0
1,3-Dichlorobenzene	ND < 1.0	ND < 1.0	ND < 1.0
4-Isopropyltoluene	ND < 1.0	ND < 1.0	ND < 1.0
1,4-Dichlorobenzene	ND < 1.0	ND < 1.0	ND < 1.0
1,2-Dichlorobenzene	ND < 1.0	ND < 1.0	ND < 1.0
n-Butylbenzene	ND < 1.0	ND < 1.0	ND < 1.0
1,2-Dibromo-3-Chloropropane	ND < 1.0	ND < 1.0	ND < 1.0
1,2,4-Trichlorobenzene	ND < 1.0	ND < 1.0	ND < 1.0
Hexachlorobutadiene	ND < 1.0	ND < 1.0	ND < 1.0
Naphthalene	ND < 1.0	ND < 1.0	ND < 1.0
1,2,3-Trichlorobenzene	ND < 1.0	ND < 1.0	ND < 1.0

Sincerely,

David Ditta
Laboratory Director
Ref. Lab: PH0504

Notes:
[ ]Indicates Date Prep Test Completed; ND is Not Detected.

COMPLETE ENVIRONMENTAL TESTING, INC.

80Lupes Drive
Stratford, CT 06615

Tel: (203) 377-9984
Fax: (203) 377-9952
e-mail: cet@cetlabs.com

QA Report

Project: CONN/STEP
CET#: 00060495

QA Type: Total Metals Date Analyzed: Volatile Organics QA Sample ID: 6/16/00

Analyte	SampRes	SpkAmt	SpkRes	SpkDupRes	Spk%Rec	Dup%Rec	RPD	Blank
Lead	ND<0.013	0.20	0.20	0.19	100	95	5.10	ND<0.013
Cadmium	ND<0.005	0.20	0.20	0.19	100	95	5.10	ND<0.005
Chromium	ND<0.05	0.20	0.20	0.20	100	100	0.00	ND<0.05
Copper	ND<0.05	0.20	0.20	0.20	100	100	0.00	ND<0.05

QA Type: Dissolved Metals Date Analyzed: AA45563 QA Sample ID: 6/19/00

Analyte	SampRes	SpkAmt	SpkRes	Spk%Rec	Blank
1,1-Dichloroethene	1.4	50	45	87	ND<1.0
Benzene	ND<1.0	50	44	88	ND<1.0
Chlorobenzene	ND<1.0	50	60	120	ND<1.0
Toluene	ND<1.0	50	44	88	ND<1.0
Trichloroethene	ND<1.0	50	43	86	ND<1.0

ND is not detected

HALEY & ALDRICH
Haley & Aldrich, Inc.
110 National Drive,
Glastonbury, CT 06033

CHAIN OF CUSTODY RECORD

Phone (860) 659-4248
Fax (860) 659-4003

H&A FILE NO.	26269-400	LABORATORY	Complete Environmental Testing	DELIVERY DATE	15 JUN 2000
PROJECT NAME	CONN/STEP	ADDRESS	Stratford, Connecticut	TURNAROUND TIME	Normal
H&A CONTACT	J. Duigou	CONTACT	Dave Ditta	PROJECT MANAGER	J. Duigou

Analysis Requested

Sample No.	Date	Time	Depth	Type	VOC 8260	Dissolved Cd, Cr, Cu, & Pb	Total Cd, Cr, Cu, & Pb	Dissolved Fe & Mn	Total Fe & Mn	Sulfate	Nitrate & Nitrite	Chloride	Alkalinity	Sulfide	Ammonia	Total Organic Carbon	Number of Containers
MW-4	6/14/00	1815	—	Water	X	X	X	X	X	X	X	X	X	X	X	X	9
MW-2	6/14/00	2000	—	Water	X	X	X	X	X	X	X	X	X	X	X	X	9
MW-1	6/14/00	2015	—	Water	X	X	X	X		X	X		X				6

Comments (special instructions, precautions, additional method numbers, etc.)

Please analyze samples as indicated for:

VOCs by EPA Method 8260

Dissolved Cadmium, Chromium, Copper, & Lead

Total Cadmium, Chromium, Copper, & Lead

Dissolved Iron & Manganese

Total Iron & Manganese

Sulfate

Nitrate & Nitrite

Chloride

Alkalinity

Sulfide

Ammonia

Total Organic Carbon

Sampled and Relinquished by	Received by
Sign [signature]	Sign E Fanning
Print ~~Stephen J. Brousseau~~ Roy Prescott	Print E. FANNING
Firm Haley & Aldrich, Inc.	Firm CET
Date 15 JUN 2000 Time 1220	Date 6/15/00 Time 12:20
Relinquished by	**Received by**
Sign	Sign
Print	Print
Firm	Firm
Date Time	Date Time
Relinquished by	**Received by**
Sign	Sign
Print	Print
Firm	Firm
Date Time	Date Time

LIQUID

X											X	VOA Vial
									X			Amber Glass
	X	X	X	X	X	X	X	X		X		Plastic Bottle
AF	A	AD	A	AD	A	A	A	A	AC	AE	AF	Preservative
40 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	1 L	250 ml	40 ml	Volume

SOLID

												VOA Vial
												Amber Glass
												Clear Glass
												Preservative
												Volume

PRESERVATION KEY

A Sample chilled	C NaOH	E H_2SO_4	G Methanol
B Sample filtered	D HNO_3	F HCL	H Sodium Bisulfate

Sampling Comments

Evidence samples were tampered with? YES NO

If YES, please explain in section below.

Form #3204

VAPORTECH Services, Inc.

Analytical Laboratory & Geoprobe Sampling

6/21/00

JUN 27 2000

Mr. Jeff Duigou
Haley & Aldrich, Inc.
110 National Drive
Glastonbury, CT 06033

Dear Jeff:

Enclosed are the sample data report, chain of custody record and quality control data for the samples received on June 19, 2000 for your project; 26269-400 Cheshire,CT.

Please give me a call if you have questions or I can be of further assistance. Thank you for using Vaportech Services.

Sincerely,

David J. Masdea

Enclosure:

1158 Pittsburgh Road • Suite 201 • Valencia, PA 16059
Tel.: 724-898-2622 • Fax: 724-898-2633

Vaportech Services, Inc.

HAI1-02327

Haley & Aldrich, Inc.
Project: 26269-400 Cheshire, CT

SAMPLE NAME	HYDROGEN (nM/L)	METHANE (ug/l)	ETHANE (ug/l)	ETHENE (ug/l)	FILE NAME	DATE COLLECTED	DATE RECEIVED	DATE ANALYZED
MW-2	0.5	ND	ND	ND	D10A1.17A	06/14/2000	06/19/2000	06/19/2000
MW-3	0.4	ND	ND	ND	D10A1.18A	06/14/2000	06/19/2000	06/19/2000
MW-4	0.4	ND	ND	ND	D10A1.19A	06/14/2000	06/19/2000	06/19/2000
MW-A	0.4	3.1	ND	ND	D10A1.20A	06/14/2000	06/19/2000	06/19/2000
MDL	0.1	0.2	0.01	0.01				

MDL - denotes lower 'Method Detection Limit'
ND - denotes 'Not Detected' at or above the lower method detection limit

20-Jun-2000

Reviewed By: Melissa Hass

Vaportech Services, Inc.

HAI1-02327

Haley & Aldrich, Inc.
Project: 26269-400 Cheshire, CT

QUALITY CONTROL

CONTINUING CALIBRATION CHECK (FID)

STANDARD: "54"
FILE NAME: D10A1.12A

COMPOUND	KNOWN PPMV	RESULT PPMV	PERCENT DIFFERENCE
Methane	15.00	14.62	2.55
Ethane	15.00	14.95	0.33
Ethene	15.10	15.07	0.23

LABORATORY BLANK RESULTS (FID)

BLANK: CARRIER IN LOOP
FILE NAME: D10A1.11A

COMPOUND	BLANK PPMV	METHOD DETECTION LIMIT PPMV
Methane	ND	1.00
Ethane	ND	0.02
Ethene	ND	0.02

CONTINUING CALIBRATION CHECK (RGD)

STANDARD: "H"
FILE NAME: H2A3.00A
DATE ANALYZED: 06/20/2000

COMPOUND	KNOWN PPMV	RESULT PPMV	PERCENT DIFFERENCE
Hydrogen	1.00	1.02	2.10

LABORATORY BLANK RESULTS (RGD)

BLANK: CARRIER IN LOOP
FILE NAME: H2A3.01A
DATE ANALYZED: 06/20/2000

COMPOUND	BLANK PPMV	METHOD DETECTION LIMIT PPMV
Hydrogen	ND	0.10

ND - denotes 'Not Detected' at or above the lower method detection limit

20-Jun-2000

Reviewed By: Melissa Hoos

ITAI 1-0-237

CHAIN-OF-CUSTODY RECORD

VAPORTECH Services, Inc.

1158 Pittsburgh Road • Suite 201 • Valencia, PA 16059
Tel: 724-898-2622 • Fax: 724-898-2633

Company Name: Haley & Aldrich
Address: 110 National Drive
City: Glastonbury State: CT Zip: 06033
Proj. Manager: J. Duigou
Proj. Location: Cheshire, CT
Proj. Number: 26269-400
Phone # (860) 659-4248 Fax # (860) 659-4003

Sampler's signature :

Analysis Options: Enter letters in Requested Analysis columns below.

A	Light Hydrocarbons	F	BTEX
B	Permanent Gases	G	BTEX & C5 - C10
C	Methane	H	TPH (C4 -C12 range)
D	Methane, Ethane, Ethylene	I	Chlorinated Hydrocarbons
E	Hydrogen	J	624 Compound List

Light Hydrocarbons: Methane, Ethane, Ethylene, Propane, Propylene, iso-Butane, n-Butane
Permanent Gases: Carbon Dioxide, Oxygen, Nitrogen, Methane, Carbon Monoxide
BTEX: Benzene, Toluene, Ethyl Benzene, m & p -Xylene, o-Xylene
C5-C10: Pentane, Hexane, Heptane, Octane, Nonane, Decane
Chlorinated HC: 1,1-DCE, 1,1- DCA, Methylene Chloride, trans-1,2-DCE, cis-1,2-DCE, Chloroform 1,1,1-TCA, Carbon Tetrachloride, Trichloroethylene (TCE), Tetrachloroethylene (PCE)

Collection Date	Collection Time	Number of Containers	Sample Type	Sample Identification	Requested Analysis				(Other)	Remarks
6/14/00	1445	1	Air	MW-A	E					
6/14/00	1655	1	Air	MW-3	E					
6/14/00	1855	1	Air	MW-4	E					
6/14/00	2045	1	Air	MW-2	E					
6/14/00	1445	1	WATER	MW-A	D					
6/14/00	1655	1	WATER	MW-3	D					
6/14/00	1855	1	WATER	MW-4	D					
6/14/00	2045	1	WATER	MW-2	D					

Results to :

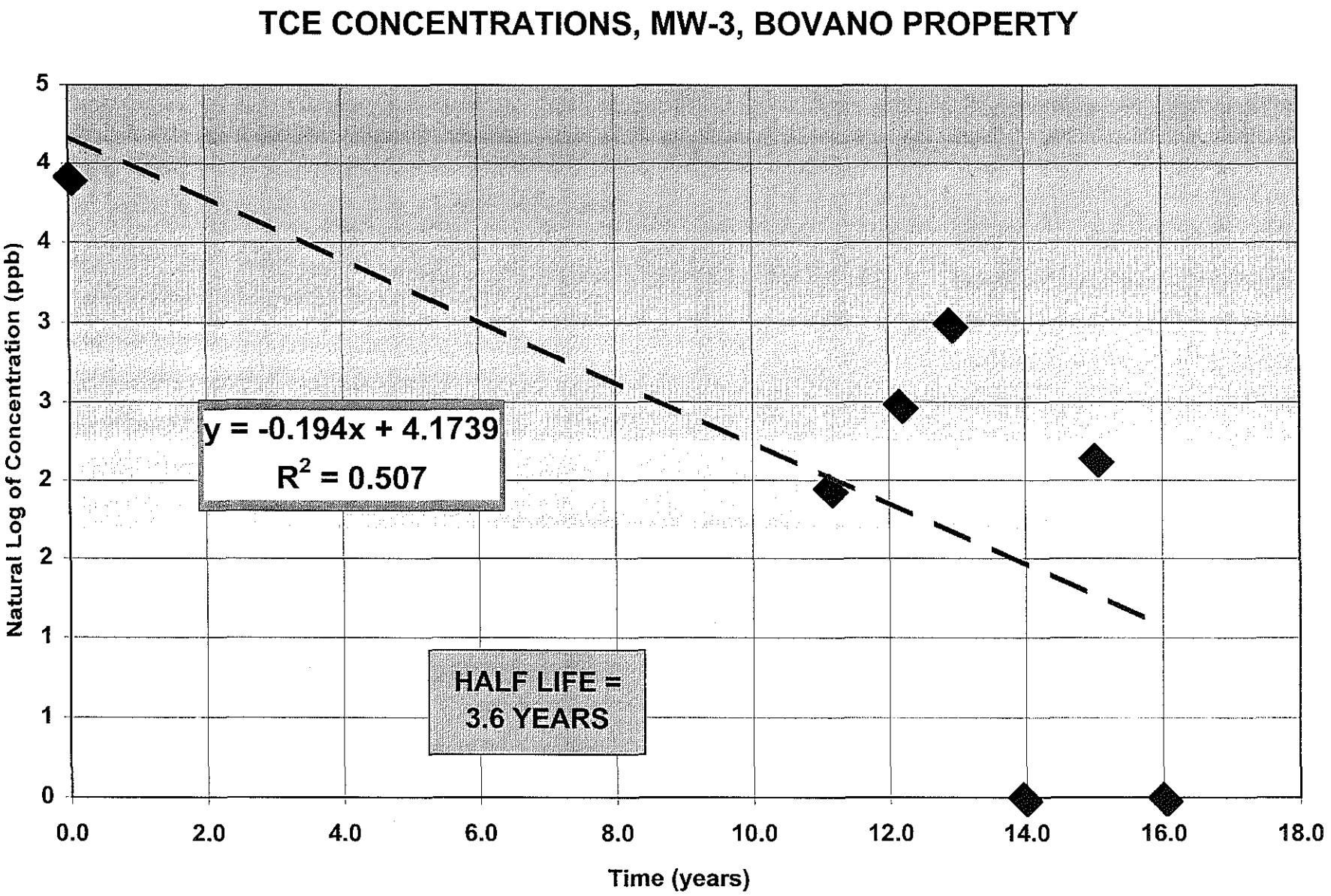
Invoice to :

Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
[signature]	Haley & Aldrich	6/14/00		[signature]	Vaportech	6/19/00	1000
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :

WHITE COPY : Laboratory to return. YELLOW COPY : Laboratory PINK COPY : Submitter

APPENDIX B

Historical Summary of VOCs in Groundwater at MW-3


TCE CONCENTRATIONS, MW-3, BOVANO PROPERTY
Natural Log of Concentration (ppb)
5
4
4
3
3
2
2
1
1
0
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
18.0
Time (years)
y = -0.194x + 4.1739
R2 = 0.507
HALF LIFE =
3.6 YEARS

APPENDIX C

Chemical Testing Results from WS-1

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748-2295
1 (800) 362-8749

F I N A L R E P O R T

Client Information

Account:	Haley & Aldrich, Inc.	Project Name:	Bovano of Cheshire (8-12-96)
Address:	110 National Drive	Project Number:	91017-400
	Glastonbury, CT 06033	*Project Manager:*	*Bill Kay*
		Sampler Name:	J.Duigou

Sample Information

Lab ID:	62254612-006	Date Sampled:	08/09/96 14:15
Client ID:	WS-1	Date Received:	08/12/96 : 0
Matrix:	Water	Date Reported:	08/19/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
SAMPLE PREPARATION						
Metal Digestion	08/13/96			3015		
TRACE METALS						
Cadmium	ND	mg/l	0.001	213.2	kb	08/19/96
Chromium	ND	mg/l	0.02	200.7	th	08/19/96
Copper	1.54	mg/l	0.04	200.7	th	08/19/96
Lead	0.494	mg/l	0.001	239.2	kb	08/16/96
VOLATILE ORGANICS						
Acetone	ND	ug/l	25	8260	lj	08/15/96
Benzene	ND	ug/l	1	8260	lj	08/15/96
Bromodichloromethane	ND	ug/l	1	8260	lj	08/15/96
Bromoform	ND	ug/l	1	8260	lj	08/15/96
Bromomethane	ND	ug/l	1	8260	lj	08/15/96
2-Butanone	ND	ug/l	25	8260	lj	08/15/96
Carbon Tetrachloride	ND	ug/l	0.5	8260	lj	08/15/96
Chlorobenzene	ND	ug/l	1	8260	lj	08/15/96
Chloroethane	ND	ug/l	1	8260	lj	08/15/96
Chloroform	ND	ug/l	1	8260	lj	08/15/96
Chloromethane	ND	ug/l	1	8260	lj	08/15/96
Dibromochloromethane	ND	ug/l	0.5	8260	lj	08/15/96
1,2-Dichlorobenzene	ND	ug/l	1	8260	lj	08/15/96
1,3-Dichlorobenzene	ND	ug/l	1	8260	lj	08/15/96
1,4-Dichlorobenzene	ND	ug/l	1	8260	lj	08/15/96
1,1-Dichloroethane	ND	ug/l	1	8260	lj	08/15/96

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748-2295
1 (800) 362-8749

F I N A L R E P O R T

Client Information

Account:	Haley & Aldrich, Inc.	Project Name:	Bovano of Cheshire (8-12-96)
Address:	110 National Drive	Project Number:	91017-400
	Glastonbury, CT 06033	Project Manager:	Bill Kay
		Sampler Name:	J.Duigou

Sample Information

Lab ID:	62254612-006	Date Sampled:	08/09/96 14:15
Client ID:	WS-1	Date Received:	08/12/96 : 0
Matrix:	Water	Date Reported:	08/19/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
1,2-Dichloroethane	ND	ug/l	1	8260	lj	08/15/96
1,1-Dichloroethene	ND	ug/l	1	8260	lj	08/15/96
cis-1,2-Dichloroethene	ND	ug/l	1	8260	lj	08/15/96
trans-1,2-Dichloroethene	ND	ug/l	1	8260	lj	08/15/96
1,2-Dichloropropane	ND	ug/l	1	8260	lj	08/15/96
cis-1,3-Dichloropropene	ND	ug/l	0.5	8260	lj	08/15/96
trans-1,3-Dichloropropene	ND	ug/l	0.5	8260	lj	08/15/96
Ethylbenzene	ND	ug/l	1	8260	lj	08/15/96
Methylene Chloride	ND	ug/l	4	8260	lj	08/15/96
4-Methyl-2-Pentanone	ND	ug/l	25	8260	lj	08/15/96
MTBE	ND	ug/l	1	8260	lj	08/15/96
1,1,2,2-Tetrachloroethane	ND	ug/l	0.5	8260	lj	08/15/96
Tetrachloroethene	ND	ug/l	1	8260	lj	08/15/96
Toluene	ND	ug/l	1	8260	lj	08/15/96
1,1,1,-Trichloroethane	ND	ug/l	1	8260	lj	08/15/96
1,1,2-Trichloroethane	ND	ug/l	0.5	8260	lj	08/15/96
Trichloroethene	ND	ug/l	1	8260	lj	08/15/96
Trichlorofluoromethane	ND	ug/l	1	8260	lj	08/15/96
Vinyl Chloride	ND	ug/l	0.5	8260	lj	08/15/96
o-Xylene	ND	ug/l	1	8260	lj	08/15/96
p-m-Xylene	ND	ug/l	1	8260	lj	08/15/96
SURROGATE STUDIES - VOLATILES						
Bromofluorobenzene	96	Percent			lj	08/15/96
Dibromofluoromethane	93	Percent			lj	08/15/96

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748-2295
1 (800) 362-8749

F I N A L R E P O R T

Client Information

Account:	Haley & Aldrich, Inc.	Project Name:	Bovano of Cheshire (8-12-96)
Address:	110 National Drive	Project Number:	91017-400
	Glastonbury, CT 06033	Project Manager:	Bill Kay
		Sampler Name:	J.Duigou

Sample Information

Lab ID:	62254612-006	Date Sampled:	08/09/96 14:15
Client ID:	WS-1	Date Received:	08/12/96 : 0
Matrix:	Water	Date Reported:	08/19/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
SURROGATE STUDIES - VOLATILES						
Toluene-D8	105	Percent			lj	08/15/96

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748-2295
1 (800) 362-8749

F I N A L R E P O R T

Client Information

Account:	Haley & Aldrich, Inc.	Project Name:	Bovano of Cheshire (8-12-96)
Address:	110 National Drive	Project Number:	91017-400
	Glastonbury, CT 06033	Project Manager:	Bill Kay
		Sampler Name:	J.Duigou

Sample Information

Lab ID:	62254612-012	Date Sampled:	08/09/96 14:15
Client ID:	WS-1 (Dissolved)	Date Received:	08/12/96 : 0
Matrix:	Water	Date Reported:	08/19/96

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
SAMPLE PREPARATION						
Metal Digestion	08/13/96			3015		
TRACE METALS						
Cadmium	ND	mg/l	0.001	213.2	kb	08/19/96
Chromium	ND	mg/l	0.02	200.7	th	08/19/96
Copper	0.74	mg/l	0.04	200.7	th	08/19/96
Lead	0.016	mg/l	0.001	239.2	kb	08/16/96

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748-2295
1 (800) 362-8749

F I N A L R E P O R T

Client Information

Account:	Haley & Aldrich, Inc.	Project Name:	Bovano (5-8-97)
Address:	10 Harvey Road	Project Number:	91017-402
	Bedford, NH 03110	Project Manager:	Muriel Robinette
		Sampler Name:	Nancy Reid

Sample Information

Lab ID:	71281973-008	Date Sampled:	05/08/97 14:35
Client ID:	WS-1	Date Received:	05/08/97 : 0
Matrix:	Ground Water	Date Reported:	05/15/97

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
SAMPLE PREPARATION						
Metal Digestion	05/08/97			3015		
TRACE METALS						
Cadmium	ND	mg/l	0.001	213.2	kb	05/14/97
Chromium	ND	mg/l	0.02	200.7	th	05/09/97
Copper	ND	mg/l	0.04	200.7	th	05/09/97
Lead	ND	mg/l	0.001	239.2	kb	05/12/97
VOLATILE ORGANICS						
Acetone	ND	ug/l	25	8260	db	05/12/97
Benzene	ND	ug/l	1	8260	db	05/12/97
Bromodichloromethane	ND	ug/l	1	8260	db	05/12/97
Bromoform	ND	ug/l	1	8260	db	05/12/97
Bromomethane	ND	ug/l	1	8260	db	05/12/97
2-Butanone	ND	ug/l	25	8260	db	05/12/97
Carbon Disulfide	ND	ug/l	1	8260	db	05/12/97
Carbon Tetrachloride	ND	ug/l	0.5	8260	db	05/12/97
Chlorobenzene	ND	ug/l	1	8260	db	05/12/97
Chloroethane	ND	ug/l	1	8260	db	05/12/97
Chloroform	ND	ug/l	1	8260	db	05/12/97
Chloromethane	ND	ug/l	1	8260	db	05/12/97
Dibromochloromethane	ND	ug/l	0.5	8260	db	05/12/97
1,2-Dichlorobenzene	ND	ug/l	1	8260	db	05/12/97
1,3-Dichlorobenzene	ND	ug/l	1	8260	db	05/12/97
1,4-Dichlorobenzene	ND	ug/l	1	8260	db	05/12/97

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748-2295
1 (800) 362-8749

F I N A L R E P O R T

Client Information

Account:	Haley & Aldrich, Inc.	Project Name:	Bovano (5-8-97)
Address:	10 Harvey Road	Project Number:	91017-402
	Bedford, NH 03110	Project Manager:	Muriel Robinette
		Sampler Name:	Nancy Reid

Sample Information

Lab ID:	71281973-008	Date Sampled:	05/08/97 14:35
Client ID:	WS-1	Date Received:	05/08/97 : 0
Matrix:	Ground Water	Date Reported:	05/15/97

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
VOLATILE ORGANICS						
1,1-Dichloroethane	ND	ug/l	1	8260	db	05/12/97
1,2-Dichloroethane	ND	ug/l	1	8260	db	05/12/97
1,1-Dichloroethene	ND	ug/l	1	8260	db	05/12/97
cis-1,2-Dichloroethene	ND	ug/l	1	8260	db	05/12/97
trans-1,2-Dichloroethene	ND	ug/l	1	8260	db	05/12/97
1,2-Dichloropropane	ND	ug/l	1	8260	db	05/12/97
cis-1,3-Dichloropropene	ND	ug/l	0.5	8260	db	05/12/97
trans-1,3-Dichloropropene	ND	ug/l	0.5	8260	db	05/12/97
Ethylbenzene	ND	ug/l	1	8260	db	05/12/97
2-Hexanone	ND	ug/l	1	8260	db	05/12/97
Methylene Chloride	ND	ug/l	4	8260	db	05/12/97
4-Methyl-2-Pentanone	ND	ug/l	25	8260	db	05/12/97
MTBE	ND	ug/l	1	8260	db	05/12/97
Styrene	ND	ug/l	1	8260	db	05/12/97
1,1,2,2-Tetrachloroethane	ND	ug/l	0.5	8260	db	05/12/97
Tetrachloroethene	ND	ug/l	1	8260	db	05/12/97
Toluene	ND	ug/l	1	8260	db	05/12/97
1,1,1,-Trichloroethane	ND	ug/l	1	8260	db	05/12/97
1,1,2-Trichloroethane	ND	ug/l	0.5	8260	db	05/12/97
Trichloroethene	ND	ug/l	1	8260	db	05/12/97
Trichlorofluoromethane	ND	ug/l	1	8260	db	05/12/97
Vinyl Acetate	ND	ug/l	1	8260	db	05/12/97
Vinyl Chloride	ND	ug/l	0.5	8260	db	05/12/97
o-Xylene	ND	ug/l	1	8260	db	05/12/97
p-m-Xylene	ND	ug/l	1	8260	db	05/12/97

Matrix Analytical, Inc.
106 South Street
Hopkinton, MA 01748-2295
1 (800) 362-8749

F I N A L R E P O R T

Client Information

Account:	Haley & Aldrich, Inc.	Project Name:	Bovano (5-8-97)
Address:	10 Harvey Road	Project Number:	91017-402
	Bedford, NH 03110	Project Manager:	Muriel Robinette
		Sampler Name:	Nancy Reid

Sample Information

Lab ID:	71281973-008	Date Sampled:	05/08/97 14:35
Client ID:	WS-1	Date Received:	05/08/97 : 0
Matrix:	Ground Water	Date Reported:	05/15/97

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
SURROGATE STUDIES - VOLATILES						
Bromofluorobenzene	98	Percent			db	05/12/97
Dibromofluoromethane	98	Percent			db	05/12/97
Toluene-D8	95	Percent			db	05/12/97

Bovano Industries
Cheshire, CT

* * * REPORT OF RESULTS * * *

Your Project ID: Groundwater Date Submitted: 05-28-98

EML Sample ID: 980528-BOV Date(s) Analyzed: 05-28 to 06-04-98

* * * RESULTS REPORTED IN mg/L Unless Otherwise Noted * * *
nd = not detected

MASS ANALYSIS	MW-3	MW-4	WB-1
Cadmium	0.002	0.002	nd<0.001
Copper	0.26	2.53	0.12
Lead	0.016	0.510	0.002
Chromium, total	0.05	0.03	nd<0.02

Technical Reviewer: [signature] Title: [illegible]

Transcriptional Reviewer: [signature] Title: AGM

EML, INC.
WALLINGFORD, CT
CT CERTIFICATION
PH-0608

ENVIRONMENTAL MONITORING LABORATORY, INC.

59 N. PLAINS INDUSTRIAL PARK WALLINGFORD, CONNECTICUT 06492 (203) 284-0555

Bovano Industries
Cheshire, CT

* * * REPORT OF RESULTS * * *

Your Project ID: Groundwater Date Submitted: 05-28-98

EML Sample ID: 980528-BOV Date(s) Analyzed: 05-28 to 06-04-98

* * * RESULTS REPORTED IN mg/L Unless Otherwise Noted * * *
nd = not detected

DISSOLVED METALS	MW-3	MW-4	WS-1
Cadmium	nd<0.001	nd<0.001	nd<0.001
Copper	nd<0.02	nd<0.02	0.09
Lead	nd<0.001	nd<0.001	nd<0.001
Chromium, total	nd<0.02	nd<0.02	nd<0.02

Technical Reviewer: Title: GM

Transcriptional Reviewer: Title: AGM

EML, INC.
WALLINGFORD, CT
CT CERTIFICATION
PH 0809

ENVIRONMENTAL MONITORING LABORATORY, INC.

59 N. PLAINS INDUSTRIAL PARK WALLINGFORD, CONNECTICUT 06492 (203) 284-0555

Bovano Industries
Cheshire, CT

* * * REPORT OF RESULTS * * *

Your Sample ID: Groundwater Date Submitted: 05-28-98

BML Sample ID: 980528-BOV Date(s) Analyzed: 05-28 to 06-04-98

* * * METHOD 8260B * * *
* * * RESULTS REPORTED IN µg/L unless otherwise noted * * *
nd = not detected

	MW-1
1,1,2,2-Tetrachloroethane	nd<0.5
1,1,2-Trichloroethane	nd<0.5
1,1-Dichloroethane	nd<1
1,1-Dichloroethene	nd<1
1,1,1-Trichloroethane	nd<1
1,2-Dichlorobenzene	nd<1
1,2-Dichloroethane	nd<1
1,2-Dichloropropane	nd<1
1,2-trans-Dichloroethene	nd<1
1,2-cis-Dichloroethene	nd<1

* * * REPORT OF RESULTS * * *

Bovano Industries
830 South Main Street
Cheshire, CT 06410
Attn: Mr. Jim Flood

Report Date: July 12, 1999
EML Project ID: 990621-BOV
Your Project ID: Groundwater Monitoring
Date Sampled: 06-21-99
Date Submitted: 06-21-99

*** * * Results Reported in mg/L Unless Otherwise Noted * * ***
nd = not detected

	MW - A Total / Diss.	MW - C Total / Diss.	MW - 1 Total / Diss.
Cadmium	0.014/nd<0.001	0.002/nd<0.001	0.016/nd<0.001
Copper	1.02 / 0.02	0.22 /nd<0.02	12.87 / 0.03
Lead	0.074/nd<0.001	0.030/nd<0.001	0.148/nd<0.001
Chromium, total	0.17 / 0.03	0.03 /nd<0.02	0.09 / 0.02

	MW - 2 Total / Diss.	MW - 3 Total / Diss.	MW - 4 Total / Diss.
Cadmium	0.002/nd<0.001	0.003/nd<0.001	0.003/nd<0.001
Copper	5.74 / 0.02	0.28 /nd<0.02	2.94 /nd<0.02
Lead	5.021/nd<0.001	0.118/nd<0.001	0.501/nd<0.001
Chromium, total	0.18 / 0.03	0.05 /nd<0.02	0.03 /nd<0.02

	MW - 1 Total / Diss.
Cadmium	nd<0.001/nd<0.001
Copper	0.06 /nd<0.02
Lead	0.003/nd<0.001
Chromium, total	nd<0.02 /nd<0.02

EML INC.
WALLINGFORD, CT
CT CERTIFICATION
PH-0909

Technical Reviewer: _____ Title: _____

Transcriptional Reviewer: _____ Title: _____

ENVIRONMENTAL MONITORING LABORATORY, INC.
58 N. PLAINS INDUSTRIAL PARK WALLINGFORD, CONNECTICUT 06492 (203) 284-0555

* * * REPORT OF RESULTS * * *

Bovano Industries
830 South Main Street
Cheshire, CT 06410
Attn: Mr. Jim Flood

Report Date: July 12, 1999
EML Project ID: 990621-BOV
Your Project ID: Groundwater Monitoring
Date Sampled: 06-21-99
Date Submitted: 06-21-99

*** * * METHOD 8260B * * ***
*** * * Results Reported In µg/L Unless Otherwise Noted * * ***
nd = not detected

	WE - 1
1,1,2,2-Tetrachloroethane	nd<0.5
1,1,2-Trichloroethane	nd<0.5
1,1-Dichloroethane	nd<1
1,1-Dichloroethene	nd<1
1,1,1-Trichloroethane	nd<1
1,2-Dichlorobenzene	nd<1
1,2-Dichloroethane	nd<1
1,2-Dichloropropane	nd<1
1,2-trans-Dichloroethene	nd<1
1,2-cis-Dichloroethene	nd<1
1,3-cis-Dichloropropene	nd<0.5
1,3-trans-Dichloropropene	nd<0.5
1,3-Dichlorobenzene	nd<1
1,4-Dichlorobenzene	nd<1
2-Butanone	nd<25
2-Hexanone	nd<1
4-Methyl-2-Pentanone	nd<25
Acetone	nd<25
Benzene	nd<1
Bromoform	nd<1
Bromomethane	nd<1

ENVIRONMENTAL MONITORING LABORATORY, INC.
59 N. PLAINS INDUSTRIAL PARK WALLINGFORD, CONNECTICUT 06492 (203) 264-0555

Bovano Industries
Attn: Mr. Jim Flood

Report Date: July 12, 1999
Report Page: 2 of 2

* * * METHOD 8260B (µg/L) * * *

WB - 1

Carbon Disulfide	nd<1
Carbon Tetrachloride	nd<0.5
Chlorobenzene	nd<1
Chloroethane	nd<1
Chloroform	nd<1
Chloromethane	nd<1
Dibromochloromethane	nd<0.5
Dichlorobromomethane	nd<1
Ethylbenzene	nd<1
Methylene Chloride	nd<4
Methyl-tert-butyl-ether	nd<1
Styrene	nd<1
Tetrachloroethene	nd<1
Toluene	nd<1
Trichloroethene	nd<1
Trichlorofluoromethane	nd<1
Vinyl Acetate	nd<1
Vinyl Chloride	nd<0.5
Xylene, meta-	nd<1
Xylene, ortho-	nd<1
Xylene, para-	nd<1

Technical Reviewer: _____ Title: _____

Transcriptional Reviewer: _____ Title: _____

EML, INC.
WALLINGFORD, CT
CT CERTIFICATION
PH-0509

ENVIRONMENTAL MONITORING LABORATORY, INC.

APPENDIX D

Results of Chemical Testing – 13 June & 15 August 2000
South Cheshire Well Field Effluent

Regional Water Authority

South Central Connecticut Regional Water Authority
90 Sargent Drive, New Haven, Connecticut 06511-5966 (203) 624-6671

September 29, 2000

Mr. Jeff Duigou
Haley & Aldrich

Dear Jeff:

Enclosed please find water quality data representing the South Cheshire Wellfield effluent.

Please contact me should you have any questions. I can be reached at 401-2710.

Sincerely,

Regional Water Authority

Thomas C. Barger
Supervisor of Water Quality

Regional Water Authority, 90 Sargent Drive, New Haven			
Sample Location: **South Cheshire Wellfield Effluent**	**Date of Collection: June 13 & August 15, 2000**		
Physical, Field & Inorganic Data			
Parameters	Concentration	Units	Maximum Contaminant Level
Color	0	Color Units (CU)	15 CU
Turbidity	0.04	NTUs	1 NTU
pH	7.2	Units	>6.4 - <10.0
Free Chlorine	1	mg/L	na
Total Chlorine	1.1	mg/L	na
Odor	0	mg/L	NONE
Water Temperature	13	Degrees C.	na
Ammonia	<0.02	mg/L	na
Nitrite	<0.002	mg/L	1.0 mg/L
Nitrate	2.511	mg/L	10.0 mg/L
Phosphorus as Phosphate	0.32	mg/L	na
Total Phosphate	0.9792	mg/L	na
Total Kjeldahl Nitrogen	<0.01	mg/L	na
Total Organic Carbon	0.59	mg/L	na
Alkalinity	108	mg/L	185 mg/L (SS)
Conductivity	371	umhos/cm	na
Sulfate	15.7	mg/L	250 mg/L (SS)
Aluminum	<0.01	mg/L	na
Lead	<0.001	mg/L	0.015 mg/L (AL)
Iron	<0.01	mg/L	0.30 mg/L (SS)
Manganese	<0.01	mg/L	0.05 mg/L (SS)
Sodium	13.8	mg/L	28.0 mg/L (NL)
Potassium	1.25	mg/L	na
Copper	0.11	mg/L	1.30 mg/l (AL)
Zinc	0.08	mg/L	5.0 mg/L (SS)
Calcium	48.1	mg/L	40.0 mg/L (SS)
Magnesium	5.8	mg/L	na
Hardness	143.990	mg/L	na
Fluoride	0.94	mg/L	0.80-1.20 mg/L
Heterotrophic Plate Count Bacteria	0	cfu/mL	500 cfu/mL (prof)
Total Coliform Bacteria	absent	cfu/mL	<5% positive in month

Sample Location: South Cheshire Wellfield			Date of Collection: June 13 & August 15, 2000		
Organic Data					
Parameters			**Concentration**	**Units**	**Maximum Contaminant Level**
Total Trihalomethanes			<0.5	ug/L	80 ug/L
1,1-Dichloroethane			<0.5	ug/L	na
1,1-Dichloroethylene			<0.5	ug/L	7ug/L
1,1-Dichloropropene			<0.5	ug/L	na
1,1,1-Trichloroethane			<0.5	ug/L	200ug/L
1,1,1,2-Tetrachloroethane			<0.5	ug/L	na
1,1,2-Trichloroethane			<0.5	ug/L	5ug/L
1,1,2,2-Tetrachloroethane			<0.5	ug/L	na
1,2-Dichloroethane			<0.5	ug/L	5ug/L
ortho-Dichlorobenzene			<0.5	ug/L	600ug/L
1,2-Dichloropropane			<0.5	ug/L	5ug/L
1,2,3-Trichlorobenzene			<0.5	ug/L	na
1,2,3-Trichloropropane			<0.5	ug/L	na
1,2,3-Trimethylbenzene			<0.5	ug/L	na
1,2,4-Trichlorobenzene			<0.5	ug/L	70ug/L
1,2,4-Trimethylbenzene			<0.5	ug/L	na
meta-Dichlorobenzene			<0.5	ug/L	na
1,3-Dichloropropane			<0.5	ug/L	na
1,3,5-Trimethylbenzene			<0.5	ug/L	na
para-Dichlorobenzene			<0.5	ug/L	75ug/L
ortho-Chlorotoluene			<0.5	ug/L	na
2,2-Dichloropropane			<0.5	ug/L	na
para-Chlorotoluene			<0.5	ug/L	na
Benzene			<0.5	ug/L	5ug/L
Bromobenzene			<0.5	ug/L	na
Dibromomethane			<0.5	ug/L	na
Bromochloromethane			<0.5	ug/L	na
Bromomethane			<0.5	ug/L	na
cis-1,2-Dichloroethylene			<0.5	ug/L	70ug/L
cis-1,3-Dichloropropylene			<0.5	ug/L	na
Carbon Tetrachloride			<0.5	ug/L	5ug/L
Chlorobenzene			<0.5	ug/L	100ug/L
Dichlorodifluoromethane			<0.5	ug/L	na
Trichlorofluoromethane			<0.5	ug/L	na
Hexachlorobutadiene			<0.5	ug/L	na
Chloroethane			<0.5	ug/L	na
Chloromethane			<0.5	ug/L	na
1,2-Dibromo-3-chloropropane			<0.5	ug/L	na
1,2-Dibromomethane			<0.5	ug/L	na
Ethylbenzene			<0.5	ug/L	700ug/L
Isopropylbenzene			<0.5	ug/L	na
Methylene Chloride			<0.5	ug/L	5ug/L
Xylenes (meta & para & ortho)			<0.5	ug/L	10,000ug/L
Methy T-Butyl Ether			<2.0	ug/L	na
Naphthalene			<0.5	ug/L	na
n-Butylbenzene			<0.5	ug/L	na
n-Propylbenzene			<0.5	ug/L	na
Tetrachloroethylene			<0.5	ug/L	5ug/L
p-Isopropyltoluene			<0.5	ug/L	na
sec-Butylbenzne			<0.5	ug/L	na
Styrene			<0.5	ug/L	110ug/L
trans-1,2-Dichloroethylene			<0.5	ug/L	100ug/L
trans-1,3-Dichloropropylene			<0.5	ug/L	na
tert-Butylbenzene			<0.5	ug/L	na
Trichloroethylene			0.6	ug/L	5ug/L
Toluene			<0.5	ug/L	1000ug/L
Vinyl Chloride			<0.5	ug/L	2ug/L

na - Maximum Contaminant Level has not been established for these chemicals.
SS - Secondary Standard - guidance concentration based on aesthetic characteristics
AL - Action Level - concentration at which further investigation is required
NL - concentration at which public notification is required
prof - professional guidance limit

APPENDIX E

Human Environmental Indicators

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Bovano of Cheshire
Facility Address: 800 South Main Street
Facility EPA ID #: CTD001179316

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   X If yes - check here and continue with #2 below.

   _____ If no - re-evaluate existing data, or

   _____ if data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	___	XX	___	_____
Air (indoors)[2]	___	X	___	_____
Surface Soil (e.g., <2 ft)	___	X	___	_____
Surface Water	___	X	___	_____
Sediment	___	X	___	_____
Subsurf. Soil (e.g., >2 ft)	___	X	___	_____
Air (outdoors)	___	X	___	_____

X If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

_____ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

_____

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

	Potential **Human Receptors** (Under Current Conditions)						
Contaminated Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	____	____	____	____			____
Air (indoors)	____	____	____				
Soil (surface, e.g., <2 ft)	____	____	____	____	____	____	____
Surface Water	____	____			____	____	____
Sediment	____	____			____	____	____
Soil (subsurface e.g., >2 ft)				____			____
Air (outdoors)	____	____	____	____	____		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

____ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

_____
_____
_____
_____
_____

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

5 Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

X YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Bovano of Cheshire facility, EPA ID # CTD001179316, located at 800 S.Main St.,Cheshire CT under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

____ IN - More information is needed to make a determination.

Completed by (signature) [signature] Date 12-Oct-2000
(print) Jeffery J. Duigou
(title) Senior Scientist

Supervisor (signature) _____ *Date* _____
(print) David Lim
(title) Project Manager
(EPA Region or State) Region I

Locations where References may be found:

Haley & Aldrich, Inc.
110 National Drive
Glastonbury, CT 06033

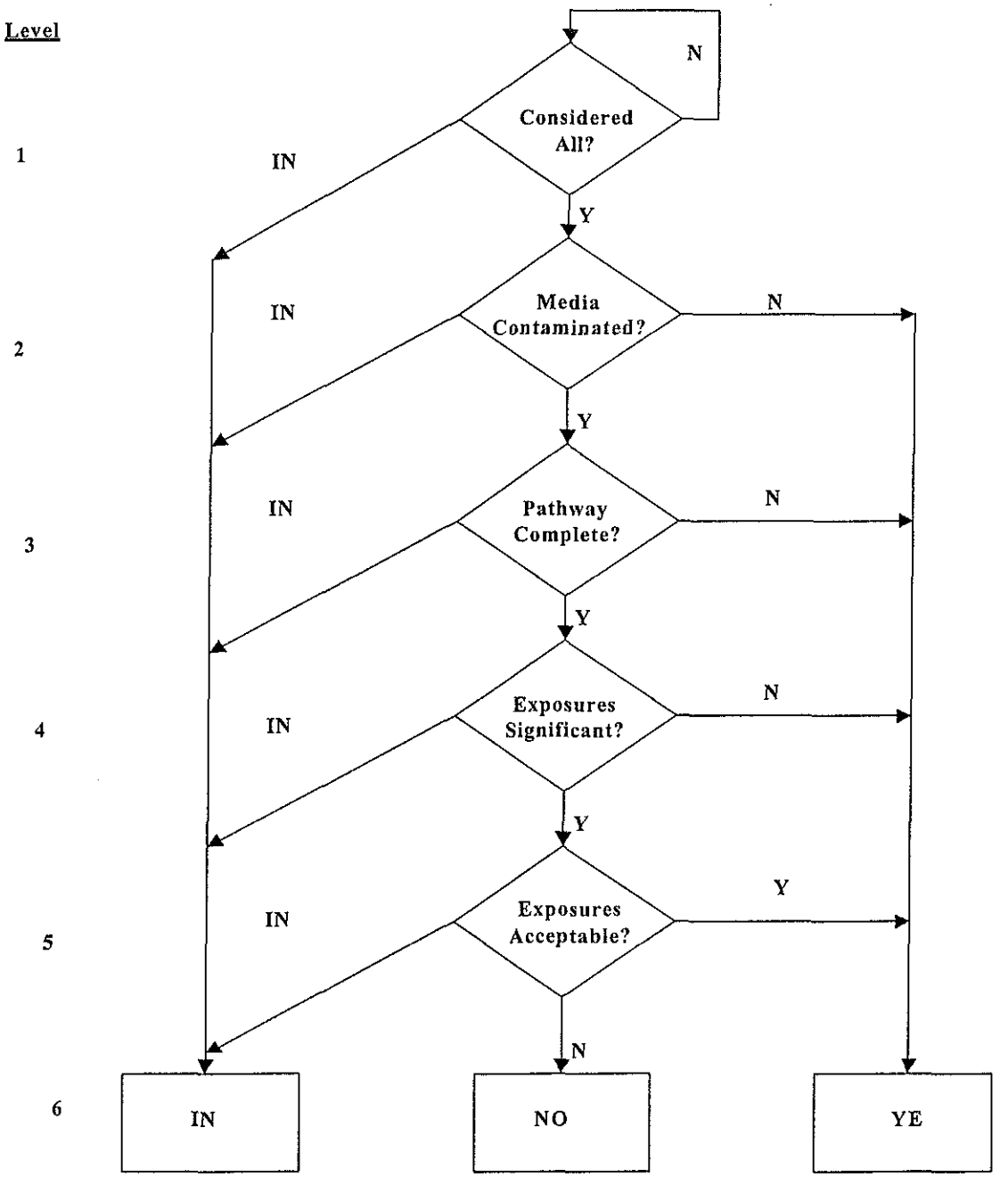
Contact telephone and e-mail numbers

(name) Jeffery J. Duigou
(phone #) 860-659-4248
(e-mail) JJD@haleyaldrich.com

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

Facility Name: Bovano of Cheshire
EPA ID#: CTD 001179316
City/State: Cheshire, Connecticut

CURRENT HUMAN EXPOSURES UNDER CONTROL (CA 725)



APPENDIX F

Groundwater Environmental Indicator

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: Bovano of Cheshire
Facility Address: 800 South Main Street, Cheshire, CT
Facility EPA ID #: CTD 001179316

1. *Has **all** available relevant/significant information on known and reasonably suspected releases to the* groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   _X_ If yes - check here and continue with #2 below.

   ____ If no - re-evaluate existing data, or

   ____ if data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

   _____ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

   __X__ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

   _____ If unknown - skip to #8 and enter "IN" status code.

   Rationale and Reference(s):_____

Footnotes:

[1]"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected *to remain within "existing area of contaminated groundwater"*[2] *as defined by the monitoring locations* designated at the time of this determination)?

_____ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and
Reference(s):_____

[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

_____ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and
Reference(s):_____

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

_____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

_____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

_____ If unknown - enter "IN" status code in #8.

Rationale and
Reference(s):_____

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR
2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):_____

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

_____ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

Rationale and
Reference(s):_____

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

X YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Bovano of Cheshire facility, EPA ID #CTD001179316, located at 800 S. Main St. Cheshire, CT. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

____ IN - More information is needed to make a determination.

Completed by (signature) [signature] Date 12-Oct.-2000
(print) Jeffery J. Duigou
(title) Senior Scientist

Supervisor (signature) ____ Date ____
(print) David Lim
(title) Project Manager
(EPA Region or State) Region I

Locations where References may be found:

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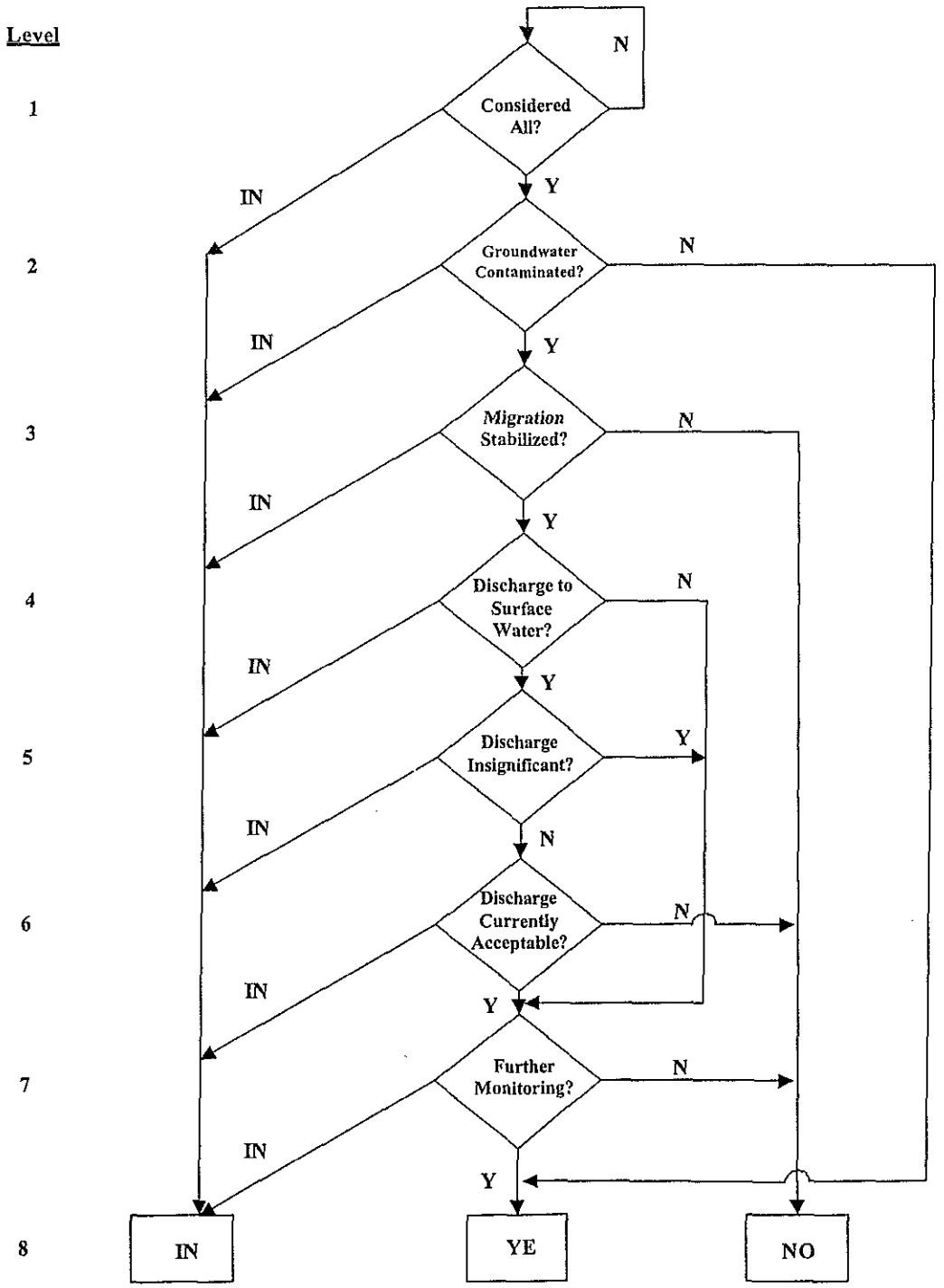
Facility Name: Bovano of Cheshire
EPA ID#: CTD001179316
City/State: Cheshire, CT

MIGRATION OF CONTAMINATED GROUNDWATER UNDER CONTROL (CA 750)