IRM COMPLETION AND REMEDIAL ALTERNATIVES REPORT

Site Name:

Gowanda Day Habilitation Center
4 Industrial Place
Town of Persia, Cattaraugus County
Voluntary Cleanup Program Agreement V-00463-9

Prepared for:

Dormitory Authority of the State of New York
and
New York State Office of Mental Retardation and Developmental Disabilities

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Certification

"I, Robert McCubbin, PE, residing at Bergmann Associates, Rochester, NY certify that at all pertinent times hereinafter mentioned was, a currently registered professional engineer; was the individual who had primary direct responsibility for the implementation of the subject remedial program; and that all requirements of the remedial program have been complied with."

GOWANDA DAY HABILITATION CENTER
4 INDUSTRIAL PLACE
GOWANDA, CATTARAUGUS COUNTY, NY
IRM COMPLETION AND REMEDIAL ALTERNATIVES REPORT
VOLUNTARY CLEANUP PROJECT (V00463-9)

1.0 INTRODUCTION

1.1 Background

Bergmann Associates (Bergmann) is submitting this IRM Completion and Remedial Alternatives Report on behalf of the New York State Office of Mental Retardation and Developmental Disabilities (OMRDD). This report is for the Interim Remedial Measures (IRM) system at the New York State Office of Mental Retardation and Developmental Disabilities (OMRDD) Gowanda Day Habilitation Center (subject parcel). This report has been prepared to evaluate the performance of the IRM system for the 2005 calendar year, summarize other remedial alternatives for the facility, and to evaluate the existing IRM System as the final remedial remedy to allow for future building reuse.

1.2 Completion of a Site Investigation and Supplemental Site Investigation Report

The OMRDD has completed a Site Investigation (SI) in 2002 and a Supplemental Site Investigation (SSI) in 2004 of the subject parcel as part of a Voluntary Cleanup Agreement in accordance with the New York State Voluntary Cleanup Program (VCP) and the New York State Department of Environmental Conservation (NYSDEC). The OMRDD is eligible to participate in the VCP as the volunteer since OMRDD is the present owner of the subject parcel, and is not known to have contributed to any impacted soil and groundwater at the site.

1.3 Site History

The Gowanda Day Habilitation site consists of a 5.94-acre parcel located at 4 Industrial Place in the Village of Gowanda, Cattaraugus County, New York. The location of the subject parcel is shown on Figure 1. The subject parcel was previously developed as the Gowanda Day Habilitation Center building, parking lots, access roads and fields. The building, previously used by several manufacturing operations, was built in stages between circa 1948 and 1987 and was renovated in 1987-1988. New York State agencies have occupied the building since 1982. New York State acquired the parcel in 1989. The building was most recently operated by the Western New York Developmental Disabilities Services Office (WNYDDSO) as a Day Habilitation Center for mental care clients. In April 2001, on-site operations ceased.

Industrial Place is a dead-end street less than a quarter mile in length. Gowanda Electronics, a manufacturing facility, is located on the east side of Industrial Place, across from the subject parcel. Residential properties are located along Torrance Place, north of the subject parcel. Commercial/industrial properties are located along Industrial Place to the east and southeast. Thatcher Creek, a small tributary to Cattaraugus Creek, delineates the western border. A railroad line and vacant land border the subject parcel to the south and southwest.

2.0 NATURE AND EXTENT OF CONTAMINATION

The nature and extent of contamination at the Gowanda Day Habilitation Center was detailed as part of the 2003 Site Investigation (SI) and 2004 Supplemental Site Investigation (SSI) reports. This information was updated with groundwater sampling events conducted in October 2004 and November 2005, along with preparation of groundwater table surface and flow drawings for 2004 and 2005. The locations of groundwater monitoring wells and GTS and SVE recovery wells at the site are shown on Figure 2. The location of indoor air quality sampling points and SVE sub-slab sampling points are shown on Figure 3.

2.1 Hydrogeologic Setting

Subsurface geologic units present at the Gowanda Day Habilitation Center site include the following in ascending order:

- Bedrock, consisting of Devonian-age shale and siltstone deposits (not encountered).
- Glacial till (lodgment or ablation-type glacial till).
- Alluvium deposits from a fluvial depositional regime, consisting of fine gravel, sand, and silt.
- Flood plain deposits consisting of fine sand, silt, and clay.

A filled-in stream channel on the top of the glacial till surface also is apparent at the study site, as an elongated trough or depression. This feature may be a former stream channel that scoured into the relatively impermeable till surface, and was subsequently filled in with permeable alluvial deposits. This apparent trough is oriented in a southwest-to-northeast direction beneath the Gowanda Day Habilitation Center building.

Groundwater occurs in the alluvial sand and gravel unit under unconfined (water table) conditions with saturated thickness of the aquifer ranging from approximately 8.6 to 10.8 feet. The saturated thickness of the aquifer is greater at the southern portion of the study site, and thinner at the eastern and northern areas. Groundwater flow direction is in a generally northerly direction, corresponding with the decrease in the till surface. The water table aquifer likely discharges either into Cattaraugus Creek or into outwash and flood plain deposits approximately 2,400 feet north of the subject parcel.

The 2002 SI report determined hydraulic conductivity for groundwater monitoring wells range from 1.001×10^{-3} to 1.403×10^{-3} cm/sec (2.838 to 3.978 ft/day). Groundwater seepage velocity in the direction of flow was estimated at 0.281 to 0.327 feet per day based on aquifer testing at the monitoring wells. Recharge to the water table aquifer at the subject parcel occurs predominately from up-gradient sources to the south. Although local vertical infiltration of precipitation can occur, the presence of asphalt and the building footprint reduces such an effect.

2.2 Contaminant Characterization

Chemicals of concern were determined based on concentration, frequency of detection, and distribution. Table 1 shows the physical characteristics of the chemical compounds detected in the soil and groundwater at the Day Habilitation Center site. The frequency and range of the

chlorinated VOCs in groundwater samples (as of 2003) are summarized in Table 2. This data is taken from the Bergmann Associates 2003 Supplemental Site Investigation Report.

TABLE 1
PHYSICAL PROPERTIES OF DETECTED
CHLORINATED VOLATILE ORGANIC COMPOUNDS
AT THE GOWANDA DAY HABILITATION CENTER

Chlorinated VOC	Solubility in Water*	Specific Gravity Water =1	Vapor Pressure
Trichloroethene	1,100 mG/L	1.46	60 MM at 20° C
Cis-1,2 Dichloroethene	800 mG/L	1.28	200 MM at 25° C
Trans-1,2 Dichloroethene	600 mG/L	1.26	200 MM at 14° C
Vinyl Chloride	1.1 mG/L	0.92	2,660 MM at 25° C
1,1-Dichloroethene	100 mG/L	1.218	500 MM at 20° C
Tetrachloroethene	150 mG/L	1.626	14 MM at 25° C

This table is modified from the Bergmann Site Investigation Report dated April 2003, page 39.
*Reference: K. Vershcueren, "Handbook of Environmental Data on Organic Chemicals", 2nd Ed, 1983.

The chlorinated VOC Trichloroethene (TCE) is the most commonly detected compound. Biotic decay products cis-1,2,Dichloroethene, trans-1,2-Dichloroethene and Vinyl Chloride were also detected. 1,1-Dichloroethene was detected in 2 groundwater samples from MW-11 and MW-12. This VOC is also a decay/daughter product from TCE or related chlorinated VOCs. Tetrachloroethene was detected in a single groundwater sample, from MW-12, at a concentration of 1.0 uG/L. No other chlorinated solvents were detected in any of the soil or groundwater samples. Table 3 compares the 2003, 2004 and 2005 VOC results.

TABLE 2
FREQUENCY AND RANGE OF DETECTED VOLATILE ORGANIC COMPOUNDS

2002 SITE INVESTIGATION SUMMARY

Chlorinated VOC	Frequency Detected/Total Samples	Concentration Range (ppb)	Solubility in Water
Soil Samples (includes surface samples from garden area)			
Trichloroethene	18/33 samples	14 ppm – 0.003 ppm	Not applicable
cis-1,2-Dichloroethene	14/33 samples	0.940 ppm–0.003 ppm	Not applicable
Trans-1,2-Dichloroethene	2/33 samples	0.01 ppm – 0.003 ppm	Not applicable
Vinyl Chloride	1/33 samples	0.005 ppm	Not applicable
Groundwater Samples			
Trichloroethene	17/17 samples	9,600 ppb – 1.4 ppb	1,100 ppm (110,000 ppb)
cis-1,2-Dichloroethene	14/17 samples	3,000 ppb – 1.7 ppm	800 mg/L
Trans-2,3-Dichloroethene	8/17 samples	28 ppb –1.3 ppb	600 mg/L
Vinyl Chloride	8/17 samples	31 ppb –3.1 ppb	1.1 mg/L
1,1-Dichloroethene	2/17 samples	3.1 ppb-8.3 ppb	100 mg/L
Tetrachloroethene	1/17 samples	1.0 ppb	150 mg/L

TABLE 2 (Continued)

2003 SUPPLEMENTAL SITE INVESTIGATION SUMMARY

Chlorinated VOC	Frequency Detected/Total Samples	Concentration Range (PPB)	Solubility in Water
2003 Test Boring Soil Samples			
Trichloroethene	4/5 samples	0.15 ppm – 0.014 ppm	Not applicable
cis-1,2-Dichloroethene	5/5 samples	0.380 ppm – 0.002 ppm	Not applicable
Trans-1,2-Dichloroethene	0/5 samples	All Non Detect	Not applicable
Vinyl Chloride	0/5 samples	All Non Detect	Not applicable
2003 Groundwater Samples			
Trichloroethene	12/20 samples	15,000 PPB - 7.0 PPB	1,100 PPM (1,100,000 PPB)
cis-1,2-Dichloroethene	16/20 samples	19,000 PPB - 1.8 PPB	800 mG/L (800,000 PPB)
Trans-2,3-Dichloroethene	7/20 samples	120 PPB - 1.5 PPB	600 mG/L (600,000 PPB)
Vinyl Chloride	5/20 samples	54 PPB - 3.7 PPB	1.1 mG/L (1,100 PPB)
1,1-Dichloroethene	2/20 samples	8.2 PPB - 1.4 PPB	100 mG/L (100,000 PPB)

The distributions of the detected chlorinated VOCs for 2004 and 2005 are shown on attached posting maps Figures 4 and 5. These figures show a posting of detected chlorinated VOCs in the groundwater samples, with detected concentrations plotted by each monitoring well.

The occurrence of chlorinated VOCs - TCE and various decay/daughter compounds has been identified and characterized at the subject parcel. The former loading dock/storage area along the southern portion of the Day Habilitation Center building has been identified as the probable source area, with groundwater contamination extending northward. The nature and extent of contamination is discussed in this section corresponding to the environmental media sampled.

2.3 Extent of Impacted Groundwater

Based on the 2002 – through November 2005 groundwater laboratory analysis, a groundwater contamination plume has been identified extending from the inferred source area. The area with the highest impacted groundwater is located beneath the Day Habilitation Center building. The 2003 sampling values showed the monitoring well with the highest total VOC concentration was MW-11, with a Total VOC value of 34,169 PPB. This well is located in the hallway just north of the former Nurses Clinic, Room 39. The monitoring well with the next highest total VOC concentration was MW-12, 2,153 PPB. This well is located in the hallway north of the south cafeteria, Room 50. The July 2003 TCE concentrations in groundwater samples ranged from 15,000 PPB at MW-11 to non-detect in monitoring wells MW-8, MW-9 and MW-10. The highest TCE concentrations detected in the July 2003 samples were from monitoring wells MW-11 (15,000 PPB), MW-12 (9,100 PPB) and MW-1 (1,100 PPB). The 2002 through 2005 laboratory analytical results are summarized in Table 3.

The July 2003 concentrations for the chlorinated VOC cis-DCE closely followed the distribution of TCE. The highest cis-DCE concentrations were detected in monitoring wells MW-11 (19,000

PPB), MW-12 (3,000 PPB) and MW-1 (1,700 PPB). TCE breakdown products trans-DCE and Vinyl chloride were detected in groundwater samples within the area of impacted groundwater.

The July 2003 groundwater sampling analysis indicates that a historical introduction of TCE had occurred at the Day Habilitation Center site, either at or near the southern portion of the building. The 2003 groundwater analysis indicated that the area of greatest concentration is located beneath the building in the vicinity of Room 39/Room 50. This area includes the former loading dock area extending just south of Room 50 and to the adjacent asphalt driveway near MW-1.

The laboratory analysis performed on groundwater samples collected in October 2004 and November 2005 followed the pattern for samples collected in 2002 and 2003, with TCE and cis-1,2-DCE the significant chlorinated VOCs detected. The October 2004 November 2005 sampling and analytical results are shown in Figure 4 and 5, respectively. The November 2005 analysis indicates that the aerial extent of the contamination that exceeds 1,000 PPB (total VOCs) was located mostly beneath the Day Habilitation Center building's foundation. The plume is elongated concurrent with the apparent direction of groundwater flow. The November 2005 groundwater laboratory analytical reporting package is provided as Appendix 1.

TABLE 3
SUMMARY OF TOTAL DETECTED VOCS IN GROUNDWATER,
2002 – 2005 SAMPLING EVENTS

Monitoring Well	Oct. 2005 Total VOCs PPB	2004 Total VOCs PPB	2003 Total VOCs PPB	2002 Total VOCs PPB
MW-12	4,776	6,900	12,100	12,643
MW-11	1,101	2,355	34,169	4,647
MW-1	1,128	1,250	2,879	768
MW-17	1,006	1,154	810	NA
MW-7	455.7	508	534	450
MW-18	375	460	159	NA
MW-21	495.6	436	NA	NA
MW-15	271	320	258	730
MW-6	233	280	333	406
MW-16	65.4	82	38	NA
MW-14	139.9	67	140	315
MW-20	ND	17	NA	NA
MW-19R	20.2	14	10*	NA
MW-5	5.13	6.7	7.3	14
MW-3	8.42	5.6	3.1	15
MW-13	ND	ND	31	315
MW-2	ND	ND	7.1	23
MW-4	ND	ND	1.8	3.8
MW-8	ND	ND	ND	1.4
MW-9	ND	ND	ND	4.2
MW-10	ND	ND	ND	2.6

RECOVERY WELLS (Sampled February 2005)				
DR-1	8,000	NA	NA	NA
DR-2	2,003	NA	NA	NA
DR-3	1,467	NA	NA	NA
DR-4	1,760	NA	NA	NA
G-1	544	NA	NA	NA
G-2	385	NA	NA	NA

ND: Not Detected, all VOCs below Method Detection Limit.
NA: Not Applicable. These wells had not been installed or were not sampled.
* The 2003 value for MW-19R is for nearby well MW-19, removed in July 2003.

2.4 Contaminant Migration

The results of the 2003 SSI field work indicates that surface to near-surface introduction of the TCE apparently occurred immediately south of the building, adjacent to the Client Cafeteria/Room 50, in the former loading dock area. The chemical release(s) occurred prior to 1982, the year that New York State Offices began occupying the building.

Comparison of the distribution of detected VOCs in test boring soil samples, both vertically and laterally to values detected in groundwater samples can assist in evaluating locations where substances were released. The area of highest detected chlorinated solvents in groundwater is an area beneath the building slab, in the vicinity of monitoring wells MW-12, MW-11, MW-1.

The SSI indicated that the highest distribution of detected chlorinated VOCs in the soil samples show that the sample was obtained at a shallow depth from the boring for monitoring well MW-1. This monitoring well is located in the asphalt driveway approximately 5 feet south of the building, across from the Nurse Clinic Room 39. At this location two subsurface soil samples were collected for analyses in 2002. The highest TCE concentration (14.0 PPM) was detected in the sample collected in the 2-4 foot interval. This value represented the highest TCE and total TVOC concentrations detected in the soil samples. The sample collected at the water table at the (8'-10') interval, showed a lower TCE value of 3.6 PPM.

The decrease in chlorinated VOCs at MW-1 location correlating to increased depth below grade, indicated a near surface release mechanism may have been responsible for introducing TCE into the subsurface at the subject parcel. The increase in total VOCs in groundwater down-gradient from this location indicates migration from the area of release. VOC contamination has likely migrated from the suspected area of release at the southern side of the Day Habilitation Center Building downward to the confining till layer.

The July 2003 groundwater analysis indicates that contaminant concentrations of chlorinated VOCs disperse the north, with the area of highest contamination corresponding to the relatively coarse material that has filled in the trough feature scoured into the top of the glacial till surface. The extent of the area of greatest impact to groundwater shows correlation with subsurface geologic condition. The highest concentration of VOCs that that has dissolved into groundwater has moved northward to beneath Room 50, decreasing in concentrations beneath the building

Low concentrations of VOCs were detected in the groundwater sample collected from MW-19, located approximately 175 feet north of the study site's northeastern property corner. MW-19 may be located beyond the plume of impacted groundwater emanating from the Day Habilitation Center property. It possible that MW-19 is located at the margin of the area impacted by the groundwater plume emanating from the Gowanda Electronics property (1 Industrial Place), or is located in an area where the two plumes are co-mingling.

Laboratory analysis was completed on the samples collected from all 21 wells in October 2004. All samples were analyzed for volatile organic compounds via EPA Method 8260. Samples from the additional monitoring wells (MW-19R, MW-20 and MW-21) were analyzed via Analytical Services Protocol. The specific VOCs detected at the subject parcel (TCE cis-1, 2-DCE, trans-1, 2-DCE and Vinyl Chloride) and total VOCs are posted on Figure 4.

Chlorinated VOCs were detected in samples from 15 of the 21 monitoring wells. Total VOCs ranged from Not Detect to 6,900 PPB (MW12). Detected chlorinated VOCs consisted of TCE, decay byproducts Cis-1,2-DCE, Trans-1,2-DCE and Vinyl Chloride. Detected TCE concentrations were greatest at MW-1, MW-11 and MW-12. Detected concentrations of Cis-DCE were greater than detected TCE concentrations at wells along the northern property line. Cis-DCE (along with Trans-DCE and Vinyl Chloride) detected at the subject parcel is likely the product of TCE degradation. Concentrations of the decay product at down-gradient locations can be present in higher concentrations than the parent product at the initial source area.

Trace concentrations of Benzene, Cyclohexane and Isopropylbenzene were detected at MW-20. These compounds are indicative of gasoline, and were not detected in any of the other 20 well samples. The homeowner at #98 Torrance Place previously stored an automobile and a boat very close to MW-20. It is possible that the low concentrations of benzene and related VOCs detected at MW-20 are related to past surface gasoline releases from the vehicles stored at this location, and are not derived from the Day Habilitation Center. A low concentration of cis-DCE at an estimated concentration of 2 PPB was detected at MW-20.

TCE (7 PPB) and cis-DCE (3 PPB) were detected at relatively low concentrations at MW-19R, near the intersection of Torrance Place and Industrial Place. Trace amounts of Tetrachloroethene (1 PPB) and 1,1,1-Trichloroethane (1 PPB) were also detected at MW-19R. These compounds were not detected in past sampling events conducted at the Day Habilitation Center property, but were reportedly detected in groundwater samples collected in 1997 from the nearby AVM-Gowanda Electronics site. It is possible that some of the VOCs detected at MW-19R were the result of migration of impacted groundwater from AVM-Gowanda Electronics.

Groundwater samples were collected from all 21 monitoring wells in November 2005 for laboratory analysis. The samples were shipped via overnight delivery under chain-of-custody protocol to Toxikon Corp of Bedford, MA, a NYSDOH certified analytical laboratory for testing via EPA Method 8260 for the targeted chlorinated VOCs of concern.

The laboratory analytical results on the November 2005 samples are posted on Figure 5. The November 2005 groundwater analysis indicated that TCE concentrations were greatest at MW-1, MW-11 and MW-12, and that contaminant concentrations of chlorinated VOCs disperse the

north. The November 2005 groundwater samples were collected after the IRM system had been operational for six months. VOCS were detected in 14 of 21 well samples, with concentrations ranging from Not Detect to 4,776 PPB (MW-12). The relative concentrations at monitoring wells at which VOCs were detected were generally lower than the values detected in October 2004. Samples from the plume (MW-1, MW-11 and MW-12) and the north perimeter wells all showed decreases in total volatile organic compounds.

The approximate extent of the plume of impacted groundwater, based on laboratory analysis on samples collected in November 2005 is shown on Figure 6.

2.5 North Property Line Soil Gas Volatile Organic Compounds

To evaluate potential indoor air concentrations that may propagate from VOCs detected in the north property line soil gas samples, modeling was conducted in June 2003 using the U.S. EPA User's Guide for the Johnson and Ettinger Advanced Model for Subsurface Vapor Intrusion into Buildings. The U.S. EPA User's Guide for Evaluating Subsurface vapor Intrusion into Buildings, June 19, 2003 version of the model and user guide was also used. Trichloroethene (TCE) and associated decay products have been detected in the soil and groundwater at the Day Habilitation Center, and TCE was used in the modeling since it was the most prevalent compound detected at the facility, and was the only compound detected in the north property line soil gas samples. The Johnson and Ettinger model is a one-dimensional analytical solution to convective and diffusive vapor transport into indoor spaces and provides an estimated attenuation coefficient that relates the vapor concentration of the contamination source to the indoor space.

The locations of the north property line soil gas test points and 2003 sampling summary are shown on Figure 7. The laboratory analysis performed on the north property line subsurface soil gas samples collected in June 2003 detected TCE in two samples. In the sample from SG-104, TCE was detected at a concentration of 65 $\mu G/M^3$ (equivalent to 12 PPPV). Soil gas test point SG-104 was placed adjacent to monitoring well MW-17. In the soil gas sample from SG-102, TCE was detected at a concentration of 1.6 $\mu G/M^3$ (equivalent to 0.30 PPPV). Soil gas test point SG-102 was placed 12 feet northeast of monitoring well MW-7. Monitoring well MW-17 is located adjacent to soil gas point SG-104. The 2003 sampling detected TCE in the groundwater sample adjacent to SG-104 at a concentration of 320 PPB, and cis-DCE at 490 PPB.

The NYSDEC has installed basement or sub-slab ventilation systems along the homes on the south side of Torrance Street, north of the Day Habilitation Center property. These systems are maintained by the NYSDEC independent of activities at the Day Habilitation Center.

3.0 EXPOSURE PATHWAYS ANALYSIS AND QUALITATIVE RISK ASSESSMENT

An Exposure Pathways Analysis and Qualitative Risk Assessment were conducted for the April 2003 SI report. The Exposure Pathways Analysis was conducted to evaluate potential routes of exposure by which people or the environment may come into contact with the contaminant associated with the site.

3.1 Applicable Standards, Criteria and Guidance

In order to identify potential exposure pathways, applicable standards, criteria and guidance (SCGs) need to be identified. For this review SCGs are categorized as compound specific, location specific and action specific. These categories are defined as the following:

Soil SCGs

- NYSDEC Division of Hazardous Waste Remediation Technical and Administrative Guidance Memorandum (TAGM) 4046 (HWR-94-4046), "Determination of Soil Cleanup Objectives and Cleanup Levels", Revised January 24, 1994.

- NYCRR Part 371, Identification and Listing of Hazardous Wastes.

- NYSDEC Division of Hazardous Substance Regulation Technical and Administrative Guidance Memorandum (TAGM) 3028, "Contained in Criteria for Environmental Media," dated November 1992.

The cleanup objectives contained in Determination of Soil Cleanup Objectives and Cleanup Levels TAGM 4046) will be utilized for soil cleanup as part of a Soils Management Program. These values may be superseded by future promulgated NYSDEC cleanup objectives (Draft NYSDEC Part 375 Remedial Program Soil Cleanup Objectives, focusing on Commercial and also Residential use, distributed in June 2006 for public comment).

Groundwater SCGs

- NYCRR Part 700-705, Water Quality Regulations for Surface Water and Groundwater.

- NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations", Reissued June 1998, April 2000 Addendum.

3.2 Human Exposure Pathways Analysis

The Human Exposure Pathway Analysis was performed as part of the 2002 SI report. Based on the information developed during the 2000 IAQ study, the 2000 environmental assessments and information obtained during the SI, chemical compounds of potential concern to various environmental media were identified. Compounds of potential concern were selected based on

frequency of detection, range of concentrations, and potential for migration during the period of those investigations.

3.3 On-Site Release of Contamination

Based on past records, environmental studies, and observed contaminant distribution and migration patterns, there has not been any single major release of contamination identified from the facility. The main source of contamination is apparently the result of uncontrolled surface releases of chlorinated solvents from past industrial operations at the facility, which occurred prior to occupancy or ownership by the OMRDD.

These releases likely occurred at or near the former south loading dock area at the southern portion of the building, while the facility was being utilized for industrial activities prior to New York State agencies occupying the facility. Historic site drawings and anecdotal information provided by former site personnel indicate that vehicles could drive inside the building, with parking available adjacent to loading docks.

Migration of detected chlorinated VOCs has apparently occurred as dissolved constituents in the ground water possibly from product that historically infiltrated vertically from source locations through the vadose zone into the aquifer. Chlorinated VOCs remain in the soil above the water table in the vicinity of the source area. The presence of chlorinated VOCs near surface areas is based on the distribution of detected TCE concentrations at test boring/Monitoring well MW-1. Laboratory analysis on two soil samples at this location showed a decrease in VOCs with depth.

Table 4 identifies potential release sources, release mechanisms, and receiving media of concern for past, current, and future releases in the absence of any remedial action.

TABLE 4
IDENTIFICATION OF ENVIRONMENTAL MEDIA OF CONCERN

Media of Concern	Potential Release Mechanism	Receiving Medium
Contaminated Soil	Volatilization	Vadose zone soil beneath the building
	Adsorption and Absorption on to soil particles	Subsurface soil at source areas
	Vertical migration	Groundwater
Contaminated Groundwater	Groundwater flow	Groundwater down gradient
	Volatilization	Vadose zone
	Extraction via pumping Discharge to Thatcher Creek or Cattaraugus Creek	Water supply systems (without treatment) Surface soil Surface water

3.4 Identification of Exposure Pathways

The various exposure pathways, by which people could potentially come into contact with the contaminants associated with the site, either now or in the future, are summarized in Table 5. The scenarios involving exposure to off-site surface water and sediments were eliminated due to the nature and extent of contamination.

TABLE 5
EXPOSURE PATHWAY ANALYSIS

Exposure Media or Route of Exposure	Exposure to On-Site Occupants	Exposure to Construction Workers/Subsurface	Exposure to Off-Site Population
Contaminated Soil	Limited: Site is paved or covered with building footprint	Yes; If excavation occurs to the level where impacted ground water occurs	None
Groundwater	None: No use of groundwater	Yes: If excavation occurs to the water table	Only if groundwater is extracted. No use of groundwater identified.
Ingestion	None	Yes, but only if the soil is exposed	None
Direct Contact to Groundwater	None	Yes	Possible, from use of private basement sumps
Inhalation of Vapors	Yes	Yes	Possible: Modeling of potential chlorinated VOCs indicates low potential

3.5 Human Exposure Pathway Analysis

The Site Investigation and Supplemental Site Investigation reports included a summary of human exposure pathway analysis. Potential impacts to off-site residential indoor air that may be associated with the groundwater plume have been identified as a potential route for direct exposure to VOCs through inhalation. Modeling of potential indoor air concentrations was conducted of hypothetical buildings located on the subject parcel's northern property line. The modeling indicated low indoor concentrations for TCE, at levels below current NYSDOH method detection limits. Risk assessments indicated values within the U.S. EPA acceptable range for on-site exposure.

No actual indoor or sub-slab sampling was performed by Bergmann at residences along Torrance Place as part of the OMRDD investigations for the Day Habilitation Center Voluntary Cleanup Project. Potential impact was determined based on modeling from soil gas samples collected at the Day Habilitation Center's property line and modeling efforts.

The laboratory analysis conducted on groundwater samples collected in July 2003 indicated levels of impacted groundwater at concentrations along Torrance Place below the concentrations detected at the subject property northern property line. Given the lower concentrations of impacted groundwater at Torrance Place, any resulting soil gas concentrations may also be lower than the values measured at the subject property's northern property line. Any concentrations of VOCs within buildings would also likely be lower than the values the Johnson and Ettinger SG-Advanced model predicted at the subject property's northern property line.

On-site/utility workers could be exposed during excavation or subsurface maintenance activities via dermal contact with waste materials, inhalation of vapors and airborne particulates when working in the area of wastes or near a waste treatment system (if implemented), and incidental ingestion due to soiled hands.

Groundwater in the area is currently not used for drinking water. All residential dwellings are reported by local agencies as being served with municipal water. The potential for direct contact with groundwater may occur if shallow well points are used within the plume for irrigation, as basement sumps or other non-potable purposes.

3.6 Predicted Off-Site Indoor Air Concentrations for TCE

No actual indoor or sub-slab sampling or outside soil gas samples were collected adjacent to the residences was performed at residences along Torrance Place was conducted by Bergmann as part of the Gowanda Day Habilitation Center Voluntary Cleanup Project. The NYSDEC subsequently conducted indoor sampling of the residences along Torrance Avenue and also installed systems inside the residences independent of the activities at the Gowanda Day Habilitation Voluntary Cleanup Project. The residential buildings along the south side of Torrance Place are located approximately 46 to 76 feet north of the Day Habilitation Center property line.

The Johnson & Ettinger model was used to estimate potential indoor air concentrations and risk potential at sample points SG-104 and SG-102. The model-predicted indoor building concentration ($C_{building}$) for TCE at a hypothetical building at SG-104 was determined to be 0.184 $\mu G/M^3$ ($1.84 \times 10^{-1} \mu G/M^3$). At SG-102, the model-predicted indoor building concentration for TCE was determined to be 0.00085 $\mu G/M^3$ ($8.5 \times 10^{-4} \mu G/M^3$). Both hypothetical building TCE concentrations are within the NYSDOH 75% percentile of results less than 1 $\mu G/M^3$. The model predicted vapor concentrations are also less than the reported model detection limit of $0.25 \mu G/M^3$.

The Johnson and Ettinger soil gas screening model predicted that indoor air concentrations of TCE at hypothetical buildings located at test points SG-102 and SG-104 would be less than the measured TCE concentrations in the two soil gas samples. The predicted indoor values (based on an infinite source for building concentration, $C_{building}$) have been compared to the NYSDOH study of indoor air sampling. The NYSDOH study reportedly included TCE, cis-DCE and Vinyl Chloride. For TCE, the 75 percentile of the residential indoor air results were reported as less than the method detection limit, 0.25 $\mu G/M^3$. Cis-1,2-TCE was also reportedly not detected at the 75% percentile, with a detection limit of 0.25 $\mu G/M^3$.

4.0 INTERIM REMEDIAL MEASURES SYSTEM

4.1 System Objectives

The objectives of the Gowanda Day Habilitation Center IRM system are as follows:

- Minimize further migration of contaminated groundwater from underneath the Day Habilitation Center building to down-gradient areas.
- Promote the extraction of targeted volatile organic compounds (VOCs) from the groundwater and subsurface soil beneath the Day Habilitation Center building.
- Treat recovered groundwater to allow compliant discharges to the sanitary sewer system owned and operated by the Village of Gowanda.
- Treat extracted soil vapor to allow compliant discharges to the atmosphere as regulated by the New York State Department of Health (NYSDOH) and NYSDEC.
- Lower the VOCs from the indoor air inside the Day Habilitation Center to levels that will allow re-use of the facility.
- Allow for re-use of the facility with minimal disturbance or alterations to the building infrastructure.

Remediation goals are be based on contemplated future site use consistent with the Voluntary Cleanup Agreement. In accordance with Paragraph F of Item II of the Voluntary Cleanup Agreement, the NYSDEC will determine, upon approval of the Final Investigation Report, whether further remediation will be required for the contemplated site use.

4.2 System Description

The Gowanda Day Habilitation Center IRM System was activated on May 10, 2005. The IRM system underwent a program of adjustment to allow for concurrent operation of the groundwater treatment system and the soil vapor extraction system. As of mid-September 2005 both the groundwater treatment system and the soil vapor extraction system were able to operate together successfully.

A groundwater pump and treat system (GTS) system and a soil vapor extraction (SVE) system are the major components of the IRM. The GTS portion of the system consists of six groundwater recovery wells (four dual phase recovery wells and two groundwater-only wells), an air compressor, a network of controller-less pneumatic pumps, and an air stripper treatment system to process recovered groundwater. The air compressor is located in the Machine Room with the air stripper skid. Each one of the six pneumatic pumps is self-regulating to discharge groundwater only when pump cavities are full. Pneumatic pumps require no electrical power source for operation other than the air compressor which delivers air to the pumps. The self-regulating operation eliminates the need for level controllers. The recovered groundwater is

pumped back to the equalization tank to allow for settling of sediment and for transfer to the air stripper using a consistent flow rate. The air discharge from the air stripper is tied into the SVE vapor carbon vessels for treatment prior to discharge to the atmosphere.

The SVE system consists of a blower operated skid and a network of six SVE wells (four dual recovery wells and two SVE-only wells). The entrained vapors return to the SVE skid through a common transmission pipe, pass through a heat exchanger for conditioning and then through two vapor carbon adsorbers in series prior to atmospheric discharge. Typical SVE operation produces minimal condensate; however, the system is equipped with a condensate tank with a high level alarm and a transfer pump.

4.3 System Efficiency Requirements

To demonstrate that the IRM satisfies requirements of a final remedial remedy, the following items need to be demonstrated:

1. Indoor Air Quality (IAQ) levels within the building maintain acceptable levels for re-use. This requires sampling and analysis.

2. Laboratory analysis on groundwater samples at the north property perimeter and at down-gradient wells consistently show decreasing levels of VOCs.

3. Consistent decease in the size of the plume beneath the building.

4. Site monitoring and modeling shows that hydraulic containment of the highest area of impacted groundwater is consistently maintained.

5.0 SYSTEM EVALUATION

5.1 Groundwater Recovery Well Radii of Influence

A requirement of the IRM system is to contain the plume of impacted groundwater beneath the building slab. Such an impact can be demonstrated if the radius of impact for the recovery wells encompasses the majority of the groundwater plume. The water table surface and flow regime for October 2004 is shown on Figure 8. The groundwater flow pattern for November 2005, after activation of the IRM system, is shown on Figure 9.

Estimated radius of influence for each GTS recovery well was determined using measured depth to groundwater and depressed water table surfaces at the GTS recovery well/monitoring well pairings. A demonstrative change (lowering) of the water table at the impacted monitoring well, with the GTS well operating was obtained. The depth to water and changes in water table surface measurements were obtained in May – August 2005.

Changes in water table surfaces are also impacted by seasonal, site-wide changes caused by changes in precipitation (rain, snow melt) and the resulting infiltration of such precipitation. Such site-wide changes vary across the site, based on variations in depth to groundwater and soil type. To determine if a recovery well was impacting a paired monitoring well, the impact needed to be greater than the site-wide average change, as determined by the average of up-gradient and down-gradient well changes beyond the impact of the GTS system. Accordingly, if a decrease in the water table elevation at a paired monitoring well was greater than the site-wide average then such a change can be attributed to impact from the paired recovery well.

Depth to water measurements and equivalent groundwater measurements were obtained between IRM activation on May 10, 2005 and on an approximate monthly basis. Changes in water table elevation are presented on summary tables provided in Appendix 2. A summary of the estimated radius of influence for the 6 groundwater recovery wells are presented in Table 6 and are also shown on Figure 10.

TABLE 6
2005 GROUNDWATER RECOVERY WELLS RADIUS OF INFLUENCE

GTS Recovery Well	Monitoring Period	Approximate Radius of Influence *	Impacted Monitoring Well	Comments
G-1	May 10 – Aug. 19	60 feet	MW-17	Continuous Operation
G-2	May 10 – Aug. 19	50 feet	MW-7	Continuous Operation
DR-1	May 10 – Aug. 19	30 feet	MW-11, MW-1	Continuous operation
DR-2	May 10 – Aug. 19	35 feet	MW-12	Continuous operation
DR-3	May 10 – Aug. 19	35 feet	MW-13	Continuous operation prior to August 2005
DR-4	May 10 – Aug. 19	30 feet	MW-15	Not fully on-line: operation sporadic

* minimum radius of influence, based on apparent impact (lowering of water table) at monitoring wells

The estimated radii of influence for the six groundwater recovery wells were determined between system activation on May 10, 2005 and August 19, 2005. This time frame was selected since all six groundwater recovery wells were on-line (although not all active at the same time), and the recovery well cone of depressions were not influenced by the complementary soil vapor extraction systems (Recovery wells DR-1 through DR-4 are dual recovery wells).

The concurrent operation of the SVE system artificially raises the water column within the recovery wells. A vacuum of 25 inches of water is equivalent to 1.26 psi. One foot of water in a well is equivalent to 0.32 psi. Thus, a vacuum of 35 inches on a dual-GTS and SVE well is sufficient to artificially raise the water elevation within the well.

The SVE system was deactivated June 15, 2005 until August 19, 2005. Measurements of water table elevations prior to the SVE re-activation are thus not impacted (elevated) due to the vacuum effect of the SVE system.

Impact of the Groundwater Treatment System on the Water Table Surface

Depth to water and groundwater table elevations were determined prior to system activation on May 10, and then on a regular basis when various GTS recovery wells were active. Between May 15 and June 23, 2005, a seasonal site-wide drop in the water table was evident, indicated at distant and up-gradient monitoring wells beyond the impact of the groundwater treatment system. The drop in the water table at up-gradient monitoring wells (MW-8, MW-9 and MW-10) is likely due to the natural drop in the water table experienced in drier summer conditions.

Water table elevations indicate that draw-downs can be maintained at all 6 groundwater recovery wells, and radius of influence at the recovery wells are able to impact nearby monitoring wells. Establishment of constant draw-downs and "flattening" of the decreased water table surface measurements at monitoring wells is indicate of steady state conditions. The estimated radius of influence for the GTS recovery wells are listed in Table 6 and are shown on Figure 10.

Recovery Well DR-1

Recovery Well DR-1 appears to impact MW-1 and MW-11, and may also impact MW-2 (seasonally, prior to a site-wide rise in the water table in September 2005). During the June 23-August 19, 2005 monitoring period a depressed water table elevation was indicated at monitoring well MW-11, nearest to DR-1, and also at up-gradient wells MW-1 and MW-2, at which decreases were greater than the site-wide seasonal drop in the water table.

Recovery Well DR-2

The impact of recovery well DR-2 has been indicated at nearby monitoring well MW-12, where a decreased water table surface, greater than the site average was indicated during the May – August 2005 monitoring period.

Recovery Well DR-3

Drawdown was indicated at monitoring well MW-14. Recovery well DR-3 has periodically been turned on an off to control silt intake, and as of June 2005 the radius of influence may not have been fully developed. When active, the lowered water table surface at MW-14 was greater than the site-wide or up-gradient average during the June – August 2005 monitoring period.

Recovery Well DR-4

DR-4 appears to be impacting nearby monitoring well MW-15, at which a decreased water table surface has been indicated, slightly greater than the seasonal site-wide drop. DR-4 has not been on-line for a constant basis, and the observed change in the water table surface at MW-15 may also have been impacted by the de-watering effect of the up-gradient recovery wells DR-1, DR-2 and DR-3.

Recovery Well G-1

Recovery Well G-1 was on-line continuously since the GTS system was activated in May 2005. Drawdown was indicated at monitoring well MW-17. A radius of influence extending to MW-17 appeared to have developed, where the depressed water table surface was greater than the site-wide average.

Recovery Well G-2

Recovery well G-2 has also been on-line continuously since GTS system activation in May 2005. Drawdown indicated at monitoring well MW-7, where the depressed water table surface was greater than the site-wide average.

5.2 Impacted Contaminant Plume and Reduction in Groundwater VOCs at the Property Perimeter

A requirement of the IRM system is to contain the plume of impacted groundwater, and to prevent off-site migration of impacted groundwater. The effectiveness of the IRM system was evaluated using two complementary methods.

1. Demonstration that the depth to groundwater at perimeter monitoring wells are impacted/reduced to a degree greater than site-wide changes, indicative of a given perimeter monitoring well within a RW radius of influence. Measurements obtained during May – August 2005 indicated that the six groundwater recovery wells were able to impact targeted monitoring wells, with a lowering of the water table surface greater than the site-wide average or greater than the change experienced at up-gradient or down-gradient wells not impacted by the GTS system.

2. VOCs in the groundwater at the perimeter monitoring well showed reduced concentrations when comparing the November 2005 data to previous 2002 – 2004 data, indicative of the intent of the GTS containing and preventing off-site migration of impacted groundwater. The GTS system is lowering VOCS in the majority of the groundwater contaminant mass (MW-1, MW-11 and MW-12), and also lower the VOCs at the north property line monitoring wells (MW-16, MW-7, MW-17, MW-6 and MW-5).

   Total VOCs in the north perimeter monitoring wells measured in October 2004 and November 2005 are shown in Table 7. All 5 north perimeter monitoring wells showed a reduction in the November 2005 total targeted VOCs relative to values obtained in October 2004. Lowered VOCs were also measured at the three monitoring wells in the area of highest impact, MW-1, MW-11 and MW-12. The changes in detected total VOCs, along with relative percent changes for the contaminant source area wells are also listed in Table 7.

TABLE 7
CHANGE IN VOCS IN PERIMETER AND SOURCE AREA MONITORING WELLS, 2003 – 2005

Monitoring Well	**TVOCs, 2003**	**TVOCs, 2004**	**TVOCs, 2005**	**Change in VOCs 2004 -2005**
North Perimeter Monitoring Wells				
MW-5	7.3 PPB	6.7 PPB	5.13 PPB	23.4 % reduction
MW-6	333 PPB	280 PPB	233 PPB	16.8 % reduction
MW-7	534 PPB	508 PPB	455.1 PPB	10.4 % reduction
MW-16	38 PPB	82 PPB	65.4 PPB	20.2 % reduction
MW-17	810 PPB	1,154 PPB	1,006 PPB	12.8 % reduction
Contaminant Source Area Monitoring Wells				
Monitoring Well	**TVOCs, 2003**	**TVOCs, 2004**	**TVOCs, 2005**	**Change in VOCs 2004 -2005**
MW-1	2,879 PPB	1,250 PPB	1,028 PPB	17.8 % reduction
MW-11	34,169 PPB	2,355 PPB	1,101 PPB	53.2 % reduction
MW-12	12,100 PPB	6,900 PPB	4,776 PPB	30.8 % reduction
MW-14	140 PPB	67 PPB	139.9 PPB	108.8 % increase**
MW-15	258 PPB	320 PPB	271 PPB	15.3 % reduction

The IRM Groundwater Treatment System was activated on May 10, 2005

MW-14 was the only monitoring well to exhibit an increase in total VOCs in the 2005 samples when compared to the 2004 samples. The Total VOCs in the 2005 sample from MW-14 (139.9 PPB) was greater than 2004 (67 PPB) but was nearly identical to the 2003 sample (140 PPB), and that the 2005 MW-14 total VOCs were also lower than the 2002 sample results (315.2 PPB). A localized, relatively steep hydraulic gradient has consistently been indicated up-gradient of the MW-14 area. A portion of the plume of impacted groundwater with higher concentrations of VOCs has been detected in the MW-1/MW-12 area, up-gradient of the MW-14 area. It is possible that a portion of the plume with higher total VOCs migrated from the MW-12 area, beyond the radius of influence for DR-1, and subsequently migrated to the MW-14 area. The

change in VOCs at MW-14 between 2004 and 2005 was still below concentrations detected at down-gradient locations, MW-17 and MW-7, and thus any portion of the plume that migrated from the area of highest impacted groundwater was likely intercepted and contained at DR-3, G-1 and G-2 recovery wells. The VOC concentrations in the wells down-gradient of MW-14 (MW-7 and MW-17) showed decreases in samples collected in 2005 relative to 2004, indicative of the groundwater treatment system intercepting the plume of impacted groundwater and preventing off-site migration.

5.3 Soil Vapor Extraction System Radii of Influence

A requirement of the IRM system is for the Soil Vapor Extraction System (SVE) to demonstrate removal of VOCs from beneath the building slab. Removal of VOCs from the vadose zone beneath the building slab will decrease the potential migration of VOCs from volatilization of impacted groundwater, and subsequently seeping into the indoor air.

The locations of the six Soil Vapor Extraction Wells (4 dual recovery and two soil vapor-only recovery wells) are shown on Figure 2. The SVE conveyance lines are sized to maintain the required vacuum pressure at each well in order to extract the required amount of vapor from each of the six locations. The area of influence will be determined by the groundwater recovery component being able to depress the water table sufficiently to expose a greater vadose zone in which soil vapor will be recovered. As the IRM system operates on a continuous basis, the soil particles which are exposed above the groundwater table and that reside under the building foundation will be affected by the stripping nature of SVE system.

The approximate radius of impact for each of the six SVE extraction wells is listed in Table 8, and is also plotted on Figure 11. The radius of impact for the SVE wells were estimated from the vacuum readings recorded at the eight sub-slab monitoring and measurement points, as measured in November 2005. The approximate radius of impact for the SVE wells range from 25 feet for well DR-4 to 45 feet for SVE-2.

TABLE 8
2005 SVE RECOVERY WELL AREA OF IMPACT SUMMARY

SVE Well	Vacuum Nov. 2005	Associated Sub-Slab Vacuum Point	Sub-Slab vacuum, Nov. 2005	Estimated SVE Well Radius of Impact
DR-1	32 "	SP -2	0.04 "	40 feet
DR-2	40 "	SP-4	0.00 (defective)	35 feet
DR-3	38 "	SP-6	0.02 "	30 feet
DR-4	34 "	SP-7	0.01	25 feet
SVE-1	30 "	SP-1	0.01	35 feet
SVE-2	30 "	SP-3	0.15	45 feet

Vacuum readings are in inches of water, recorded on November 16, 2005.
Vacuum point SP-4 lies within estimated radii for both DR-2 and SVE-1 and is assumed to be detective.

Based on the calculated monthly sub-slab soil vapor recovered each month between IRM system activation and December 2005 and the measured concentrations of the targeted chlorinated

VOCs from the November 2005 sampling and analysis, the SVE system treated 56 million cubic feet of sub-slab vapors, equivalent to 1.6 cubic meters of sub-slab soil gas. Using the November 2005 influent to the carbon vessel concentration of the soil gas stream approximately 305 pounds of measured VOC's were recovered during 2005. Greater than 91% of this was TCE.

TABLE 9
SUMMARY OF 2005 SVE SYSTEM OPERATION

Month	Total SVE System Operational Days per Month	Average Monthly Air Flow Rate (CFM)	Monthly Air Stream Recovered and Treated (Million Cubic Feet)
May 2005	19 days	410 CFM	11.2
June 2005	13 days	407 CFM	7.6
July 2005	0 days	0 CFM	0
August 2005	2 days	352 CFM	1.0
September 2005	6 days	375 CFM	3.2
October 2005	17 days	392 CFM	9.6
November 2005	17 days	422 CFM	10.3
December 2005	22 days	425 CFM	13.4
2005 Total:		N/A	56.3

Based on the up-time of the SVE system, volume of recovered sub-slab vapors and measurable concentrations of the targeted VOCs in the air stream, the SVE component of the IRM system has been effective in removing VOCs from beneath the building slab.

TABLE 10
SUMMARY OF 2005 SVE SYSTEM VOC RECOVERY

VOC	Molecular Weight	Nov. 2005 SVE Conc. PPBv	Mass Removed Pounds
TCE	131.4	15,000	278
Cis-1,2-DCE	97.0	1900	26
Trans-1,2-DCE	97.0	ND	0
Vinyl Chloride	62.5	14	0.12
1,1,2-TCA	133.4	ND	0
Tetrachoroethylene	165.8	2 J (below detection limit)	0

5.4 IRM System Groundwater Treatment System Efficiency

Based on groundwater concentrations of VOCs detected in 2002 and 2003, the initial VOCs, from the center of the VOC plume were assumed to exceed 1 PPM (1,000 PPB). Overall

influent VOCs from the six groundwater extraction wells may be lower due to dilution from VOCs at the northern recovery wells, which are estimated to have lower voc concentrations in the 0.5 PPM TVOC range. The VOCs Trichloroethene (TCE), cis-1,2-Dichloroethene (cis-DCE), trans-1,2-Dichloroethene (trans-DCE) and Vinyl Chloride (VC) were detected in samples collected 2002 – 2004. The VOCs Trichloroethane and Tetrachlorethene were detected sporadically in groundwater influent and SVE influent samples collected after May 2005.

The GTS was sized to have the capacity to treat influent total VOCs up to 10 PPM (10,000 PPB) with flow rates up to 25 gallons per minute (ppm). The Village of Gowanda sewer use permit allows for a daily discharge of up to 20,000 gallons per day, equivalent to 1.388 gpm.

During 2005 the GTS treated and discharged groundwater at a flow rate that varied from 1.0 to 7.5 gpm. After adjustments the GTS system operated at 90 % to 99 % efficiency in removing VOCs from accumulated groundwater prior to discharge to the sewer. A summary of monthly groundwater recovery, VOCs in the influent and post-stripper effluent is presented in Table 9.

TABLE 11
VOCS IN GROUNDWATER INFLUENT AND POST-STRIPPER EFFLUENT

Sample Date	Average Flow Rate,GPM	Influent, Total TTO	Post-Stripper Effluent Total TTO	Efficiency Reduction in TTO	Effluent in Compliance with Gowanda Sewer Use Permit
May 2005 Daily Sampling					
May 10, 2005	Not recorded	3,800 PPB	1,332 PPB	65 %	Yes
May 11, 2005	Not recorded	7,300 PPB	2,700 PPB	63 %	No
May 12, 2005	Not recorded	Not sampled	2,500 PPB	Not Determined	No
May 13, 2005	Not recorded	Not sampled	663.1 PPB	Not Determined	Yes
May 14, 2005	Not recorded	740 PPB	550 PPB	25.7 %	Yes
May 15, 2005	Not recorded	810 PPB	550 PPB	32.1 %	Yes
May 16, 2005	Not Recorded	680 PPB	510 PPB	25 %	Yes
May 17, 2005	Not Recorded	Not sampled	550 PPB	Not Determined	Yes
May 26, 2005	Not Recorded	710 PPB	610 PPB	14.1 %	Yes

June 2005, Weekly Sampling Results					
June 1, 2005	7.5 gpm	610 PPB	490 PPB	19.7 %	Yes
SVE System shut down temporarily prior to groundwater sampling on June 8, 2005 SVE system reactivated until the June 15, 2005 sampling event.					
June 8, 2005	4.0 gpm	450 PPB	1.88 PPB	99.6 %	Yes
June 15, 2005	5.37 gpm	1,140 PPB	1.99 PPB	99.8 %	Yes
SVE System shut down on June 15, 2005 to improve groundwater treatment system efficiency					
June 23, 2005	6.60 gpm	1,038.7 PPB	12.4 PPB	98.8%	Yes
Monthly Sampling Results					
July 15, 2005	1.0 gpm	939.47 PPB	10 PPB (estimated)*	98.9 %	Yes
Aug. 19, 2005	2.55 gpm	970.0 PPB	98.0 PPB	89.9%	Yes
Sept 28, 2005	2.32 gpm	NA	NA	NA	sampling not conducted
Oct. 25, 2005	6.38 gpm	465.0 PPB	2.14 PPB	99.5 %	Yes
Nov. 16, 2005	7.12 gpm	566.28 PPB	ND, <2.0 PPB	99.9 %	Yes
Dec. 22, 2005	6.48 gpm	473.0 PPB	15.59 PPB	96.7 %	Yes
Jan. 23, 2006	7.5 gpm	427.18 PPB	ND, <2.00 PPB	99.5 %	Yes

5.5 Control of Indoor Air Quality VOCs

A requirement of the IRM system is to remove targeted VOCs from the indoor air within the building and achieving indoor air quality (IAQ) values for targeted VOCs within specified NYSDOH guidelines.

Initial IAQ Samples from within the Gowanda Day Habilitation Center were collected in June, 2000. A total 11 IAQ samples and an outdoor "background" sample were collected for laboratory analysis via EPA Method TO-14A. The analytical results were provided in the Bergmann Subsurface Investigation and Indoor Air Quality Summary Report, dated February 26, 2001. The 2000 IAQ analytical results are also summarized in Table 12 of this report. The sample locations are shown on Figure 3.

IAQ Samples were subsequently collected in November 2005 from the same 10 indoor locations sampled in June 2000. The 2005 IAQ samples were submitted for laboratory analysis via EPA Method TO-15. The laboratory analytical reporting package on the November 2005 IAQ

samples is provided as Appendix 3. The November 2005 analytical results are also summarized in Table 12. The NYSDOH 75th percentile values from the 2000 Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes are also listed in Table 12.

The November 2005 IAQ samples were collected after the Gowanda Day Habilitation Center building had been vacant for approximately 4 years. During that time the interior ventilation system had not been operating, with minimal significant air flow into or through the building. IAQ sample collection canisters were placed in areas that had not experienced any significant air movement or ventilation activity.

The laboratory analysis detected measurable concentrations of TCE in 10 of the 11 IAQ samples collected in November 2005. The detected concentrations ranged from Not Detect for the Room 162 to a high of 33.9 ug/M^3 (equivalent to 6.20 PPBV) in the machine shop room sample, the area where the IRM treatment system is located in the northwest corner of the building.

The November 2005 IAQ sample results indicated a reduction in indoor VOCs at five of the 11 interior sampling points, compared to the June 2000 analytical results. Concentrations of indoor VOCs at the remaining six November 2005 IAQ samples showed an increase compared to the previous June 2000 samples.

All four IAQ sample locations at which TCE was detected in the June 2000 samples showed a relative decrease in the November 2005 samples. These include IAQ sample points in rooms that overly the area of maximum impacted groundwater:

- Room 50, South Cafeteria.
- Room 39, Nurse Clinic.
- Room 85, Occupational Therapy.
- Room 58 B, Sensory Motor, not directly above the impacted groundwater plume.

Although the year 2000 sample points showed a reduction in indoor TCE concentrations relative to the November 2005 samples, the detected concentrations of TCE were still above the NYSDOH indoor air study 50th and 75th percentile values.

The November 2005 IAQ analysis showed an increase in TCE, and also Cis-1,2-DCE in six of the indoor air sampling points, relative to the June 2000 sample results. Five of the indoor samples collected in November 2005 had detectable concentrations of Cis-1,2 DCE, compared to a single sample from the year 2000 samples (Room 162, which had 8.84 ugm^3 of Cis-1,2-DCE in the June 2000 sample and no detectable VOCs in the November 2005 sample).

The increase in concentrations of the targeted VOCs in six of the 11 November 2005 samples, relative to the June 2000 samples, is likely due to a combination of factors. These include:

- No continuous air exchange or on-going building ventilation. The November 2005 increase in detected VOCs may be due to gradual build-up over the past four years, and have remained stagnant in rooms and areas that receive no air circulation. The stagnant and lack of circulation may explain the increase in VOCs in all six samples that showed

an increase, specifically samples from four areas that can be isolated: Room 13, Room 37, Room 101 and Room 157. All four rooms are areas that are not ventilated, and VOCs may have accumulated.

- Non-point emissions and leaks from the GTS and SVE skids on the IRM system located in Room 33, Machine Shop. Splashing an agitation of groundwater into the EQ tank increases volatilization, and may release VOCs. System components are not air-tight (non-pressurized seal on the lid to the EQ tank), drums of sediment filters have not been not sealed tight. Thus, the IRM system is contributing to VOCs in the Machine shop, resulting in an increase in VOCs. In addition, this space is not impacted by the SVE system. No SVE wells are located in Room 33 Machine Shop.

- Effect of portable air circulation fans in the north cafeteria. In Room 124, North cafeteria a pair of portable electric air circulation fans continuously blow air from the machine shop through the north cafeteria. The fans are part of an "ad hoc" heating system, blowing warm air from the machine shop into eastern portions of the building while the building HVAC system deactivated when the building is not activated. This method if heating and ventilation distributes VOC impacted air from the machine shop into the north cafeteria. As a result, the indoor VOCs detected in Room 124-North Cafeteria, Room 147-Conference and other areas impacted by the fans may be impacted by introduction of VOCs from the machine shop.

TABLE 12
INDOOR AIR QUALITY SUMMARY, 2000 AND 2005 MONITORING AND ANALYSIS

IAQ Sample Point	2000 TCE ug/M^3	2005 TCE ug/M^3	NYSDOH 75th percentile ug/M^3	2000 Cis-1,2-DCE ug/M^3	20005 Cis-1,2-DCE Ug/M^3	NYSDOH 75th percentile ug/M^3
Room 13 Model Apartment	ND	**5.24**	ND, <0.25	ND	**1.97**	ND, <0.25
Room 33 Machine Shop	ND	**33.9**	ND, <0.25	ND	**15.7**	ND, <0.25
Room 37, Art	ND	**1.80**	ND, <0.25	ND	ND	ND, <0.25
Room 39, Nurse Clinic	**12.01**	**2.79**	ND, <0.25	ND	**0.524**	ND, <0.25
Room 50, south Cafeteria	**51.31**	**3.82**	ND, <0.25	**9.648**	**0.685**	ND, <0.25
Room 58B, Sensory Motor	**4.31**	**0.546**	ND, <0.25	ND	ND	ND, <0.25
Room 85, Therapy	**15.28**	**3.71**	ND, <0.25	**2.89**	**0.846**	ND, <0.25
Room 101, Model Apartment	ND	**0.655**	ND, <0.25	ND	ND	ND, <0.25
Room 124, North Cafeteria	ND	**0.71**	ND, <0.25	ND	ND	ND, <0.25
Room 157, Conference	ND	**0.874**	ND, <0.25	ND	ND	ND, <0.25
Room 162, Office	ND	ND	ND, <0.25	**8.84**	ND	ND, <0.25
Conversion factor: 1 PPBV of TCE = 2.7836 ug/M^3 1 PPBV Cis-1,2-DCE = 4.02 ug/M^3						
All Results expressed as ug/M^3						

Bold = Detected concentrations above Method Detection Limits
Analysis on the September 2000 samples via EPA Method TO-14A
Analysis on the November 2005 samples via EPA Method TO-15
Analytical results compared to the NYSDOH Study of Volatile Organic Chemicals in Air at Fuel Oil Heated Homes, 75th percentile, February 2005.

5.6 Criteria for the IRM System to Meet Final Remedy Requirements

The existing IRM system appears to impact the majority of the contaminant mass beneath the Gowanda Day Habilitation Center building, as shown in Figure 13, Remedial System Efficiency and Extent of Impacted Groundwater, November 2005. This figure presents the approximate radius of impact for the six groundwater recovery wells onto the plume of impacted groundwater. The radius of influence for the six groundwater recovery wells appears to impact

the majority of the area of contamination. Additional measures will required to fully address the objectives of the remediation program at the facility.

The following measures will required to allow the existing IRM system to meet the objectives as the final remedy for the Gowanda Day Habilitation Center:

- Groundwater recovery wells DR-3 and DR-4 need to be kept on-line on a full time basis. This will increase the GTS effective radii of influence and will improve the ability of the system in removing VOCs from the groundwater contaminant mass and will assist in preventing off-site migration of impacted groundwater. Maintaining DR-3 and DR-4 on-line will require removal of silt and improved well development to remove sediment from the subsurface adjacent to the screened interval.

- The existing GTS system will require modifications to allow for removal of greater quantities of sediment. The limiting factor of operation of the GTS has been the amount of sediment that accumulates in the filters and volume of groundwater that can be treated. The existing low-profile stripper tower can effectively treat 20+ gallons per minute, with discharges within the Village of Gowanda sewer use permit. Additional sediment filter units will be needed to allow for greater flow rates. This would result in the ability to increase the drawdown at the groundwater recovery wells, increase the on-line performance of the six groundwater recovery wells and increase the radius of influence at each recovery well.

- Engineering controls will need to be implemented in Room 33-Machine Shop, the area at the northwest corner of the building where the groundwater treatment system and soil vapor extraction system are located. Engineering controls and improvements to the GTS and SVE system will reduce the amount of VOC off-gassing that appears to emanate from the systems, including tightened seals on the GTS Equalization tank and secure drums of spent sediment filters in air-tight drums in the Machine shop.

- The treatment system skids in Room 33-Machine Shop will require isolation from the building's HVAC system. Modifications to the existing HVAC system will be implemented and physical barriers (airtight doors) will be installed to isolate the treatment system area from the building.

- The volume of sub-slab air recovered by the SVE system will need to be increased, with resulting increase in the vacuum at the six vapor extraction wells. The SVE system was configured to collect the maximum amount of sub-slab vapors without pulling up groundwater. The existing SVE system will operate at a greater vacuum, if the systems ability to collect groundwater and to discharge sediment can be improved.

- A program of regular groundwater monitoring, sampling and laboratory analysis to evaluate on-going reduction in VOCs at both the contaminant plume beneath the building, and also at the property line will be implemented. This will also include measurements of groundwater elevations at monitoring wells paired to the recovery wells to ensure drawdown and containment from each recovery well's radius of impact. The

monitoring, sampling and analysis will be included as part of the Operations, Monitoring and Maintenance (OM & M) Program.

- A program of sub-slab soil gas monitoring, sampling and laboratory analysis will be implemented. The program will include procedures to periodically monitor changes in targeted VOCs beneath the slab, to monitor the radius of impact for the Soil Vapor Extraction wells and to ensure on-going reductions in VOC concentrations beneath the building slab. The soil gas sampling program will be included with the OM & M Program.

- The building's existing heating and ventilation system (HVAC) will be reactivated at a level sufficient to maintain proper air exchange and prevent the accumulation of stagnant pockets of air impacted with accumulated VOCs. A program of regular sampling and testing of indoor air samples will also be implemented to monitor levels of the targeted VOCs to ensure the compounds do not accumulate inside the building.

- A separate, independently operated sub-slab depressurization system will be required as a condition for re-occupancy of the building. As long as the building is left vacant, no such system will be required to be installed or activated. The environmental easement for the property will include a requirement that such a system be installed and activated as a condition for re-occupancy. This system would operate independently of the existing SVE system.

- A Soil Management Program will be established as part of the OM & M program for the facility.

6.0 IDENTIFICATION AND EVALUATION OF REMEDIAL ALTERNATAIVES

6.1 Remedial Action Objectives

The proposed Remedial Action Objectives for the Gowanda Day Habilitation Center are based on the generic RAO examples listed in Appendix 4A of Draft DER-10, Technical Guidance for Site Investigation and Remediation, December 2002.

The proposed RAOs are to address the following:

- Prevention of exposure to persons at or around the site.
- Allow for removal of the sources(s) of soil or groundwater contamination.
- Allow for reduction of contamination concentrations in soils and groundwater at the site.

Ambient Air Objectives

NONE – the outside ambient air at this site was not considered a media that was impacted by contamination at the time the SI and SSI were conducted. There are no indications that outdoor air has been jeopardized by the site at this time.

Indoor Air Remedial Action Objectives

Appendix 4A of DER-10, "Technical Guidance for Site Investigation and Remediation", does not include Generic RAOs specific to air media. The indoor air objectives are based on applicable NYSDOH guidance documents for aromatic VOCs and chlorinated VOCs. The decision matrices contained in the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" are to be followed for addressing both aromatic and chlorinated VOCs.

The remedial Action Objectives for indoor air quality for the subject parcel interior are based on the Indoor air objectives for individual compounds based on appropriate NYSDOH Guidance Documents (The NYSDOH Summary of Indoor and Outdoor Levels of Volatile Organic Compounds from Fuel Oil Heated Homes in NYS, 1997-2003, revised February 18, 2005).

Appropriate specific values for the targeted chlorinated VOCs at the Day Habilitation Center are listed in Summary Table 12. The 75th percentile values for the NYSDOH data on indoor samples are listed for TCE and Cis-1,2-DCE are listed for reference purposes on Table 12.

Groundwater Remedial Action Objectives

The Groundwater RAOs are intended to allow for the public health protection and for environmental protection, and include the following objectives:

- Prevent contact with, or inhalation of volatiles from contaminated groundwater.
- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards. The subject parcel and surrounding properties are connected to municipal water supply and the local groundwater is not used as a potable water source.

- Restore groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable. Proposed groundwater cleanup objectives are based on the NYSDEC Class GA Groundwater Standards.
- Remove the source of groundwater contamination.
- Prevent the discharge of contaminants to surface water.
- Control offsite migration of volatile constituents by recovering contaminated groundwater from the source areas.

The alternatives to be considered for remediation will be based on achieving objectives that will recover and clean up groundwater to acceptable groundwater quality standards and the level of land use required by the NYSDEC. Potential off-site migration of the targeted chlorinated VOCs in groundwater to the north is the primary concern.

Soil Remedial Action Objectives

The Soil RAOs are intended to allow for the public health protection and for environmental protection, and include the following objectives:

- Prevent contact with contaminated soil adjacent to the building (MW-1 area, immediately north of the building, at beneath the building slab). Establish a Soils Management Program to include:
    - Field Screening for on-site excavation beneath or adjacent to the building.
    - Monitoring for VOCs.
    - On-Site Staging and Covering of any excavated, impacted soil.
    - Sampling and Testing.
    - No On-Site Re-use of contaminated soil above cleanup objectives.
    - Off-Site Disposal Criteria.

- Allow for re-use of the property without demolition of the existing building. The vast majority of impacted soil lies directly beneath the Gowanda Day Habilitation Center building footprint. It is the intent of the remediation program to allow for eventual re-use of the building. As such demolition of the building and direct source removal of impacted soil from beneath the building is not desirable. The intent of the groundwater treatment system and soil vapor extraction system is to treat impacted soils from beneath the building to reach acceptable soil cleanup objectives.

- Excavation of impacted soil is not feasible. The area of impacted soil is beneath and adjacent to the building, and excavation could undermine the building or damage the foundation.

- Impacted soils are to be are to be remediated by the SVE and GTS treatment systems. Recovery Well DR-1 radius of impact is to extend to the MW-1 area. Operation of the systems is intended to remove VOCs from the impacted soil adjacent to the building and beneath the building slab.

- Confirmatory sampling at the completion of remediation and acceptable cleanup levels meeting HWR TAGM 4046 is to be a condition to discontinue operation of the remedial system.

Surface Water Remedial Action Objectives

NONE-Surface water has not been impacted at the Gowanda Day Habilitation Center site. Surface water remediation is not an action objective for this property.

Sediment Remedial Action Objectives

None-the Remedial Investigation has determined that sediments in an aqueous environmental are not directly impacted by the Gowanda Day Habilitation Center. No permanent bodies of water (standing water bodies or flowing streams) are at or adjacent to the site. The proposed RAOs for soil and groundwater include actions to control future potential impact to sediment through contaminant concentration reduction in soil and groundwater at the site.

Indoor Air Remedial Action Objectives

The contaminants of concern consist of Chlorinated VOCs including TCE, Cis-DCE, Trans-DCE, Vinyl Chloride and Tetrachloroethene. The general response action is to lower indoor concentrations of the targeted VOCs to levels via operation of the SVE system to levels that meet NYSDOH criteria for re-use of the building.

6.2 Development of Remedial Alternatives

Alternatives outlined provide a range of responses that were evaluated for implementation at the Day Habilitation Center property. Some of the more aggressive approaches identified (if implemented) will attempt to clean up the site to allow for non restricted reuse. However, reaching cleanup objectives to this extent may not be practical and may not reach a point to solicit NYSDEC approval for end of remediation.

Air

Protection of human health from harmful vapor intrusion is the main consideration when selecting a remedial scenario. Currently the neighboring parcel to the east of the subject parcel is fitted with a basement ventilation system consisting of three sub-slab extraction points and an exhaust fan to help mitigate the intrusion of low level petroleum related VOCs. This system will continue to operate and it effectiveness will be evaluated by the NYSDOH. Any remedial alternative considered for other media shall include this indoor air mitigation method until the indoor air concentrations no longer warrant addressing. Alternative selection involving the production of a new point source air discharge that could potentially impact air quality is also a consideration in the development of remediation scenarios.

Groundwater

The alternatives considered for remediation were be based on achieving objectives that will recover and clean up groundwater to acceptable groundwater quality standards and the level of land use required by the NYSDEC. Offsite migration is the primary concern at this time. To maintain the clean up groundwater at the Gowanda Day Habilitation Center, the most cost-effective technology that will expedite remediation while achieving objectives should be maintained. The existing wells provide points of access to continually recover and monitor the groundwater.

6.3 Remedial Alternatives Evaluation

The remedial remedy is intended to eliminate or mitigate all significant threats to public health and the environment presented by contaminants at the Gowanda Day Habilitation Center site through the proper application of scientific and engineering principles. Where identifiable sources of contaminations exist, it will be removed or eliminated to the extent feasible.

The Remedial Action alternatives evaluated are specific to the media impacted at the Gowanda Day Habilitation Center site, are to allow for protection of public health and the environment and are based on contaminant-specific applicable standards, criteria and guidance (SCGs). Seven Remedial Alternatives have been evaluated. The alternatives include:

Alternative 1 – No Further Action

Alternative 2 – Monitor Natural Attenuation

Alternative 3 – Building Demolition and Source Area Soil Excavation

Alternative 4 – Groundwater Pump & Treat

Alternative 5 – Soil Vapor Extraction

Alternative 6 – Air Sparging

Alternative 7 – Enhanced Bioremediation

Each Remedial Alternative is described below. The various remedial alternatives are assessed individually based on evaluation of factors listed in 6NYCRR375-1.10(c). Remedial Alternatives selection should be based on meeting objectives of the cleanup program.[1] Seven characteristics are presented to evaluate each alternative. The alternatives will then be presented in a comparative ranking shown in Table 13. The alternative costs are compared in Table 15.

[1] New York State Department of Environmental Conservation Division of Environmental Remediation, "Municipal Assistance for Environmental Restoration Projects. Procedures Handbook. 1196 Clean Water /Clean Air Bond Act Environmental Restoration Projects – Title 5, July 2004".

6.3.1 Alternative 1 - No Further Action

No Further Action at the Gowanda Day Habilitation center is not applicable remedial alternative, given the condition of the site and the goal of OMRDD to re-use the building as a viable parcel. The "No Further Action" alternative would leave the site in an existing condition, with existing levels of groundwater contamination and sub-slab vapors no longer controlled or removed. The building would need to remain unused and unoccupied, and off-site migration of impacted groundwater and migration of VOCs into the building would no longer be controlled.

Potential benefits of no further action include no additional cleanup costs and no further site disruption.

Assessment of No Further Action

Potential limitations of No Further Action include:

- Leaving the property as non-viable and tax deficient.
- Potential offsite exposures from migration of impacted groundwater.
- On-going release of VOCs beneath the building would continue.
- Contaminated soil vapor intrusion to neighboring residences could occur.
- Continued presence of VOCs in the groundwater at the property perimeter.

6.3.2 Alternative 2 - Monitor Natural Attenuation

Although Monitor Natural Attenuation (MNA) is not considered a presumptive remedy, the US EPA does recognize it as a method to be used when comparing alternatives for remedy selection[2]. This alternative leaves the site as is and anticipates that natural attenuation of the subsurface contamination will occur over time. The approach is that natural remediation and breakdown of contaminants will occur without the implementation of engineered controls. Biodegradation, dilution/dispersion and/or adsorption may occur on site to reduce VOC and SVOC concentrations so that they are within NYSDEC groundwater quality standards and TAGM #4046 soil cleanup guidelines.

A long-term monitoring program would be put into place that could include groundwater quality monitoring and soil boring analysis at specified intervals. The formulation of data trends that indicates the decrease in contaminant concentrations is one way to measure attenuation. By-products of natural attenuation may be measured as well. Deviations in the chemical makeup of the site's subsurface conditions can be monitored to determine if biodegradation of contaminants is occurring. If the analysis of data trends is inconclusive in determining whether natural attenuation is occurring, laboratory studies can used to simulate subsurface conditions and determine the effectiveness of MNA.

[2] Commonly Asked Questions Regarding The Use Of Natural Attenuation For Petroleum-Contaminated Sites At Federal Facilities, USEPA, Air Force, Army, Navy and Coast Guard Partnership, http://www.denix.osd.mil/denix/Public/Library/Attenuation/attenuation.html

Groundwater monitoring should be conducted on a semi-annual basis using the existing monitoring wells on site. Subsurface boring and surface soil sampling would also be recommended on an annual basis.

Assessment of Monitor Natural Attenuation

Potential benefits of Monitor Natural Attenuation include:

- Reduced generation of potentially hazardous wastes.
- Minimized site disruption.
- Minimal field activities with limited labor.
- Less costs in terms of achieving overall remedial objectives.

Potential limitations include:

- Lengthy clean up period.
- Continued plume migration if attenuation is not at an adequate rate.
- Continued volatilization of chlorinated VOCs from impacted groundwater, which will continue to accumulate beneath the building slab and may migrate into the building.
- Long-term monitoring costs.
- Impacted surface and subsurface soil beneath the former building footprint left unaddressed.

6.3.3 Alternative 3 – Building Demolition and Source Area Soil Removal

The predominant source area for the impacted groundwater and occurrence of VOCs within the Day Habilitation Center building has been determined to be the contaminant mass beneath the building.

Contaminated soils would be unearthed by using excavation equipment and field screening data to create two piles of soil. Clean soils could be used to backfill the excavations once contaminated soil removal has been completed. Additional backfill would need to be acquired to bring excavations back up to grade level unless the treatment of the contaminated soils were to be performed on site by either land farming or steaming of soils within a controlled environment such as Baker Tanks. The latter of these options will be disregarded for consideration at this time due to cost, timing and security issues of treating the contaminated soils on site.

Contaminated soils could be transported off-site to a NYSDEC approved solid waste disposal landfill or recycling facility.

Assessment of Building Demolition and Source Area Soil Removal

Potential benefits of excavation include:

- Immediate removal of limited quantities grossly contaminated soils.
- Limited on-going operations & maintenance (O&M) support required.
- Relatively short duration of soil remedial time in effectively reducing further risk for offsite contamination offsite.

Potential limitations include:

- This option would require demolition of the building. Building contents would need to be salvaged or removed for off-site use; remaining building infrastructure and the building itself would need to be disposed of off-site as C & D debris. A portion of the building's concrete slab would also need to be broken up and removed to obtain access to the areas of impacted subsurface soils.
- Not all soils beneath the building may require removal; field screening, staging and testing will be required to segregate soils that will require off-site disposal. An area of approximately 200 feet (north-south direction) by 160 feet (east-west direction) overlies the majority of the area of impacted groundwater. Assuming an average excavation depth of 15 feet, a volume of 18,000 cubic yards of subsurface soil would be generated. Assuming an average weight of 1.5 tons per cubic yard of excavated soil, approximately 27,000 tons of soils would be removed.
- Does not address existing dissolved VOCs in the groundwater. Impacted groundwater could continue to migrate off-site.

6.3.4 Alternative 4 – Groundwater Pump & Treat

Migration control of the groundwater moving off site currently exists with the IRM system. Recovery of VOCs beneath the building has been occurring since IRM activation with the removal of groundwater to establish an area of hydraulic containment, with VOCs collecting in a depressed water table surface (overlapping pattern of radius of influence and cones of depression at each of the 6 groundwater recovery wells). This alternative achieves removal of groundwater for treatment and discharge using the existing IRM system (pump and treat technology). The goal of this alternative is to implement recovery of impacted groundwater to prevent further migration of dissolved phase VOC contamination from the site towards off-site locations.

The existing groundwater treatment system is currently able to treat recovered groundwater prior to sanitary sewer discharge. The recovered and treated groundwater is discharged to the local sanitary sewer system in compliance with the Village of Gowanda Sewer Use permit.

Assessment of Groundwater Pump & Treat

Potential benefits of groundwater migration control (pump and treat-type system) include:

- Direct access to aquifer.
- Hydraulic containment of impacted groundwater.
- Removal of dissolved contaminants in groundwater.
- De-watering of the saturated soils beneath the building, allowing for greater effectiveness of a Soil Vapor Extraction system.

Potential limitations include:

- O&M intensive, with long-term monitoring costs to demonstrate effectiveness.
- May require a relatively long remedial time.
- Electrical service requirements.
- Treated groundwater will require discharge to the local sewer system.

6.3.5 Alternative 5 – Soil Vapor Extraction

Soil Vapor Extraction (SVE) is a remedial technology that employs a blower system operating at differing ranges depending on the type of equipment selected. SVE systems are used to treat unsaturated subsurface zones and as a way to mitigate soil vapor intrusion to nearby, occupied structures. In addition, in-situ stripping of the saturated zone may further reduce VOCs in the subsurface.

A vacuum is applied to a series of extraction points or a horizontal lateral targeted in the unsaturated zone where contaminants are sorbed onto soil particulate and where soil vapor contains significant concentrations of VOCs. Extraction points or subsurface trenches would need to be installed.

Two-inch or four-inch diameter SCH 40 PVC would be installed as conveyance laterals and extraction points where vacuum could be delivered to target areas for recovery of contaminated soil vapor as well as stripping VOCs from soil media. The blower system would be a small skid mounted unit installed in a protective covering or fiberglass shed. The unit would also include a moisture separator, holding tank, particulate filter and an exhaust point. The exhaust would consist of a PVC riser extending to a level determined to be of minimal impact to the adjacent community.

Based on significant concentrations of VOCs it is likely that pre-treatment prior of the vapor would be required. Activated carbon containers could be installed on the discharge side of the blower to strip VOCs for suitable discharge to the environment.

Assessment of Soil Vapor Extraction

Potential benefits of SVE include:

- Serves a multiple objectives: addresses unsaturated source area, provides mitigation for indoor air quality concerns and enhances the transfer of VOCs from dissolved to vapor phase.
- Low to moderate cost for monitoring system effectiveness.
- Small skid mounted system.

Potential limitations include:

- System security.
- Mid to long term timeframe to reach remedial objectives.
- Require electrical service to operate system.
- No impact to contaminated groundwater.
- Requires treatment of waste stream resulting in elevated treatment costs for carbon.
- Noise.

6.3.6 Alternative 6 – Air Sparging

Description

Air sparging involves injection of ambient air directly into the saturated subsurface area to address dissolved phase VOCs in groundwater. Air sparging is a potentially effective means of treating petroleum hydrocarbons because it promotes two significant removal mechanisms – biodegradation and volatilization. Air sparging can remove contaminants through volatilization, either directly, by "evaporating" the adsorbed phase, or indirectly, by stripping contaminated groundwater[3]. In addition, this approach is efficient in that increasing oxygen concentrations in the saturated zone will enhance aerobic bioremediation and can impact a greater area on a per-point basis than direct oxygen injection, but not to the same concentrations.

Dissolved VOCs in groundwater will be volatilized and induced into the air stream of the vadose zone. An air sparging system can operate at higher pressures than a Direct Oxygen Injection system and can impact a greater area on a per-point basis.

The biodegradable VOCs in groundwater and the vadose zone will be reduced though enhanced bioremediation, which will be accelerated by increasing the oxygen content in the groundwater to greater than background levels. Injecting atmospheric air with an oxygen concentration of approximately 21% will increase available oxygen to the groundwater. This will increase the metabolic rate of naturally occurring aerobic bacteria able to digest VOCs. This may also

[3] Handbook of Bioremediation, Treatment of Petroleum Hydrocarbons, page 65. Lewis Publishers, 1994.

increase bacteria concentrations and metabolic activity, depending on availability of nutrients, proper pH and concentrations of VOCs.

Air sparging is intended to operate at greater pressures than oxygen injection. As a result air sparging points can impact a greater radius than oxygen injection points. An oxygen injection system operates at lower flow rates, and can be limited by the capacity of the oxygen generator, which can burn out or result in an oxygen concentration in the influent less than 100%.

In practice, some degree of both volatilization and enhanced bioremediation occurs when an air sparging system using atmospheric air is used. When volatile constituents are present, both physical removal through volatilization and enhanced bioremediation occurs with air sparging using dried ambient air. A vapor extraction component may be required to create negative pressures in the vadose zone through a series of extraction points that control the vapor plume migration. When relatively high concentrations of gasoline VOCs are present, the initial removal mechanism is volatilization. When concentrations have been reduced to a point where remaining VOCs remain adsorbed onto soil particles and can longer be volatilized, enhanced bioremediation may occur.

Assessment of Air Sparging

Potential benefits of air sparging include:

- Aggressive system that treats dissolved phase VOCs in groundwater.
- In-situ, enhanced volatilization and enhanced aerobic activity both occur.
- No active removal of groundwater and subsequent discharges.
- Portability of technology.
- May result in a relatively accelerated cleanup schedule.

Potential limitations include:

- Air sparging may result in increased volatilization of VOCs from the saturated zone below the water table. However, a soil vapor extraction system would be required to collect and treat the sub-slab vapors to prevent levels within the building accumulating to unacceptable levels, and to prevent off-site migration of vapors in the vadoze zone.
- Relatively low initial oxygen concentrations in groundwater to enhance radius of influence. Does not increase oxygen concentrations to the same level as Direct Oxygen Injection.
- Long-term monitoring costs to demonstrate effectiveness.
- Potential increased volatilization of contaminants migrating either directly into the building, or migrating off-site, potentially impacting adjacent residences.
- Long-term O&M related costs for equipment function and injection point cleaning.
- Would require electrical service to operate system.

- System security.
- Initial installation cost and purchase of system.
- No immediate impacts to source areas.

6.3.7 Alternative 7 – Enhanced Bioremediation

Description

Enhanced bioremediation is a widely used method to treat subsurface contamination in an in-situ manner. This technology uses microorganisms to recycle organic materials in either an aerobic or anaerobic process to reduce groundwater concentrations of VOCs and SVOCs. Bioremediation can be effective on a variety of chlorinated VOCs, including the compounds detected at the Gowanda Day Habilitation Center. The principal contaminant, TCE can undergo a microbiological decay process to Cis-1,2-DCE, Trans-1,2-DCE, Vinyl Chloride, and eventually to carbon dioxide (CO_2), Ethylene ($CH_2=CH_2$) and hydrochloric acid (HCl).

Either aerobic (oxygen-enhanced) or anaerobic (non-oxygen environment) bioremediation product could be introduced into the subsurface using dedicated injection points or "wells" to introduce product containing socks. Existing monitoring well use as injection points should not be considered due to potential fouling at the screened interval and loss of reduction of valid monitoring points for site assessment purposes. Periodic monitoring would be required to assess the effectiveness of the application. Although there are studies showing bioremediation as the primary remedial tool, it may be more effective as a secondary device to reach objectives.

Various existing technologies include Hydrogen Release Compounds ® (HRC) or Oxygen Release Compound® (ORC) is a product designed specifically for the in-situ treatment of VOCs contamination or any biologically degradable substance in the groundwater environment. Appropriate HRC ® or ORC ®compounds are mixed with water and pressure injected into the subsurface. Once hydrated it releases molecular oxygen which is then utilized by indigenous microbial populations to naturally degrade or break down the contaminant into harmless end products.

Assessment of Enhanced Bioremediation

Potential benefits of enhanced bioremediation include:

- In-situ, enhanced natural microbiological activity with either aerobic or anaerobic degradation of VOCs in the groundwater.
- Passive, time released approach.
- Addresses both saturated soil and groundwater contamination.
- Minimal O&M following application.
- Relatively cost effective.

- Would not require treatment system or electrical service (based on direct placement or injection).
- Additional applications could be provided to dedicated application points.

Potential limitations include:

- Lack of groundwater in the unsaturated zone to make the product effective on a continual basis to impact subsurface soil.
- Long-term monitoring costs to demonstrate effectiveness.
- May not be effective in areas of elevated VOC/SVOC concentration or areas of free phase product.
- Does not address impacted surface soil.
- Cost to install dedicated application points.

6.4 Comparative Analysis

Alternative 1 – No Further Action

The identification of subsurface contamination and probability of offsite migration of contaminants would make leaving the site as is, an option only if OMRDD, the NYSDEC and the NYSDOH feel that potential off site contamination is a non-issue and poses no risk to human health. Overall, this alternative does not appear to be a viable option.

Alternative 2 – Monitor Natural Attenuation

Monitoring Natural Attenuation offers nothing more compared to Alternative 1 then simply updating existing conditions. This alternative does appear to be viable at this time.

Alternative 3 – Building Demolition and Source Area Soil Removal

Demolishing the Gowanda Day Habilitation Center and initiating source area soils removal would result in loss of the building and may incur costs in the $800,000 to $1,000,000 range for demolition, excavation, screening, transportation and off-site disposal. This alternative does not meet OMRDD long-term goals for re-use of the facility.

Alternative 4 – Groundwater Pump & Treat

Groundwater Pump& Treat has been initiated at the Gowanda Day Habilitation Center with the activation of the Interim Remedial Measures System. This is not a new alternative, but rather a continuation of the IRM system.

Groundwater pump and treat is a long term approach to controlling migration of and removing contaminated groundwater. There is significant cost in installing a system and more than likely, this system would require resource expenditure to maintain operability. This alternative does provide benefit in creating a cone of depression to minimize further migration of contaminated groundwater off site.

This alternative is a good choice for groundwater considerations, especially for containment. However it is not considered a stand alone option in meeting objectives.

Alternative 5 – Soil Vapor Extraction

Soil Vapor Extraction (SVE) has been initiated at the Gowanda Day Habilitation Center with the activation of the Interim Remedial Measures System. This is not a new alternative, but rather a continuation of the IRM system.

SVE is a long term approach to controlling migration of and removing contaminated groundwater. There is significant cost in installing a system and more than likely, this system would require resource expenditure to maintain operability. This alternative does provide benefit in that removal of the targeted chlorinated VOCs from beneath the building may result in site conditions eventually achieving indoor air qualities sufficient for re-use of the facility.

This alternative is a good choice for addressing the volatilization of impacted groundwater. However it is not considered a stand alone option in meeting objectives.
An SVE system could be very effective in attempting to meet several objectives for site cleanup including impacting unsaturated subsurface soils, dissolved phase VOCs and collection of subsurface vapor contaminants. Of all the alternatives presented, this one addresses the most remedial objectives for this site at moderate cost.

Alternative 6 – Air Sparging

Air Sparging is an effective technology for treating petroleum related VOC's in groundwater through encouraging enhanced aerobic bioremediation and increased volatilization of compounds from groundwater. This alternative focuses primarily on volatilization, with a complimentary effect at increasing aerobic degradation. However, there are significant up front costs related to this alternative, which will not provide an approach that addresses all remedial objectives.

Increased mobilization of contaminants in entrained vapor is a detriment that may require increased monitoring and mitigation. This alternative does not address all remedial objectives for this site.

Alternative 7 – Enhanced Bioremediation

The use of enhanced bioremediation may or may not be effective on the chlorinated VOCs present at the Day Habilitation Center property. Further investigative work would be necessary to determine the effectiveness of enhanced bioremediation through aerobic (oxygen enriched) or

anaerobic (oxygen deficient) conditions, to determine if an effective microbiological population capable of treating the chlorinated VOCs exists or needs to be introduced, and limiting factors such as nutrients and toxicity would need to be determined. This alternative is also sensitive to climate, and may not be effective on a yearly basis. This alternative is not a stand alone option.

TABLE 13
REMEDIAL ALTERNATIVES RANKING COMPARISON

Alternative No.	HH/Env	SCGs	Long Term	Reduce	Short Term	Feasible	Community	Total
1	0	0	0	0	0	6	0	6
2	0	0	0	0	0	6	2	8
3	4	4	4	4	6	2	4	28
4	4	4	6	6	4	6	4	34
5	4	4	6	6	4	6	4	34
6	2	2	2	2	0	4	2	14
7	2	2	2	2	0	4	2	14

Score based on 0-6 ranking system where 6 = objective met, 4 = objective mostly met, 2 = objective met in part, and 0 = objective not met.

HH/Env = Overall Protection of Human Health and the Environment.
SCGS = Compliance with Standards, Criteria and Guidance.
Long Term = Long-Term Effectiveness and Permanence.
Reduce = Reduction of Toxicity, Mobility or Volume with Treatment.
Short Term = Short-Term Effectiveness.
Feasible = Implementability, ability for this alternative to be implemented.
Community = Community Acceptance.

7.0 CONCLUSIONS

Based on review of laboratory analytical data and field observations collected between May – November 2005 the continued operation of the Interim Remedial Measures (IRM) system is the Remedial Alternative that best meets the objectives for re-use of the existing facility and eventual environmental restoration at the Gowanda Day Habilitation center. A combination of Remedial Alternative 4 (Groundwater Pump & Treat) and Remedial Alternative 5 (Soil Vapor Extraction) are components of the existing IRM system. Improvements to the existing IRM system best meet the objectives to meet objectives as the final remediation remedy.

Modifications to the IRM Groundwater Treatment System (GTS) and Soil Vapor Extraction System (SVE) will be required to fully address the objectives of the remediation program. These modifications will include:

- Groundwater recovery wells will be kept on-line on a full time basis. This will increase the GTS effective radii of influence and will improve the ability of the system in removing VOCs from the groundwater contaminant mass and will assist in preventing off-site migration of impacted groundwater.

- The existing GTS system will require modifications to allow for removal of greater quantities of sediment. This will result in the ability to increase the drawdown at the groundwater recovery wells, increase the on-line performance of the six groundwater recovery wells and increase the radius of influence at each recovery well.

- Engineering controls or up-grades to the GTS and SVE system will be implemented reduce the amount of VOC off-gassing from the systems or in the portion of the building where the systems are located.

- The volume of sub-slab air recovered by the SVE system will to be increased, with resulting increase in the vacuum at the six vapor extraction wells. The existing SVE system can operate at a greater vacuum with modifications to the existing GTS.

- A program of regular groundwater monitoring, sampling and laboratory analysis to evaluate reduction in the contaminant plume beneath the building will be implemented.

- A program of sub-slab monitoring, sampling and laboratory analysis will be implemented to ensure on-going reductions in VOC concentrations beneath the building.

- The building existing heating and ventilation system will be reactivated to maintain adequate air exchange and prevent the accumulation of stagnant pockets of air impacted with accumulated VOCs.

- An environmental easement will be filed for the subject property detailing future site re-use. The easement will include requirements that a separate, independently operated sub-slab depressurization system will be installed as a condition for future re-occupation, to operate independently of the existing SVE system. As long as the building remains vacant and unoccupied, the sub-slab depressurization system will not be required.

8.0 REFERENCES

Bergmann Associates "Final Interim Remedial Measures System Work Plan", Gowanda Day Habilitation Center, Voluntary Cleanup Agreement V-00464-9, March 15, 2004.

Bergmann Associates "Final Supplemental Site Investigation Report", Gowanda Day Habilitation Center, Town of Persia, Cattaraugus County, NY, Voluntary Cleanup Agreement V-00464-9, January 5, 2004.

Bergmann Associates "Site Investigation Report", Gowanda Day Habilitation Center, Town of Persia, Cattaraugus County, NY, Voluntary Cleanup Agreement V-00464-9, April 2003.

Bergmann Associates "Supplemental Site Investigation Work Plan", Gowanda Day Habilitation Center, Town of Persia, Cattaraugus County, NY, May 2003.

Bergmann Associates, "Investigation Work Plan for a Voluntary Cleanup Program Site Investigation, Gowanda Day Habilitation Center", October 2001.

Bergmann Associates, "Subsurface Investigation and Indoor Air Quality Summary Report", February 26, 2001.

Bergmann Associates, "Soil Gas Investigation Summary Report", July 14, 2000.

Bouwer, H. and Rice, R.C., "A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells", Water Resources Research Vol. 12, No.3, pp. 423-428, June 1976.

Bouwer, H., "The Bouwer and Rice Slug Test – An Update", Ground Water, Vol. 27, No. 3, pp. 304-309, May-June 1989.

Commonly Asked Questions Regarding The Use Of Natural Attenuation For Petroleum-Contaminated Sites At Federal Facilities, USEPA, Air Force, Army, Navy and Coast Guard Partnership, http://www.denix.osd.mil/denix/Public/Library/Attenuation/attenuation.html

Fetter, C. W. "Applied Hydrogeology 2nd Edition", 1988.

New York State Department of Environmental Conservation Division of Environmental Remediation, "Guidance for the Development of Data Usability Summary Reports"

New York State Department of Environmental Conservation Division of Environmental Remediation, "Municipal Assistance for Environmental Restoration Projects. Procedures Handbook. 1196 Clean Water /Clean Air Bond Act Environmental Restoration Projects – Title 5, July 2004".

New York State Department of Environmental Conservation, Division of Hazardous Waste Remediation Technical and Administrative Guidance Memorandum HWR-94-4046, "Determination of Soil Cleanup Objectives and Cleanup Levels", Revised January 24, 1994.

New York State Department of Environmental Conservation, 6 NYCRR Part 375, Subpart 375-1, Section 375-1.10, Remedy Selection, http://www.dec.state.ny.us/website/regs/375.

New York State Department of Environmental Conservation, Division of Water, Technical and Operational Guidance Series 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitation, dated June 1998, with April 2000 Addendum.

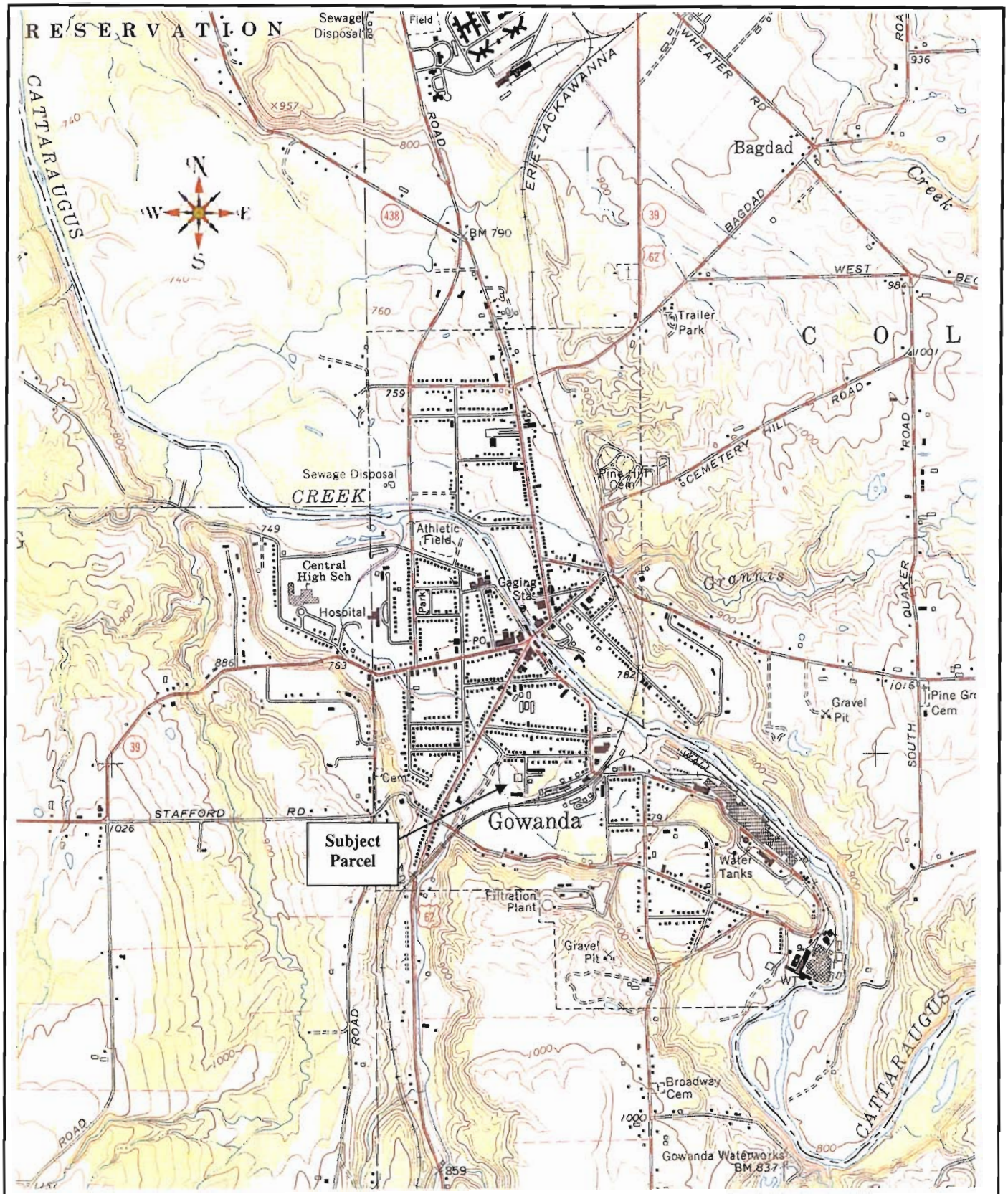
New York State Department of Health "Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes" (http://www.health.state.ny.us/nysdoh/indoor/fuel_oil.htm) February, 2005.
New York State Department of Health "Draft Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (http://www.health.state.ny.us/nysdoh/gas/svi_guidance), February 2005.

New York State Museum Map and Chart Series #15, "Geologic Map of New York, Niagara Sheet, 1970.

New York State Museum Map and Chart Series #40, "Surficial Geologic Map of New York, Finger Lakes Sheet, 1988.

Regenesis. Inc. San Clemente, CA. http://www.regenesis.com/products/

Robert S. Kerr Environmental Research Laboratory, "Handbook of Bioremediation", Lewis Publishers and CRS Press Inc., 1994.



Bergmann associates

GOWANDA DAY HABILITATION CENTER
Gowanda, Cattaraugus County, New York
USGS Topographic Map
USGS 7.5 Minute Topographic Map, Gowanda, NY Quadrangle, 1976
Scale: 1inch = 2,000 feet

Date
September 2006

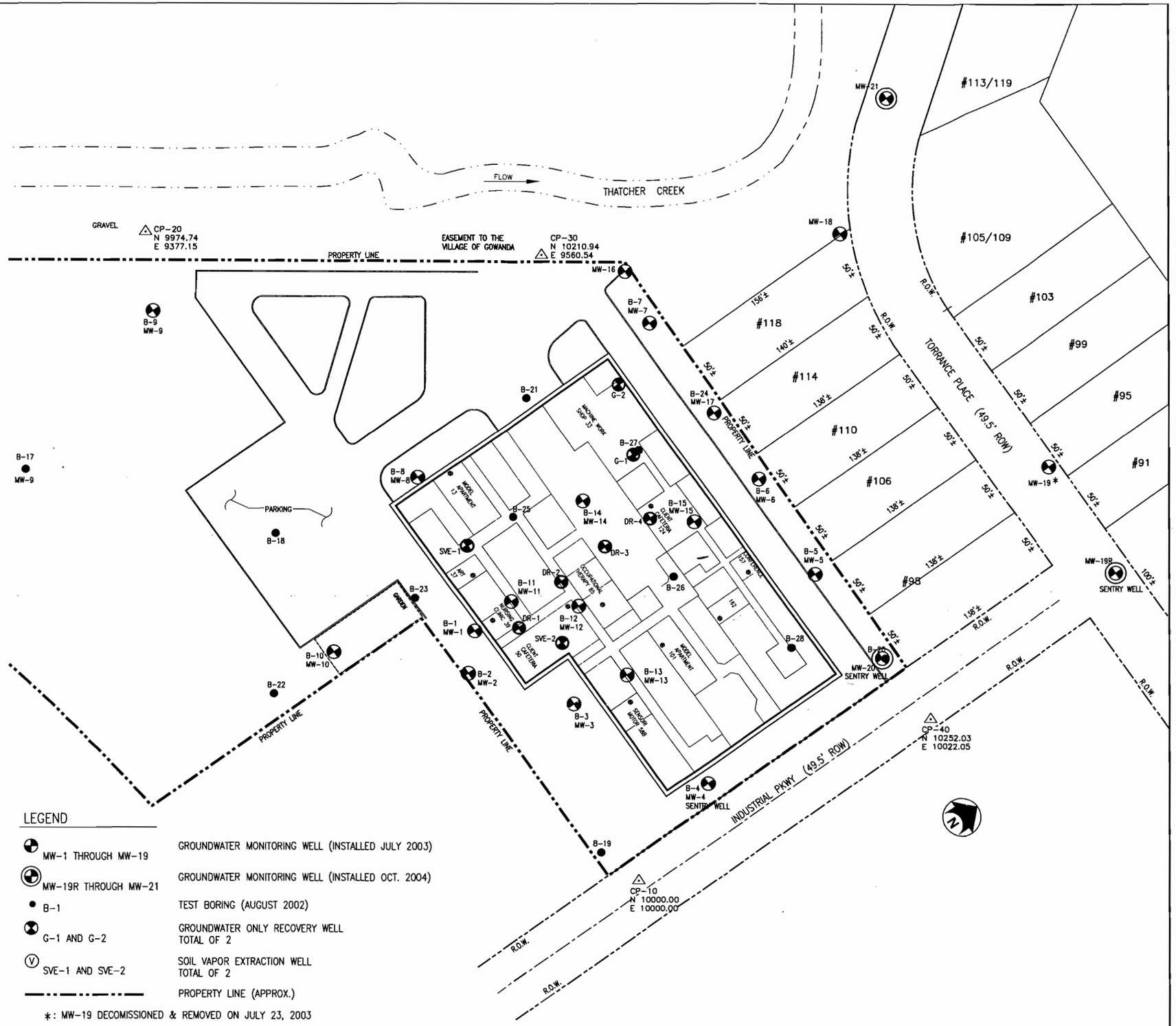
Figure
1

MONITORING WELLS & BORING LOCATIONS

SAMPLE	NORTH	EAST	ELEVATION	DESCRIPTION
MW-1	10005.75	9770.81	778.51 778.52 778.23	ASPH. RIM PVC
MW-2	9983.26	9795.25	778.36 778.38 778.08	ASPH. RIM PVC
MW-3	10036.20	9859.98	778.59 778.61 778.38	ASPH. RIM PVC
MW-4	10085.20	9967.62	778.66 778.77 778.43	GRD. RIM PVC
MW-5	10243.23	9880.34	778.80 778.85 778.61	ASPH. RIM PVC
MW-6	10249.86	9795.88	778.93 781.35 781.10	GRD CASE PVC
MW-7	10249.65	9650.24	778.77 781.17 780.94	GRD CASE PVC
MW-8	10038.09	9649.08	778.49 781.75 781.33	GRD CASE PVC
MW-9	9945.36	9430.13	780.56 782.84 782.61	GRD CASE PVC
MW-10	9909.53	9724.56	777.46 780.10 780.02	GRD CASE PVC
MW-11	10041.23	9767.54	778.82 778.81 778.58	FLOOR RIM PVC
MW-12	10082.02	9799.74	778.84 778.85 778.50	FLOOR RIM PVC
MW-13	10082.09	9864.35	778.88 778.87 778.39	FLOOR RIM PVC
MW-14	10130.64	9734.67	778.80 778.82 778.43	FLOOR RIM PVC
MW-15	10190.80	9795.30	778.78 778.76 778.38	FLOOR RIM PVC
MW-16	10256.48	9607.09	778.17 781.05 780.43	GRD CASE PVC
MW-17	10250.56	9734.35	778.67 781.10 779.85	GRD CASE PVC
MW-18	10406.65	9675.18	776.73 776.65 776.39	GRD RIM PVC
MW-19	10436.35	9912.63	775.04 775.10 774.82	GRD RIM PVC
MW-19R	10432.32	10009.16	774.56 774.55 774.20	ASPH RIM PVC
MW-20	10248.05	9962.73	778.47 778.45 778.04	ASPH RIM PVC
MW-21	10493.88	9609.90	775.47 775.45 774.76	ASPH RIM PVC
B-16	9736.69	9324.99	782.23	GRD.
B-17	9795.99	9475.17	780.40	GRD.
B-18	9925.09	9623.75	777.55	ASPH.
B-19	9988.66	9965.74	778.30	ASPH.
B-20	10249.88	9964.03	778.36	ASPH.
B-21	10139.46	9644.31	774.51	GRAV.
B-22	9853.67	9725.31	776.69	GRD.
B-23	9983.81	9724.83	778.50	ASPH.
B-24	10249.26	9732.76	778.88	GRD.
B-25	10079.30	9714.32	778.79	FLOOR
B-26	10154.35	9821.64	778.84	FLOOR
B-27	10187.79	9726.14	778.80	FLOOR
B-28	10196.32	9917.18	778.83	FLOOR

RECOVERY WELL LOCATIONS

SAMPLE	NORTH	EAST	ELEVATION	DESCRIPTION
DR-1	10034.54	9787.80	778.81 779.66 779.69	FLOOR PVC RISER PVC CAP
DR-2	10081.63	9776.80	778.87 779.93 779.96	FLOOR PVC RISER PVC CAP
DR-3	10124.45	9773.02	778.83 779.78 779.81	FLOOR PVC RISER PVC CAP
DR-4	10164.98	9774.65	778.80 779.64 779.67	FLOOR PVC RISER PVC CAP
G-1	10182.25	9726.78	778.80 779.83 779.86	FLOOR PVC RISER PVC CAP
G-2	10203.62	9675.79	778.86 779.72 779.76	FLOOR PVC RISER PVC CAP
SVE-1	10038.31	9713.33	778.77 779.66 N/A	FLOOR PVC RISER PVC CAP
SVE-2	10055.47	9816.17	778.86 779.91 N/A	FLOOR PVC RISER PVC CAP



LEGEND

MW-1 THROUGH MW-19	GROUNDWATER MONITORING WELL (INSTALLED JULY 2003)
MW-19R THROUGH MW-21	GROUNDWATER MONITORING WELL (INSTALLED OCT. 2004)
B-1	TEST BORING (AUGUST 2002)
G-1 AND G-2	GROUNDWATER ONLY RECOVERY WELL TOTAL OF 2
SVE-1 AND SVE-2	SOIL VAPOR EXTRACTION WELL TOTAL OF 2
	PROPERTY LINE (APPROX.)

*: MW-19 DECOMISSIONED & REMOVED ON JULY 23, 2003

NOTE:
BASEMAP INFORMATION FROM MAP ENTITLED "SURVEY OF PART OF LOT 27, TOWNSHIP 6, RANGE 8-VILLAGE OF GOWANDA, CATTARAUGUS COUNTY, NEW YORK" PREPARED BY KREHBIEL ASSOCIATES, DWG# D-2297, DATED 6-16-92

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GOWANDA DAY

HABILITATION CENTER
4 INDUSTRIAL PLACE
GOWANDA, NY

BERGMANN associates
Engineers / Architects / Surveyors

200 First Federal Plaza
28 East Main Street, Rochester, New York 14614
585.232.5135 / 585.232.4652 fax

REVISIONS

NO.	DATE	DESCRIPTION	REV.	CK'D

0 40 80 120 FT
SCALE BAR

MONITORING WELL AND RECOVERY WELL LOCATION MAP

Project Manager: G. FLISNIK
Designed by: E. JONES
Drawn by: T. HAHN
Checked by: G. FLISNIK
Date Issued: FEBRUARY 27, 2006
Scale: 1"=80'
Date

Project Number: 5596.28
File Name: I:\DASNY\5596.56 GOWANDA05-06\FIG2.DWG
Drawing Number:

FIG-2

LEGEND

- MW-1 THROUGH MW-19 — GROUNDWATER MONITORING WELL (INSTALLED JULY 2003)
- MW-19R THROUGH MW-21 — GROUNDWATER MONITORING WELL (INSTALLED OCT. 2004)
- B-1 — TEST BORING (AUGUST 2002)
- DR-1 THROUGH DR-4 — DUAL GROUNDWATER & SVE RECOVERY WELL TOTAL OF 4
- G-1 AND G-2 — GROUNDWATER ONLY RECOVERY WELL TOTAL OF 2
- SVE-1 AND SVE-2 — SOIL VAPOR EXTRACTION WELL TOTAL OF 2
- SP1 THROUGH SP8 — SUB-SLAB, SVE VACUUM & SAMPLING POINTS TOTAL OF 8
- INDOOR AIR QUALITY SAMPLING POINTS, SEPTEMBER 2000 TOTAL OF 11
- PROPERTY LINE (APPROX.)
- ROW — RIGHT OF WAY (APPROX.)

*: MW-19 DECOMISSIONED & REMOVED ON JULY 23, 2003

NOTE:
BASEMAP INFORMATION FROM MAP ENTITLED "SURVEY OF PART OF LOT 27, TOWNSHIP 6, RANGE 8-VILLAGE OF GOWANDA, CATTARAUGUS COUNTY, NEW YORK" PREPARED BY KREHBIEL ASSOCIATES, DWG# D-2297, DATED 6-16-92

N

TORRANCE PLACE (49.5' ROW)

#105/109 · #103 · #99 · #95 · #91 · #87 · #118 · #114 · #110 · #106 · #102 · #98

MW-21 · MW-19* · MW-19R SENTRY WELL · MW-18 · MW-16 · MW-20 SENTRY WELL · MW-4 SENTRY WELL

THATCHER CREEK · FLOW · EASEMENT TO THE VILLAGE OF GOWANDA · GRAVEL

CP-30 N 10210.94 E 9560.54 · CP-40 N 10252.03 E 10022.05 · CP-20 N 9974.74 E 9377.75 · CP-10 N 10000.00 E 10000.00

INDUSTRIAL PKWY (49.5' ROW)

MACHINE WORK SHOP 33 · CONFERENCE 157 · CLIENT CAFETERIA 124 · 162 · MODEL APARTMENT 101 · OCCUPATIONAL THERAPY 85 · SENSORI MOTOR 58B · MODEL APARTMENT 13 · ART 37 · NURSING CLINIC 39 · CLIENT CAFETERIA 50 · GARDEN · PARKING

B-1 MW-1 · B-2 MW-2 · B-3 MW-3 · B-5 MW-5 · B-6 MW-6 · B-7 MW-7 · B-8 MW-8 · B-9 MW-9 · B-10 MW-10 · B-11 MW-11 · B-12 MW-12 · B-13 MW-13 · B-14 MW-14 · B-15 MW-15 · B-24 MW-17 · B-27 MW-16 · G-1 · G-2 · DR-1 · DR-2 · DR-3 · DR-4 · SP1 · SP2 · SP3 · SP4 · SP5 · SP6 · SP7 · SP8 · SVE-1 · SVE-2 · B-18 · B-19 · B-20 MW-20 SENTRY WELL · B-21 · B-23 · B-25 · B-26 · B-28

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NOTE:
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0 30 60 90 FT
SCALE BAR

INDOOR AIR QUALITY AND SVE SUB-SLAB SAMPLING POINTS

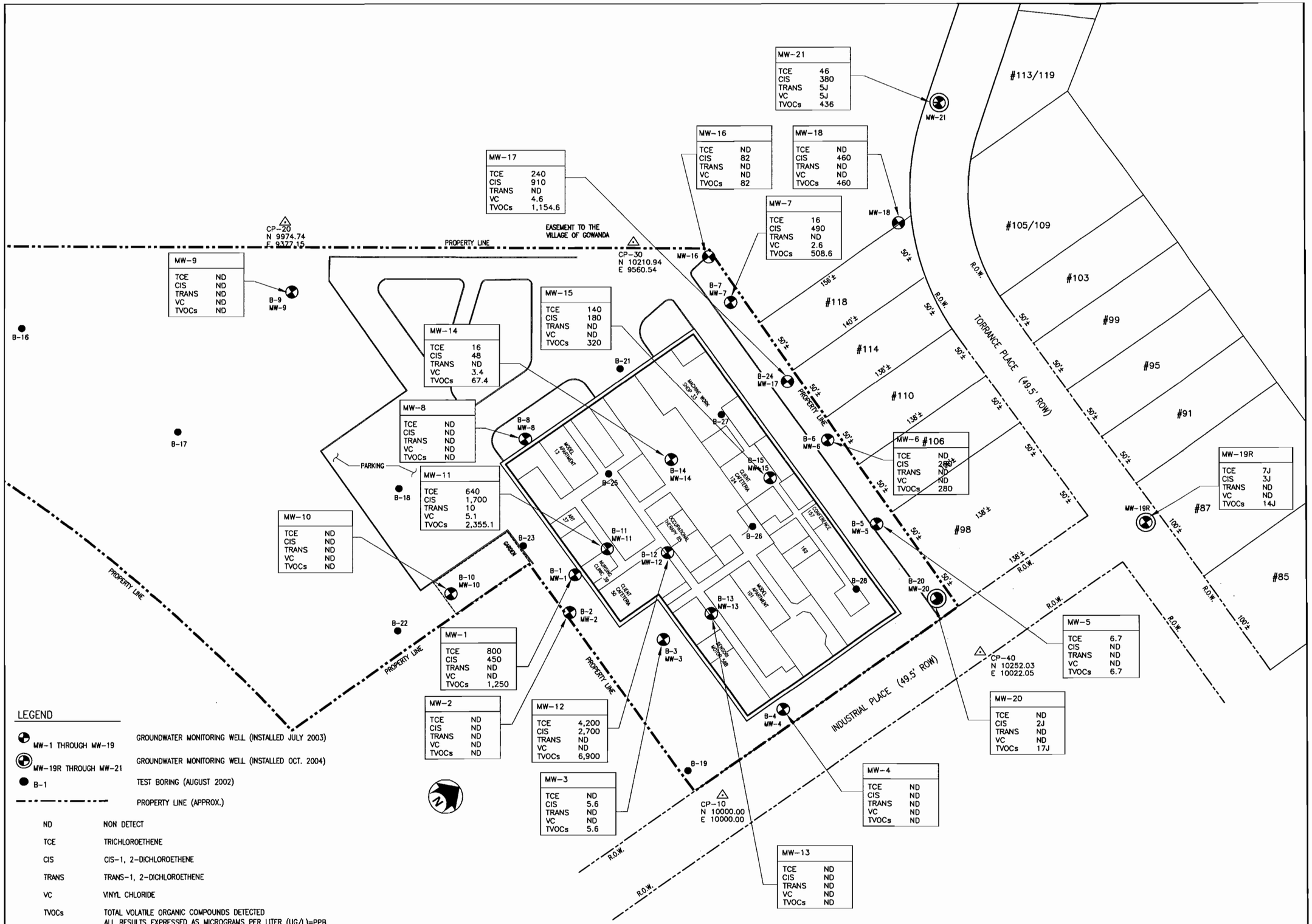
Project Manager: G. FLISNIK
Designed by: E. JONES
Drawn by: T. NAHN
Checked by: G. FLISNIK
Date Issued: FEBRUARY 27, 2006
Scale: 1"=60'

Date

Project Number: 5596.28
File Name: I:\DASNY\5596.56 GOWANDA05-06\FIG3.DWG
Drawing Number:

FIG-3

of



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0 40 80 120 FT
SCALE BAR

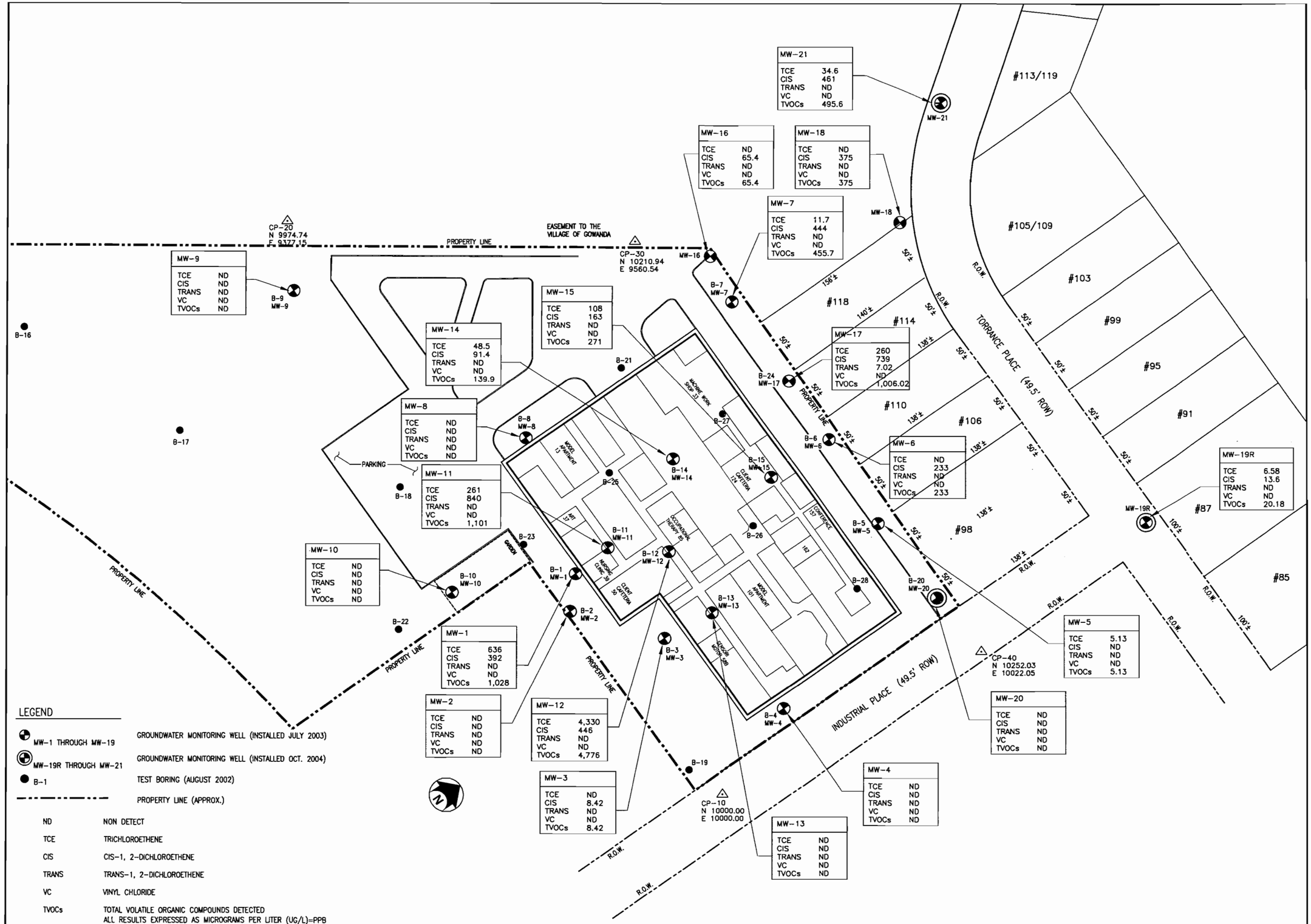
OCTOBER 2004 GROUND WATER ANALYTICAL RESULTS SUMMARY POSTING

Project Manager: G. FLISNIK
Designed by: E. JONES
Drawn by: T. HAHN
Checked by: G. FLISNIK
Date Issued: OCTOBER 5, 2005
Scale: 1"=80'
Date

Project Number: 5596.28
File Name: I:\DASNY\5596.56\GOWANDA05-06\FIG4.D
Drawing Number:

FIG-4

of



LEGEND

MW-1 THROUGH MW-19	GROUNDWATER MONITORING WELL (INSTALLED JULY 2003)
MW-19R THROUGH MW-21	GROUNDWATER MONITORING WELL (INSTALLED OCT. 2004)
B-1	TEST BORING (AUGUST 2002)
	PROPERTY LINE (APPROX.)

ND	NON DETECT
TCE	TRICHLOROETHENE
CIS	CIS-1, 2-DICHLOROETHENE
TRANS	TRANS-1, 2-DICHLOROETHENE
VC	VINYL CHLORIDE
TVOCs	TOTAL VOLATILE ORGANIC COMPOUNDS DETECTED ALL RESULTS EXPRESSED AS MICROGRAMS PER LITER (UG/L)=PPB

GROUND WATER SAMPLES COLLECTED NOVEMBER 14-15, 2005

NOTE:
BASEMAP INFORMATION FROM MAP ENTITLED "SURVEY OF PART OF LOT 27, TOWNSHIP 6, RANGE 8-VILLAGE OF GOWANDA, CATTARAUGUS COUNTY, NEW YORK" PREPARED BY KREHBIEL ASSOCIATES, DWG# D-2297, DATED 6-16-92

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REVISIONS

NO.	DATE	DESCRIPTION	REV.	CK'D

NOTE:
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0 40 80 120 FT
SCALE BAR

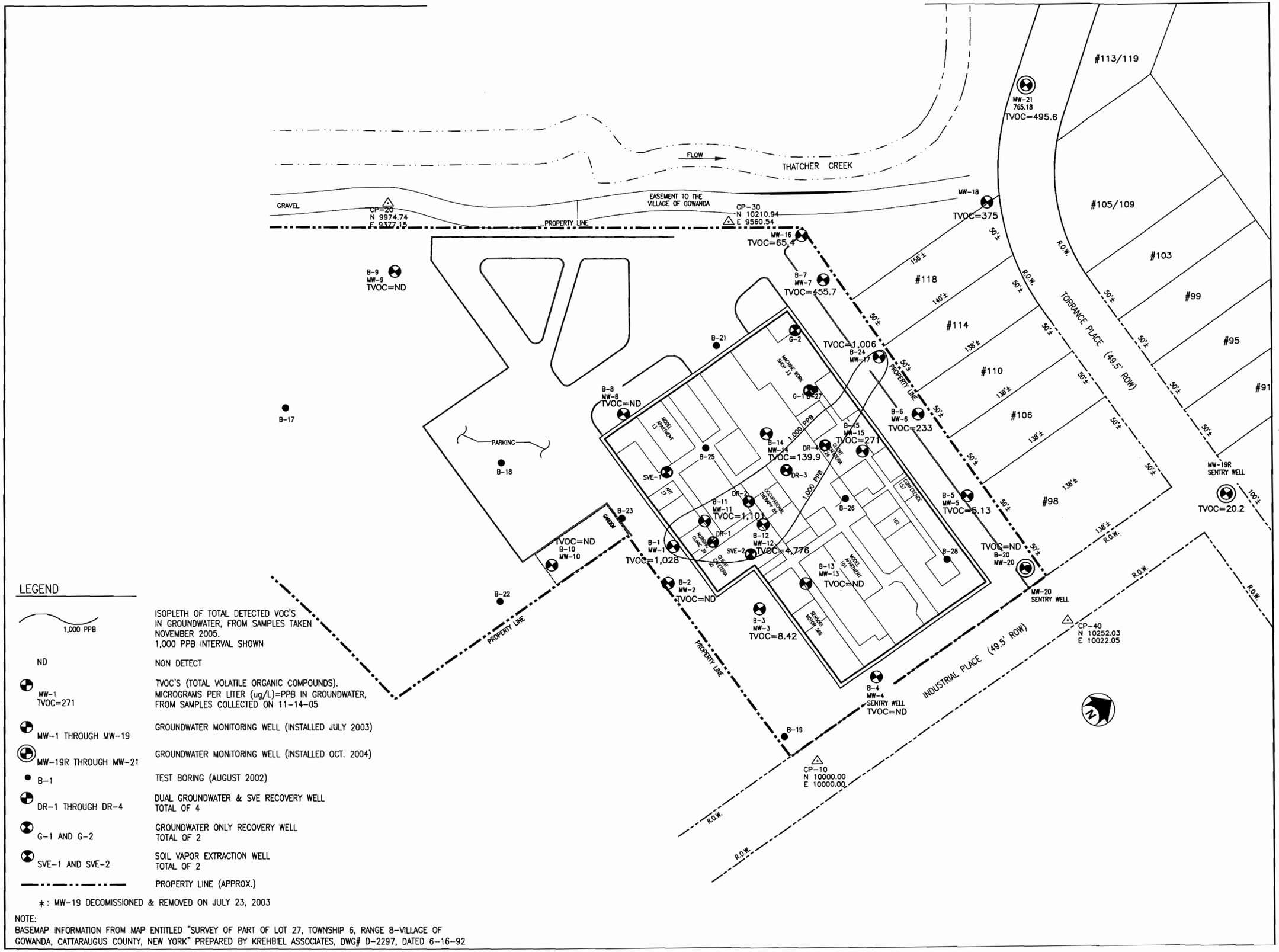
NOVEMBER 2005 GROUNDWATER ANALYTICAL RESULTS SUMMARY POSTING

Project Manager: G. FLISNIK
Designed by: E. JONES
Drawn by: T. HAHN
Checked by: G. FLISNIK
Date Issued: FEBRUARY 27, 2006
Scale: 1"=80'
Date

Project Number: 5596.28
File Name: I:\DASNY\5596.56 GOWANDA05-06\FIGS.DW

Drawing Number:

FIG-5



LEGEND

1,000 PPB	ISOPLETH OF TOTAL DETECTED VOC'S IN GROUNDWATER, FROM SAMPLES TAKEN NOVEMBER 2005. 1,000 PPB INTERVAL SHOWN
ND	NON DETECT
MW-1 TVOC=271	TVOC'S (TOTAL VOLATILE ORGANIC COMPOUNDS). MICROGRAMS PER LITER (ug/L)=PPB IN GROUNDWATER, FROM SAMPLES COLLECTED ON 11-14-05
MW-1 THROUGH MW-19	GROUNDWATER MONITORING WELL (INSTALLED JULY 2003)
MW-19R THROUGH MW-21	GROUNDWATER MONITORING WELL (INSTALLED OCT. 2004)
B-1	TEST BORING (AUGUST 2002)
DR-1 THROUGH DR-4	DUAL GROUNDWATER & SVE RECOVERY WELL TOTAL OF 4
G-1 AND G-2	GROUNDWATER ONLY RECOVERY WELL TOTAL OF 2
SVE-1 AND SVE-2	SOIL VAPOR EXTRACTION WELL TOTAL OF 2
	PROPERTY LINE (APPROX.)

*: MW-19 DECOMISSIONED & REMOVED ON JULY 23, 2003

NOTE:
BASEMAP INFORMATION FROM MAP ENTITLED "SURVEY OF PART OF LOT 27, TOWNSHIP 6, RANGE 8-VILLAGE OF GOWANDA, CATTARAUGUS COUNTY, NEW YORK" PREPARED BY KREHBIEL ASSOCIATES, DWG# D-2297, DATED 6-16-92

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0 40 80 120 FT
SCALE BAR

SHALLOW GROUNDWATER PLUME MAP, NOVEMBER 2005

Project Manager: G. FLISNIK
Designed by: E. JONES
Drawn by: T. MANN
Checked by: G. FLISNIK
Date Issued: FEBRUARY 27, 2006
Scale: 1"=80'
Date
Project Number: 3596.28
File Name: I:\DASNY\3596.56 GOWANDA05-06\FIG
Drawing Number:

FIG-6

FLOW

N/F VILLAGE OF GOWANDA

GRAVEL

EASEMENT TO THE VILLAGE OF GOWANDA

BLACKTOP DRIVE

PROPERTY LINE

TORRANCE PLACE

#118

#114

#110

#106

#98

SG-101
TCE=ND<3.4 ppbV
CIS=ND<4.6 ppbV
Trans=ND<4.6 ppbV
VC=ND<7.1 ppbV

SG-102
TCE=0.30 ppbV
CIS=ND<0.36 ppbV
Trans=ND<0.36 ppbV
VC=ND<0.56 ppbV

SG-103
TCE=ND<0.26 ppbV
CIS=ND<0.36 ppbV
Trans=ND<0.36 ppbV
VC=ND<0.56 ppbV

SG-104
TCE=12 ppbV
CIS=ND<0.36 ppbV
Trans=ND<0.36 ppbV
VC=ND<0.55 ppbV

SG-105
TCE=ND<0.26 ppbV
CIS=ND<0.36 ppbV
Trans=ND<0.36 ppbV
VC=ND<0.56 ppbV

SG-106
TCE=ND<0.74 ppbV
CIS=ND<1.0 ppbV
Trans=ND<1.0 ppbV
VC=ND<1.5 ppbV

SG-107
TCE=ND<1.3 ppbV
CIS=ND<1.8 ppbV
Trans=ND<1.8 ppbV
VC=ND<2.7 ppbV

SG-108
TCE=ND<0.26 ppbV
CIS=ND<0.36 ppbV
Trans=ND<0.36 ppbV
VC=ND<0.55 ppbV

SG-109
TCE=ND<0.23 ppbV
CIS=ND<0.31 ppbV
Trans=ND<0.31 ppbV
VC=ND<0.49 ppbV

SG-110
TCE=ND<0.27 ppbV
CIS=ND<0.36 ppbV
Trans=ND<0.36 ppbV
VC=ND<0.56 ppbV

B-1 MW-1
B-2 MW-2
B-3 MW-3
B-4 MW-4
B-5 MW-5
B-6 MW-6
B-7 MW-7
B-8 MW-8
B-9 MW-9
B-10 MW-10
B-11 MW-11
B-12 MW-12
B-13 MW-13
B-14 MW-14
B-15 MW-15
B-17
B-18
B-19
B-20
B-21
B-22
B-23
B-24
B-25
B-26
B-27
B-28

SG-101
SG-102
SG-103
SG-104
SG-105
SG-106
SG-107
SG-108
SG-109
SG-110

SHED
GARAGE
PARKING
GARDEN
MODEL APARTMENT 13
MACHINE WORK SHOP 33
CLIENT CAFETERIA 124
ART 57
NURSING CLINIC 39
OCCUPATIONAL THERAPY 85
CLIENT CAFETERIA 50
MODEL APARTMENT 101
SENSORI MOTOR 59B
CONFERENCE 157
162

N/F RIBUFFALO TURBINE AGRICULTURAL EQUIPMENT CO. INC.

INDUSTRIAL PKWY

LEGEND

WATER MONITORING WELL (AUGUST 2002) ⊕ MW-1

TEST BORING (AUGUST 2002) ● B-1

SOIL GAS SAMPLE LOCATION (10 POINTS) △ SG-101

SOIL GAS SAMPLES COLLECTED JUNE 12, 2003

TCE = TRICHLOROETHENE

CIS = 1,2-DICHLOROETHENE

Trans = TRANS-1,2-DICHLOROETHENE

ALL RESULTS EXPRESSED AS ppbV = PARTS PER BILLION PER VOLUME

ND = NOT DETECTED

NOTE:
BASEMAP INFORMATION FROM MAP ENTITLED " SURVEY OF PART OF LOT 27, TOWNSHIP 6, RANGE 8-VILLAGE OF GOWANDA, CATTARAUGUS COUNTY, NEW YORK" PREPARED BY KREHBIEL ASSOCIATES, DWG# D-2297, DATED 6-16-92

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REVISIONS

NO.	DATE	DESCRIPTION	REV.	CK'D

NOTE:
Unauthorized alteration or addition to this drawing is a violation of the New York State Education Law Article 145, Section 7209.

0 30 60 90 FT
SCALE BAR

NORTH PROPERTY LINE SOIL GAS TEST POINTS AND 2003 SAMPLING SUMMARY

Project Manager: G. FLISNIK
Designed by: E. JONES
Drawn by: T. BOLT
Checked by: G. FLISNIK
Date Issued: OCTOBER 28, 2003
Scale: 1"=60'
Date

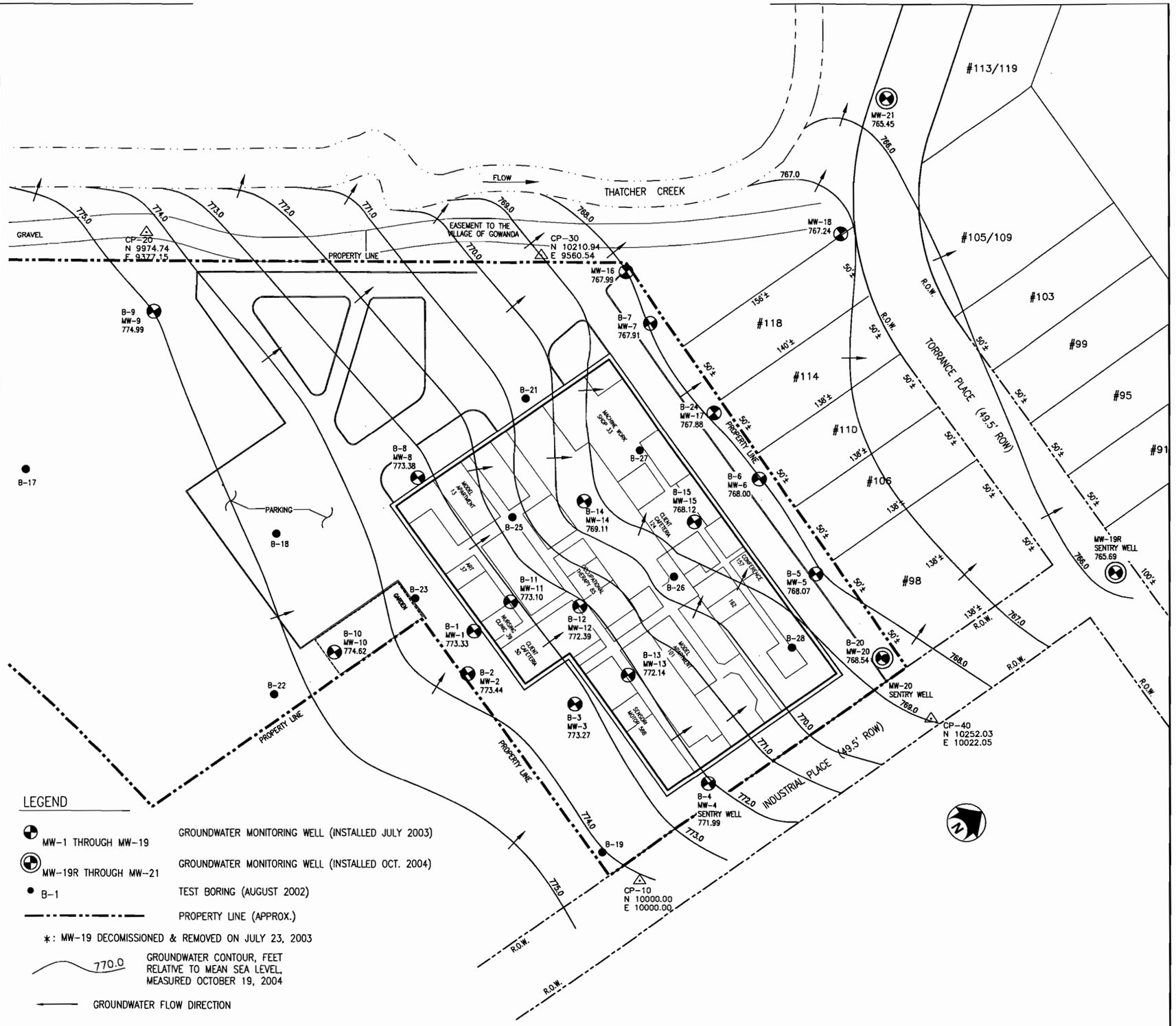
Project Number: 5596.12
File Name: I:\DASNY\5596.56 GOWANDA05-06\FIG7
Drawing Number:

FIG-7

MONITORING WELLS & BORING LOCATIONS

SAMPLE	NORTH	EAST	ELEVATION*	DESCRIPTION
MW-1	10005.75	9770.81	778.51	ASPH.
			778.52	RIM
			778.23	PVC
MW-2	9983.26	9795.25	778.36	ASPH.
			778.38	RIM
			778.08	PVC
MW-3	10036.20	9859.98	778.59	ASPH.
			778.61	RIM
			778.38	PVC
MW-4	10085.20	9967.62	778.66	GRD.
			778.77	RIM
			778.43	PVC
MW-5	10243.23	9880.34	778.80	ASPH.
			778.85	RIM
			778.61	PVC
MW-6	10249.86	9795.88	778.93	GRD
			781.35	CASE
			781.10	PVC
MW-7 B-17	10249.65	9650.24	778.77	GRD
			781.17	CASE
			780.94	PVC
MW-8	10038.09	9649.08	778.49	GRD
			781.75	CASE
			781.33	PVC
MW-9	9945.36	9430.13	780.56	GRD
			782.84	CASE
			782.61	PVC
MW-10	9909.53	9724.56	777.46	GRD
			780.10	CASE
			780.02	PVC
MW-11	10041.23	9767.54	778.82	FLOOR
			778.81	RIM
			778.58	PVC
MW-12	10082.02	9799.74	778.84	FLOOR
			778.85	RIM
			778.50	PVC
MW-13	10082.09	9864.35	778.88	FLOOR
			778.87	RIM
			778.39	PVC
MW-14	10130.64	9734.67	778.80	FLOOR
			778.82	RIM
			778.43	PVC
MW-15	10190.80	9795.30	778.78	FLOOR
			778.76	RIM
			778.38	PVC
MW-16	10256.48	9607.09	778.17	GRD
			781.05	CASE
			780.43	PVC
MW-17	10250.56	9734.35	778.67	GRD
			781.10	CASE
			779.85	PVC
MW-18	10406.65	9675.18	776.73	GRD
			776.65	RIM
			776.39	PVC
MW-19	10436.35	9912.63	775.04	GRD
			775.10	RIM
			774.82	PVC
MW-19R	10432.32	10009.16	774.56	ASPH
			774.55	RIM
			774.20	PVC
MW-20	10248.05	9962.73	778.47	ASPH
			778.45	RIM
			778.04	PVC
MW-21	10493.88	9609.90	775.47	ASPH
			775.45	RIM
			774.76	PVC
B-16	9736.69	9324.99	782.23	GRD.
B-17	9795.99	9475.17	780.40	GRD.
B-18	9925.09	9623.75	777.55	ASPH.
B-19	9988.66	9965.74	778.30	ASPH.
B-20	10249.88	9964.03	778.36	ASPH.
B-21	10139.46	9644.31	774.51	GRAV.
B-22	9853.67	9725.31	776.69	GRD.
B-23	9983.81	9724.83	778.50	ASPH.
B-24	10249.26	9732.76	778.88	GRD.
B-25	10079.30	9714.32	778.79	FLOOR
B-26	10154.35	9821.64	778.84	FLOOR
B-27	10187.79	9726.14	778.80	FLOOR
B-28	10196.32	9917.18	778.83	FLOOR

*ELEVATIONS ARE BASED ON MEAN SEA LEVEL



LEGEND

- MW-1 THROUGH MW-19 — GROUNDWATER MONITORING WELL (INSTALLED JULY 2003)
- MW-19R THROUGH MW-21 — GROUNDWATER MONITORING WELL (INSTALLED OCT. 2004)
- B-1 — TEST BORING (AUGUST 2002)
- PROPERTY LINE (APPROX.)
- *: MW-19 DECOMISSIONED & REMOVED ON JULY 23, 2003
- 770.0 — GROUNDWATER CONTOUR, FEET RELATIVE TO MEAN SEA LEVEL, MEASURED OCTOBER 19, 2004
- GROUNDWATER FLOW DIRECTION

NOTE:
BASEMAP INFORMATION FROM MAP ENTITLED "SURVEY OF PART OF LOT 27, TOWNSHIP 6, RANGE 8-VILLAGE OF GOWANDA, CATTARAUGUS COUNTY, NEW YORK" PREPARED BY KREHBIEL ASSOCIATES, DWG# D-2297, DATED 6-16-92

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BERGMANN associates
Engineers / Architects / Surveyors
200 First Federal Plaza
28 East Main Street, Rochester, New York 14614
585.232.5135 / 585.232.4652 fax

REVISIONS

NO.	DATE	DESCRIPTION	REV.	CK'D

NOTE:
Unauthorized alteration or addition to this drawing is a violation of the New York State Education Law Article 145, Section 7209.

0 40 80 120 FT
SCALE BAR

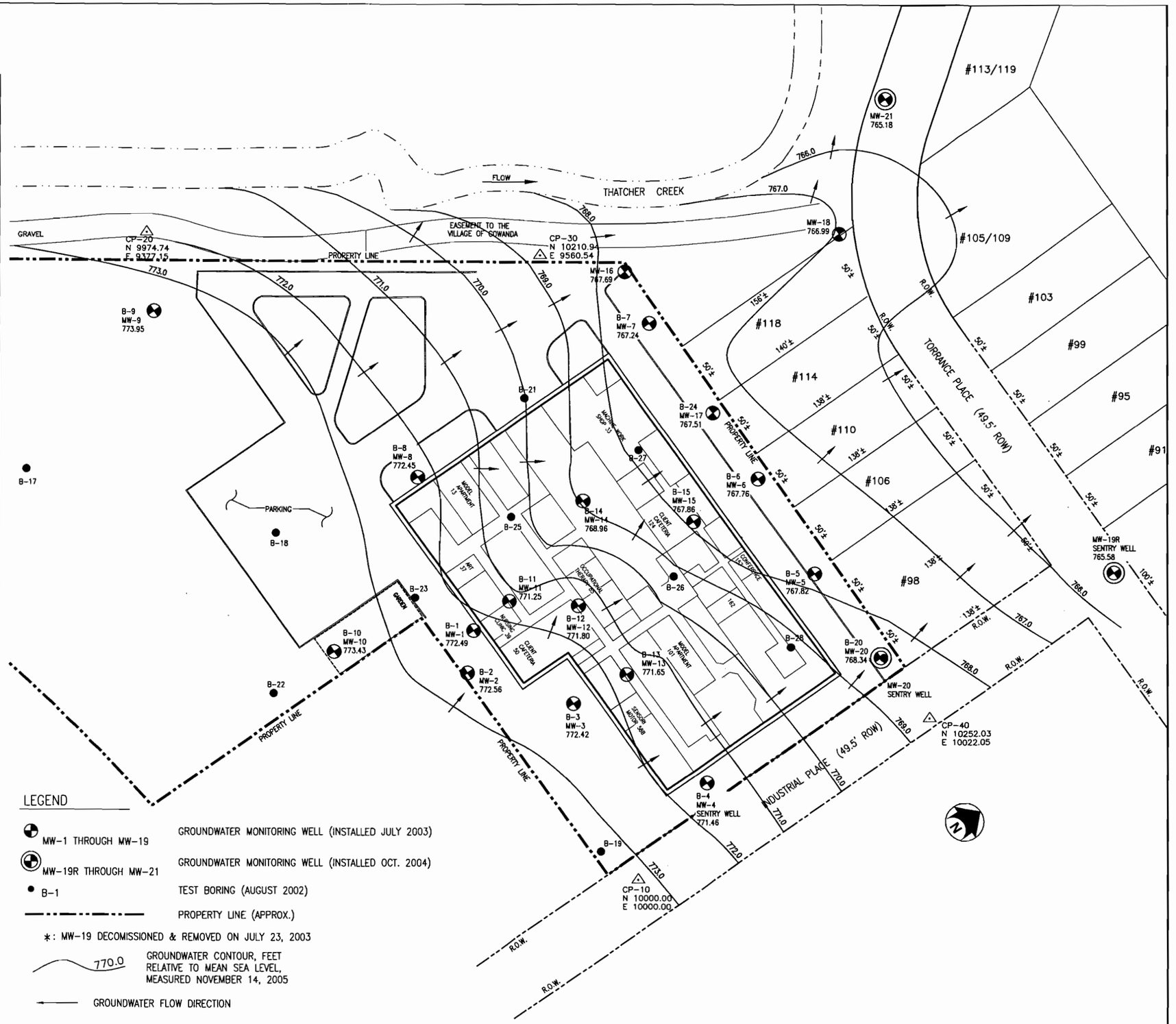
WATER TABLE SURFACE & GROUNDWATER FLOW MAP, OCTOBER 2004

Project Manager:	G. FLISNIK
Designed by:	E. JONES
Drawn by:	T. HAHN
Checked by:	G. FLISNIK
Date Issued:	OCTOBER 8, 2005
Scale:	1"=80'
Date	
Project Number:	5596.28
File Name:	I:\DASNY\5596.56 GOGANDA05-06\FIG8.DWG
Drawing Number:	FIG-8

MONITORING WELLS & BORING LOCATIONS

SAMPLE	NORTH	EAST	ELEVATION*	DESCRIPTION
MW-1	10005.75	9770.81	778.51 778.52 778.23	ASPH. RIM PVC
MW-2	9983.26	9795.25	778.36 778.38 778.08	ASPH. RIM PVC
MW-3	10036.20	9859.98	778.59 778.61 778.38	ASPH. RIM PVC
MW-4	10085.20	9967.62	778.66 778.77 778.43	GRD. RIM PVC
MW-5	10243.23	9880.34	778.80 778.85 778.61	ASPH. RIM PVC
MW-6	10249.86	9795.88	778.93 781.35 781.10	GRD CASE PVC
MW-7 B-17	10249.65	9650.24	778.77 781.17 780.94	GRD CASE PVC
MW-8	10038.09	9649.08	778.49 781.75 781.33	GRD CASE PVC
MW-9	9945.36	9430.13	780.56 782.84 782.61	GRD CASE PVC
MW-10	9909.53	9724.56	777.46 780.10 780.02	GRD CASE PVC
MW-11	10041.23	9767.54	778.82 778.81 778.58	FLOOR RIM PVC
MW-12	10082.02	9799.74	778.84 778.85 778.50	FLOOR RIM PVC
MW-13	10082.09	9864.35	778.88 778.87 778.39	FLOOR RIM PVC
MW-14	10130.64	9734.67	778.80 778.82 778.43	FLOOR RIM PVC
MW-15	10190.80	9795.30	778.78 778.76 778.38	FLOOR RIM PVC
MW-16	10256.48	9607.09	778.17 781.05 780.43	GRD CASE PVC
MW-17	10250.56	9734.35	778.67 781.10 779.85	GRD CASE PVC
MW-18	10406.65	9675.18	776.73 776.65 776.39	GRD RIM PVC
MW-19	10436.35	9912.63	775.04 775.10 774.82	GRD RIM PVC
MW-19R	10432.32	10009.16	774.56 774.55 774.20	ASPH RIM PVC
MW-20	10248.05	9962.73	778.47 778.45 778.04	ASPH RIM PVC
MW-21	10493.88	9609.90	775.47 775.45 774.76	ASPH RIM PVC
B-16	9736.69	9324.99	782.23	GRD.
B-17	9795.99	9475.17	780.40	GRD.
B-18	9925.09	9623.75	777.55	ASPH.
B-19	9988.66	9965.74	778.30	ASPH.
B-20	10249.88	9964.03	778.36	ASPH.
B-21	10139.46	9644.31	774.51	GRAV.
B-22	9853.67	9725.31	776.69	GRD.
B-23	9983.81	9724.83	778.50	ASPH.
B-24	10249.26	9732.76	778.88	GRD.
B-25	10079.30	9714.32	778.79	FLOOR
B-26	10154.35	9821.64	778.84	FLOOR
B-27	10187.79	9726.14	778.80	FLOOR
B-28	10196.32	9917.18	778.83	FLOOR

*ELEVATIONS ARE BASED ON MEAN SEA LEVEL



LEGEND

- MW-1 THROUGH MW-19 — GROUNDWATER MONITORING WELL (INSTALLED JULY 2003)
- MW-19R THROUGH MW-21 — GROUNDWATER MONITORING WELL (INSTALLED OCT. 2004)
- B-1 — TEST BORING (AUGUST 2002)
- PROPERTY LINE (APPROX.)
- *: MW-19 DECOMISSIONED & REMOVED ON JULY 23, 2003
- 770.0 — GROUNDWATER CONTOUR, FEET RELATIVE TO MEAN SEA LEVEL, MEASURED NOVEMBER 14, 2005
- GROUNDWATER FLOW DIRECTION

NOTE:
BASEMAP INFORMATION FROM MAP ENTITLED "SURVEY OF PART OF LOT 27, TOWNSHIP 6, RANGE 8-VILLAGE OF GOWANDA, CATTARAUGUS COUNTY, NEW YORK" PREPARED BY KREHBIEL ASSOCIATES, DWG# D-2297, DATED 6-16-92

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585.232.5135 / 585.232.4652 fax

REVISIONS

NO.	DATE	DESCRIPTION	REV.	CK'D

0 40 80 120 FT
SCALE BAR

WATER TABLE SURFACE & GROUNDWATER FLOW MAP, NOVEMBER 2005

Project Manager:	G. FLISNIK
Designed by:	E. JONES
Drawn by:	T. HAHN
Checked by:	G. FLISNIK
Date Issued:	FEBRUARY 27, 2006
Scale:	1"=80'
Date	
Project Number:	5596.28
File Name:	I:\DASNY\5596.56 GOWANDA05-06\FIG9.D
Drawing Number:	FIG-9

LEGEND

MW-1 THROUGH MW-19	GROUNDWATER MONITORING WELL (INSTALLED JULY 2003)
MW-19R THROUGH MW-21	GROUNDWATER MONITORING WELL (INSTALLED OCT. 2004)
B-1	TEST BORING (AUGUST 2002)
DR-1 THROUGH DR-4	DUAL GROUNDWATER & SVE RECOVERY WELL TOTAL OF 4
G-1 AND G-2	GROUNDWATER ONLY RECOVERY WELL TOTAL OF 2
SVE-1 AND SVE-2	SOIL VAPOR EXTRACTION WELL TOTAL OF 2
SP1 THROUGH SP8	SUB-SLAB, SVE VACUUM & SAMPLING POINTS TOTAL OF 8 (VACUUM READINGS RECORDED 11/16/05)
	INDOOR AIR QUALITY SAMPLING POINTS, SEPTEMBER 2000 TOTAL OF 11
℄	PROPERTY LINE (APPROX.)
ROW	RIGHT OF WAY (APPROX.)

DR-1 GTS RECOVERY WELL RADIUS OF INFLUENCE

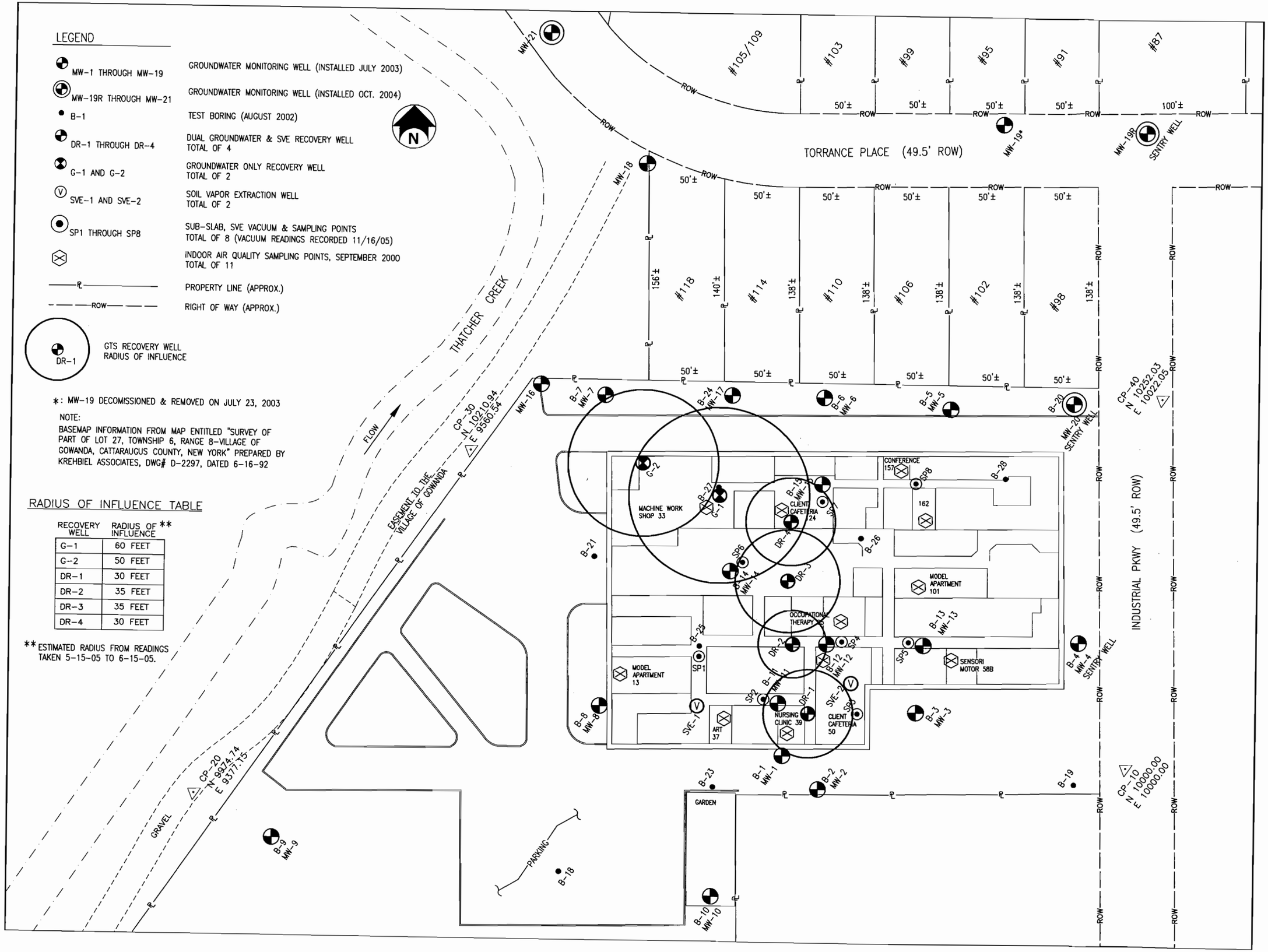
*: MW-19 DECOMISSIONED & REMOVED ON JULY 23, 2003

NOTE:
BASEMAP INFORMATION FROM MAP ENTITLED "SURVEY OF PART OF LOT 27, TOWNSHIP 6, RANGE 8-VILLAGE OF GOWANDA, CATTARAUGUS COUNTY, NEW YORK" PREPARED BY KREHBIEL ASSOCIATES, DWG# D-2297, DATED 6-16-92

RADIUS OF INFLUENCE TABLE

RECOVERY WELL	RADIUS OF ** INFLUENCE
G-1	60 FEET
G-2	50 FEET
DR-1	30 FEET
DR-2	35 FEET
DR-3	35 FEET
DR-4	30 FEET

** ESTIMATED RADIUS FROM READINGS TAKEN 5-15-05 TO 6-15-05.



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585.232.5135 / 585.232.4652 fax

REVISIONS

NO.	DATE	DESCRIPTION	REV.	CK'D

NOTE:
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0 30 60 90 FT
SCALE BAR

GROUND WATER TREATMENT SYSTEM RECOVERY WELL RADIUS OF INFinfluence

Project Manager: G. FLISNIK
Designed by: E. JONES
Drawn by: T. HAHN
Checked by: G. FLISNIK
Date Issued: FEBRUARY 27, 2006
Scale: 1"=60'
Date
Project Number: 5596.28
File Name: I:\DASNY\5596.56 GOWANDA\05-06\FIG10.DW
Drawing Number:

FIG-10

LEGEND

MW-1 THROUGH MW-19	GROUNDWATER MONITORING WELL (INSTALLED JULY 2003)
MW-19R THROUGH MW-21	GROUNDWATER MONITORING WELL (INSTALLED OCT. 2004)
B-1	TEST BORING (AUGUST 2002)
DR-1 THROUGH DR-4	DUAL GROUNDWATER & SVE RECOVERY WELL TOTAL OF 4
G-1 AND G-2	GROUNDWATER ONLY RECOVERY WELL TOTAL OF 2
SVE-1 AND SVE-2	SOIL VAPOR EXTRACTION WELL TOTAL OF 2
SP1 THROUGH SP8 0.01" OF H_2O COLUMN	SUB-SLAB, SVE VACUUM & SAMPLING POINTS TOTAL OF 8 (VACUUM READINGS RECORDED 11/16/05)
	INDOOR AIR QUALITY SAMPLING POINTS, SEPTEMBER 2000 TOTAL OF 11
——PL——	PROPERTY LINE (APPROX.)
— — —ROW— — —	RIGHT OF WAY (APPROX.)

SVE-1 SVE RECOVERY WELL RADIUS OF INFLUENCE

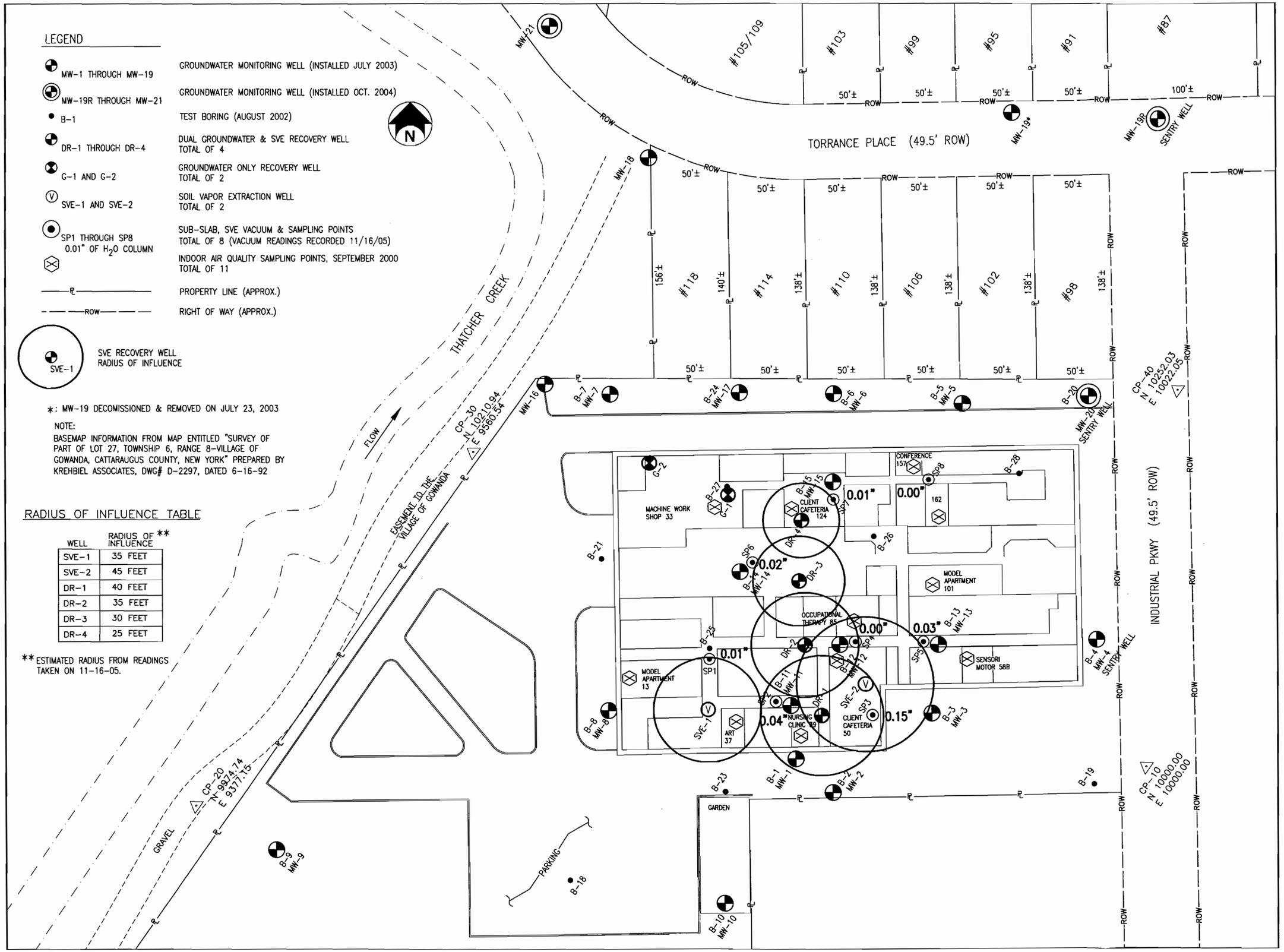
*: MW-19 DECOMISSIONED & REMOVED ON JULY 23, 2003

NOTE:
BASEMAP INFORMATION FROM MAP ENTITLED "SURVEY OF PART OF LOT 27, TOWNSHIP 6, RANGE 8-VILLAGE OF GOWANDA, CATTARAUGUS COUNTY, NEW YORK" PREPARED BY KREHBIEL ASSOCIATES, DWG# D-2297, DATED 6-16-92

RADIUS OF INFLUENCE TABLE

WELL	RADIUS OF INFLUENCE **
SVE-1	35 FEET
SVE-2	45 FEET
DR-1	40 FEET
DR-2	35 FEET
DR-3	30 FEET
DR-4	25 FEET

** ESTIMATED RADIUS FROM READINGS TAKEN ON 11-16-05.



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28 East Main Street, Rochester, New York 14614
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REVISIONS

NO.	DATE	DESCRIPTION	REV.	CK'D

0 30 60 90 FT
SCALE BAR

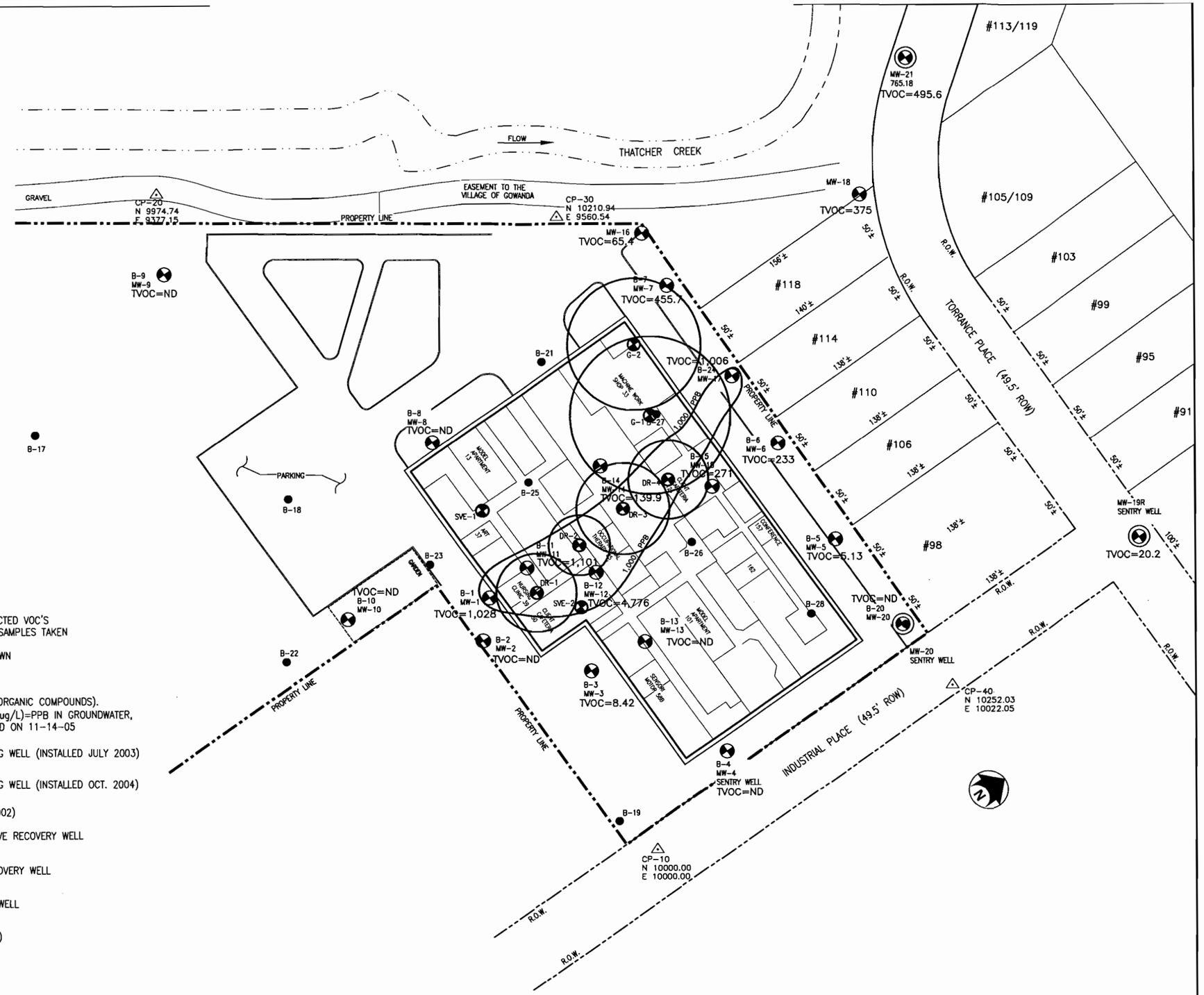
SOIL VAPOR EXTRACTION SYSTEM RECOVERY WELL RADIUS OF INFLUENCE

Project Manager: G. FLISNIK
Designed by: E. JONES
Drawn by: T. HAHN
Checked by: G. FLISNIK
Date Issued: FEBRUARY 27, 2006
Scale: 1"=60'
Date

Project Number: 5596.28
File Name: I:\DASNY\5596.56 GOWANDA05-06\FIG11.

Drawing Number:

FIG-11



LEGEND

1,000 PPB	ISOPLETH OF TOTAL DETECTED VOC'S IN GROUNDWATER, FROM SAMPLES TAKEN NOVEMBER 2005. 1,000 PPB INTERVAL SHOWN
ND	NON DETECT
MW-1 TVOC=271	TVOC'S (TOTAL VOLATILE ORGANIC COMPOUNDS). MICROGRAMS PER LITER (ug/L)=PPB IN GROUNDWATER, FROM SAMPLES COLLECTED ON 11-14-05
MW-1 THROUGH MW-19	GROUNDWATER MONITORING WELL (INSTALLED JULY 2003)
MW-19R THROUGH MW-21	GROUNDWATER MONITORING WELL (INSTALLED OCT. 2004)
B-1	TEST BORING (AUGUST 2002)
DR-1 THROUGH DR-4	DUAL GROUNDWATER & SVE RECOVERY WELL TOTAL OF 4
G-1 AND G-2	GROUNDWATER ONLY RECOVERY WELL TOTAL OF 2
SVE-1 AND SVE-2	SOIL VAPOR EXTRACTION WELL TOTAL OF 2
	PROPERTY LINE (APPROX.)

DR-1 — GTS RECOVERY WELL RADIUS OF INFLUENCE

*: MW-19 DECOMISSIONED & REMOVED ON JULY 23, 2003

NOTE:
BASEMAP INFORMATION FROM MAP ENTITLED "SURVEY OF PART OF LOT 27, TOWNSHIP 6, RANGE 8-VILLAGE OF GOWANDA, CATTARAUGUS COUNTY, NEW YORK" PREPARED BY KREHBIEL ASSOCIATES, DWG# D-2297, DATED 6-16-92

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585.232.5135 / 585.232.4652 fax

REVISIONS

NO.	DATE	DESCRIPTION	REV.	CK'D

NOTE:
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0 40 80 120 FT
SCALE BAR

REMEDIAL SYSTEM EFFICIENCY & EXTENT OF IMPACTED GROUNDWATER MAP, NOVEMBER 2005

Project Manager: G. FLISNIK
Designed by: E. JONES
Drawn by: T. HAHN
Checked by: G. FLISNIK
Date Issued: FEBRUARY 27, 2006
Scale: 1"=80'
Date

Project Number: 5596.28
File Name: I:\DASNY\5596.56 GOWANDA05-06\FIG12.D

Drawing Number:

FIG-12

of

TOXIKON CORPORATION
15 WIGGINS AVENUE
BEDFORD, MA 01730
TEL: (781) 275-3330

November 23, 2005

Bergmann Associates
200 First Federal Plaza
28 East Main Street
Rochester, NY 146141909
TEL: (585) 232-5135
FAX (585) 232-4652

RE Gowanda - Quarterly Order No.: 0511022

Toxikon Corporation received 24 samples on 11/16/2005 for the analyses presented in the following report.

Unless noted in the report, there were no problems with the analyses and all data for associated QC met EPA or laboratory specifications.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Laxman S. Desai, D. Sc.
Director

Certifications: MA: MA 064, CT: PH 0563, MD: 185, RI: LAO00055
NELAC - NY: 10778, NJ: MA 538, NH: 2040, PA 68-461

Toxikon Corporation

Date: *23-Nov-05*

CLIENT: Bergmann Associates
Project: Gowanda - Quarterly
Lab Order: 0511022

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
0511022-01A	MW-10		11/14/2005 9:15:00 AM	11/16/2005
0511022-02A	MW-9		11/14/2005 10:10:00 AM	11/16/2005
0511022-03A	MW-8		11/14/2005 11:20:00 AM	11/16/2005
0511022-04A	MW-4		11/14/2005 12:15:00 PM	11/16/2005
0511022-05A	MW-2		11/14/2005 1:20:00 PM	11/16/2005
0511022-06A	MW-13		11/14/2005 2:15:00 PM	11/16/2005
0511022-07A	MW-3		11/14/2005 3:10:00 PM	11/16/2005
0511022-08A	MW-5		11/14/2005 3:40:00 PM	11/16/2005
0511022-09A	MW-19		11/14/2005 4:35:00 PM	11/16/2005
0511022-10A	MW-20		11/14/2005 5:30:00 PM	11/16/2005
0511022-11A	MW-14		11/14/2005 6:30:00 PM	11/16/2005
0511022-12A	MW-16		11/15/2005 8:25:00 AM	11/16/2005
0511022-13A	MW-6		11/15/2005 9:20:00 AM	11/16/2005
0511022-14A	MW-15		11/15/2005 10:15:00 AM	11/16/2005
0511022-15A	MW-21		11/15/2005 10:40:00 AM	11/16/2005
0511022-16A	MW-7		11/15/2005 12:40:00 PM	11/16/2005
0511022-17A	MW-18		11/15/2005 12:00:00 PM	11/16/2005
0511022-18A	MW-17		11/15/2005 1:55:00 PM	11/16/2005
0511022-19A	MW-17-D		11/15/2005 1:55:00 PM	11/16/2005
0511022-20A	MW-1		11/15/2005 2:50:00 PM	11/16/2005
0511022-21A	MW-11		11/15/2005 3:40:00 PM	11/16/2005
0511022-22A	MW-12		11/15/2005 4:25:00 PM	11/16/2005
0511022-23A	MW-12 FB		11/15/2005 4:35:00 PM	11/16/2005
0511022-24A	T.B.		11/15/2005 4:30:00 PM	11/16/2005

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-1
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/15/2005 2:50:00 PM
Lab ID:	0511022-20A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/18/2005 1:57:00 PM
cis-1,2-Dichloroethene	392	50.0		µg/L	10	11/18/2005 7:19:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/18/2005 1:57:00 PM
Trichloroethene	636	50.0		µg/L	10	11/18/2005 7:19:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/18/2005 1:57:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-2
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/14/2005 1:20:00 PM
Lab ID:	0511022-05A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **EPC**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/17/2005 5:18:00 PM
cis-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 5:18:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 5:18:00 PM
Trichloroethene	ND	5.00		µg/L	1	11/17/2005 5:18:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/17/2005 5:18:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-3
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/14/2005 3:10:00 PM
Lab ID:	0511022-07A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **EPC**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/17/2005 6:26:00 PM
cis-1,2-Dichloroethene	8.42	5.00		µg/L	1	11/17/2005 6:26:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 6:26:00 PM
Trichloroethene	ND	5.00		µg/L	1	11/17/2005 6:26:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/17/2005 6:26:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-4
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/14/2005 12:15:00 PM
Lab ID:	0511022-04A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **EPC**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/17/2005 3:36:00 PM
cis-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 3:36:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 3:36:00 PM
Trichloroethene	ND	5.00		µg/L	1	11/17/2005 3:36:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/17/2005 3:36:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-5
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/14/2005 3:40:00 PM
Lab ID:	0511022-08A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **EPC**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/17/2005 6:59:00 PM
cis-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 6:59:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 6:59:00 PM
Trichloroethene	5.13	5.00		µg/L	1	11/17/2005 6:59:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/17/2005 6:59:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-6
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/15/2005 9:20:00 AM
Lab ID:	0511022-13A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,2-Trichloroethane	ND	10.0		µg/L	2	11/18/2005 7:51:00 PM
cis-1,2-Dichloroethene	233	10.0		µg/L	2	11/18/2005 7:51:00 PM
trans-1,2-Dichloroethene	ND	10.0		µg/L	2	11/18/2005 7:51:00 PM
Trichloroethene	ND	10.0		µg/L	2	11/18/2005 7:51:00 PM
Vinyl chloride	ND	10.0		µg/L	2	11/18/2005 7:51:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-7
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/15/2005 12:40:00 PM
Lab ID:	0511022-16A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/18/2005 11:51:00 AM
cis-1,2-Dichloroethene	444	25.0		µg/L	5	11/18/2005 5:13:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/18/2005 11:51:00 AM
Trichloroethene	11.7	5.00		µg/L	1	11/18/2005 11:51:00 AM
Vinyl chloride	ND	5.00		µg/L	1	11/18/2005 11:51:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-8
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/14/2005 11:20:00 AM
Lab ID:	0511022-03A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **EPC**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/17/2005 3:02:00 PM
cis-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 3:02:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 3:02:00 PM
Trichloroethene	ND	5.00		µg/L	1	11/17/2005 3:02:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/17/2005 3:02:00 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-9
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/14/2005 10:10:00 AM
Lab ID:	0511022-02A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **EPC**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/17/2005 2:29:00 PM
cis-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 2:29:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 2:29:00 PM
Trichloroethene	ND	5.00		µg/L	1	11/17/2005 2:29:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/17/2005 2:29:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-10
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/14/2005 9:15:00 AM
Lab ID:	0511022-01A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/21/2005 2:16:00 PM
cis-1,2-Dichloroethene	ND	5.00		µg/L	1	11/21/2005 2:16:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/21/2005 2:16:00 PM
Trichloroethene	ND	5.00		µg/L	1	11/21/2005 2:16:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/21/2005 2:16:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-11
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/15/2005 3:40:00 PM
Lab ID:	0511022-21A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,2-Trichloroethane	ND	25.0		µg/L	5	11/18/2005 2:34:00 PM
cis-1,2-Dichloroethene	840	25.0		µg/L	5	11/18/2005 2:34:00 PM
trans-1,2-Dichloroethene	ND	25.0		µg/L	5	11/18/2005 2:34:00 PM
Trichloroethene	261	25.0		µg/L	5	11/18/2005 2:34:00 PM
Vinyl chloride	ND	25.0		µg/L	5	11/18/2005 2:34:00 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-12
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/15/2005 4:25:00 PM
Lab ID:	0511022-22A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,2-Trichloroethane	ND	25.0		µg/L	5	11/18/2005 3:06:00 PM
cis-1,2-Dichloroethene	446	25.0		µg/L	5	11/18/2005 3:06:00 PM
trans-1,2-Dichloroethene	ND	25.0		µg/L	5	11/18/2005 3:06:00 PM
Trichloroethene	4330	250		µg/L	50	11/21/2005 2:47:00 PM
Vinyl chloride	ND	25.0		µg/L	5	11/18/2005 3:06:00 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-13
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/14/2005 2:15:00 PM
Lab ID:	0511022-06A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **EPC**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/17/2005 5:52:00 PM
cis-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 5:52:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 5:52:00 PM
Trichloroethene	ND	5.00		µg/L	1	11/17/2005 5:52:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/17/2005 5:52:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-14
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/14/2005 6:30:00 PM
Lab ID:	0511022-11A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **EPC**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/17/2005 8:40:00 PM
cis-1,2-Dichloroethene	91.4	5.00		µg/L	1	11/17/2005 8:40:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 8:40:00 PM
Trichloroethene	48.5	5.00		µg/L	1	11/17/2005 8:40:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/17/2005 8:40:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-15
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/15/2005 10:15:00 AM
Lab ID:	0511022-14A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/21/2005 1:44:00 PM
cis-1,2-Dichloroethene	163	5.00		µg/L	1	11/21/2005 1:44:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/21/2005 1:44:00 PM
Trichloroethene	108	5.00		µg/L	1	11/21/2005 1:44:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/21/2005 1:44:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-16
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/15/2005 8:25:00 AM
Lab ID:	0511022-12A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/21/2005 1:12:00 PM
cis-1,2-Dichloroethene	65.4	5.00		µg/L	1	11/21/2005 1:12:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/21/2005 1:12:00 PM
Trichloroethene	ND	5.00		µg/L	1	11/21/2005 1:12:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/21/2005 1:12:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-17
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/15/2005 1:55:00 PM
Lab ID:	0511022-18A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/18/2005 12:54:00 PM
cis-1,2-Dichloroethene	739	25.0		µg/L	5	11/18/2005 6:16:00 PM
trans-1,2-Dichloroethene	7.02	5.00		µg/L	1	11/18/2005 12:54:00 PM
Trichloroethene	260	25.0		µg/L	5	11/18/2005 6:16:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/18/2005 12:54:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-17-D
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/15/2005 1:55:00 PM
Lab ID:	0511022-19A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/18/2005 1:26:00 PM
cis-1,2-Dichloroethene	752	25.0		µg/L	5	11/18/2005 6:48:00 PM
trans-1,2-Dichloroethene	7.49	5.00		µg/L	1	11/18/2005 1:26:00 PM
Trichloroethene	272	25.0		µg/L	5	11/18/2005 6:48:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/18/2005 1:26:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-18
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/15/2005 12:00:00 PM
Lab ID:	0511022-17A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/18/2005 12:22:00 PM
cis-1,2-Dichloroethene	375	25.0		µg/L	5	11/18/2005 5:45:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/18/2005 12:22:00 PM
Trichloroethene	ND	5.00		µg/L	1	11/18/2005 12:22:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/18/2005 12:22:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-19
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/14/2005 4:35:00 PM
Lab ID:	0511022-09A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/21/2005 12:41:00 PM
cis-1,2-Dichloroethene	13.6	5.00		µg/L	1	11/21/2005 12:41:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/21/2005 12:41:00 PM
Trichloroethene	6.58	5.00		µg/L	1	11/21/2005 12:41:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/21/2005 12:41:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-20
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/14/2005 5:30:00 PM
Lab ID:	0511022-10A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **EPC**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/17/2005 8:07:00 PM
cis-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 8:07:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 8:07:00 PM
Trichloroethene	ND	5.00		µg/L	1	11/17/2005 8:07:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/17/2005 8:07:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-21
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/15/2005 10:40:00 AM
Lab ID:	0511022-15A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,2-Trichloroethane	ND	25.0		µg/L	5	11/18/2005 8:23:00 PM
cis-1,2-Dichloroethene	461	25.0		µg/L	5	11/18/2005 8:23:00 PM
trans-1,2-Dichloroethene	ND	25.0		µg/L	5	11/18/2005 8:23:00 PM
Trichloroethene	34.6	25.0		µg/L	5	11/18/2005 8:23:00 PM
Vinyl chloride	ND	25.0		µg/L	5	11/18/2005 8:23:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	MW-12 FB
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/15/2005 4:35:00 PM
Lab ID:	0511022-23A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **EPC**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/17/2005 1:21:00 PM
cis-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 1:21:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 1:21:00 PM
Trichloroethene	ND	5.00		µg/L	1	11/17/2005 1:21:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/17/2005 1:21:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *23-Nov-05*

CLIENT:	Bergmann Associates	**Client Sample ID:**	T.B.
Lab Order:	0511022	**Tag Number:**	
Project:	Gowanda - Quarterly	**Collection Date:**	11/15/2005 4:30:00 PM
Lab ID:	0511022-24A	**Matrix:**	WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **EPC**
1,1,2-Trichloroethane	ND	5.00		µg/L	1	11/17/2005 1:55:00 PM
cis-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 1:55:00 PM
trans-1,2-Dichloroethene	ND	5.00		µg/L	1	11/17/2005 1:55:00 PM
Trichloroethene	ND	5.00		µg/L	1	11/17/2005 1:55:00 PM
Vinyl chloride	ND	5.00		µg/L	1	11/17/2005 1:55:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

SUMMARY OF HISTORICAL WATER TABLE ELEVATIONS, MONITORING WELLS
GOWANDA DAY HABILITATION CENTER
VCA V-00463-9

Gowanda Day Habilitation Center
IRM Completion Report
Changes in Water Table Elevations, Monitoring Wells

MONITOR WELL	YEAR	DATE MEASURED	TOP OF CASING ELEVATION FEET, AMSL	DEPTH TO GROUNDWATER, FEET, TOC	TOTAL WELL DEPTH, FEET, TOC	FREE PRODUCT THICKNESS, FEET	GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, FEET, AMSL
	2004	19-Oct-04	778.23	4.90	16.02		773.33
MW-1	2005	28-Feb-05	778.23	5.38	16.02	---	772.85
		10-May-05	778.23	5.71	16.02	---	772.52
		15-May-05	778.23	5.84	16.02	---	772.39
		15-Jun-05	778.23	6.63	16.02	---	771.60
		23-Jun-05	778.23	6.91	16.02	---	771.32
		15-Jul-05	778.23	7.27	16.02	---	770.96
		19-Aug-05	778.23	7.51	16.02	---	770.72
		16-Sep-05	778.23	5.36	16.02	---	772.87
		25-Oct-05	778.23	5.16	16.02	---	773.07
		14-Nov-05	778.23	5.74	16.02	---	772.49
MW-2	2005	28-Feb-05	778.08	5.16	17.15	---	772.92
		10-May-05	778.08	5.46	17.15	---	772.62
		15-May-05	778.08	5.59	17.15	---	772.49
		15-Jun-05	778.08	6.50	17.15	---	771.58
		23-Jun-05	778.08	6.57	17.15	---	771.51
		15-Jul-05	778.08	6.86	17.15	---	771.22
		19-Aug-05	778.08	7.31	17.15	---	770.77
		16-Sep-05	778.08	4.96	17.15	---	773.12
		25-Oct-05	778.08	5.75	17.15	---	772.33
		14-Nov-05	778.08	5.52	17.15	---	772.56
MW-3	2005	28-Feb-05	778.38	5.55	16.30	---	772.83
		10-May-05	778.38	6.23	16.30	---	772.15
		15-May-05	778.38	5.99	16.30	---	772.39
		15-Jun-05	778.38	6.67	16.30	---	771.71
		23-Jun-05	778.38	7.03	16.30	---	771.35
		15-Jul-05	778.38	7.57	16.30	---	770.81
		19-Aug-05	778.38	7.66	16.30	---	770.72
		16-Sep-05	778.38	5.79	16.30	---	772.59
		25-Oct-05	778.38	5.81	16.30	---	772.57
		14-Nov-05	778.38	5.96	16.30	---	772.42
MW-4	2005	28-Feb-05	778.43	6.86	15.78	---	771.57
		10-May-05	778.43	7.09	15.78	---	771.34
		15-May-05	778.43	7.17	15.78	---	771.26
		15-Jun-05	778.43	8.02	15.78	---	770.41
		23-Jun-05	778.43	7.91	15.78	---	770.52
		15-Jul-05	778.43	8.55	15.78	---	769.88
		19-Aug-05	778.43	8.55	15.78	---	769.88
		16-Sep-05	778.43	7.33	16.78	---	771.10
		14-Nov-05	778.43	6.97	16.78	---	771.46

SUMMARY OF HISTORICAL WATER TABLE ELEVATIONS, MONITORING WELLS
GOWANDA DAY HABILITATION CENTER
VCA V-00463-9

Gowanda Day Habilitation Center
IRM Completion Report
Changes in Water Table Elevations, Monitoring Wells

MONITOR WELL	YEAR	DATE MEASURED	TOP OF CASING ELEVATION FEET, AMSL	DEPTH TO GROUNDWATER, FEET, TOC	TOTAL WELL DEPTH, FEET, TOC	FREE PRODUCT THICKNESS, FEET	GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, FEET, AMSL
MW-5	2005	28-Feb-05	778.61	10.55	13.95	---	768.06
		10-May-05	778.61	10.78	13.95	---	767.83
		15-May-05	778.61	10.95	13.95	---	767.66
		15-Jun-05	778.61	11.07	13.95	---	767.54
		23-Jul-05					
		15-Jul-05	778.61	11.49	13.95	---	767.12
		19-Aug-05	778.61	11.68	13.95	---	766.93
		16-Sep-05	778.61	10.92	13.95	---	767.69
		14-Nov-05	778.61	10.79	13.95	---	767.82
MW-6	2005	28-Feb-05	781.10	13.08	22.88	---	768.02
		10-May-05	781.10	13.00	22.88	---	768.10
		15-May-05	781.10	13.04	22.88	---	768.06
		15-Jun-05	781.10	13.12	22.88	---	767.98
		23-Jun-05					
		15-Jul-05	781.10	13.99	22.88	---	767.11
		19-Aug-05	781.10	14.14	22.88	---	766.96
		16-Sep-05	781.10	13.48	22.88	---	767.62
		25-Oct-05	781.10	13.09	22.88	---	768.01
		14-Nov-05	781.10	13.34	22.88	---	767.76
		22-Dec-05	781.10	13.65	22.88		767.45
MW-7	2005	28-Feb-05	780.94	13.08	21.80	---	767.86
		10-May-05	780.94	13.19	21.80	---	767.75
		15-May-05	780.94	13.52	21.80	---	767.42
		15-Jun-05	780.94	13.56	21.80	---	767.38
		23-Jun-05	780.94	13.82	21.80	---	767.12
		15-Jul-05	780.94	13.88	21.80	---	767.06
		19-Aug-05	780.94	14.00	21.80	---	766.94
		16-Sep-05	780.94	13.21	21.80	---	767.73
		25-Oct-05	780.94	13.27	21.80	---	767.67
		14-Nov-05	780.94	13.70	21.80	---	767.24
		22-Dec-05	780.94	13.57	21.80	---	767.37
MW-8	2005	28-Feb-05	781.33	8.01	17.65	---	773.32
		10-May-05	781.33	9.00	17.65	---	772.33
		15-May-05	781.33	8.94	17.65	---	772.39
		15-Jun-05	781.33	9.86	17.65	---	771.47
		23-Jun-05	781.33	10.04	17.65	---	771.29
		15-Jul-05	781.33	10.63	17.65	---	770.70
		19-Aug-05	781.33	10.65	17.65	---	770.68
		16-Sep-05	781.33	7.42	17.65	---	773.91
		14-Nov-05	781.33	8.88	17.65	---	772.45
		22-Dec-05	781.33	9.13	17.65		772.20

SUMMARY OF HISTORICAL WATER TABLE ELEVATIONS, MONITORING WELLS
GOWANDA DAY HABILITATION CENTER
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Gowanda Day Habilitation Center
IRM Completion Report
Changes in Water Table Elevations, Monitoring Wells

MONITOR WELL	YEAR	DATE MEASURED	TOP OF CASING ELEVATION FEET, AMSL	DEPTH TO GROUNDWATER, FEET, TOC	TOTAL WELL DEPTH, FEET, TOC	FREE PRODUCT THICKNESS, FEET	GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, FEET, AMSL
MW-9	3005	28-Feb-05	782.61	8.01	20.96	---	774.60
		10-May-05	782.61	8.56	20.96	---	774.05
		15-May-05	782.61	8.67	20.96	---	773.94
		15-Jun-05	782.61	9.89	20.96	---	772.72
		23-Jun-05	782.61	9.99	20.96	---	772.62
		15-Jul-05	782.61	10.74	20.96	---	771.87
		19-Aug-05	782.61	11.80	20.96	---	770.81
		16-Sep-05	782.61	8.40	20.96	---	774.21
		14-Nov-05	782.61	8.66	20.96	---	773.95
		22-Dec-05	782.61	9.55	20.96	---	773.06
MW-10	2005	28-Feb-05	780.02	6.00	19.42	---	774.02
		10-May-05	780.02	6.53	19.42	---	773.49
		15-May-05	780.02	6.60	19.42	---	773.42
		15-Jun-05	780.02	6.67	19.42	---	773.35
		23-Jun-05	780.02	6.98	19.42	---	773.04
		15-Jul-05	780.02	8.48	19.42	---	771.54
		19-Aug-05	780.02	8.58	19.42	---	771.44
		16-Sep-05	780.02	5.40	19.42	---	774.62
		14-Nov-05	780.02	6.59	19.42	---	773.43
MW-11	2005	28-Feb-05	778.58	5.77	15.48	---	772.81
		10-May-05	778.58	6.12	15.48	---	772.46
		15-May-05	778.58	6.21	15.48	---	772.37
		15-Jun-05	778.58	7.26	15.48	---	771.32
		23-Jun-05	778.58	7.29	15.48	---	771.29
		15-Jul-05	778.58	7.83	15.48	---	770.75
		19-Aug-05	778.58	7.93	15.48	---	770.65
		16-Sep-05	778.58	7.33	15.48	---	771.25
		25-Oct-05	778.58	6.09	15.48	---	772.49
		14-Nov-05	778.58	7.33	15.48	---	771.25
		22-Dec-05	778.58	6.54	15.48	---	772.04
MW-12	2005	28-Feb-05	778.50	6.49	17.38	---	772.01
		10-May-05	778.50	6.93	17.38	---	771.57
		15-May-05	778.50	6.97	17.38	---	771.53
		15-Jun-05	778.50	7.63	17.38	---	770.87
		23-Jun-05	778.50	7.72	17.38	---	770.78
		15-Jul-05	778.50	8.59	17.38	---	769.91
		19-Aug-05	778.50	8.39	17.38	---	770.11
		16-Sep-05	778.50	7.83	17.38	---	770.67
		25-Oct-05	778.50	6.80	17.38	---	771.70
		14-Nov-05	778.50	6.70	17.38	---	771.80
		22-Dec-05	778.50	7.35	17.38	---	771.15

SUMMARY OF HISTORICAL WATER TABLE ELEVATIONS, MONITORING WELLS
GOWANDA DAY HABILITATION CENTER
VCA V-00463-9

Gowanda Day Habilitation Center
IRM Completion Report
Changes in Water Table Elevations, Monitoring Wells

MONITOR WELL	YEAR	DATE MEASURED	TOP OF CASING ELEVATION FEET, AMSL	DEPTH TO GROUNDWATER, FEET, TOC	TOTAL WELL DEPTH, FEET, TOC	FREE PRODUCT THICKNESS, FEET	GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, FEET, AMSL
MW-13	2005	28-Feb-05	778.39	6.63	17.40	---	771.76
		10-May-05	778.39	6.84	17.40	---	771.55
		15-May-05	778.39	7.06	17.40	---	771.33
		15-Jun-05	778.39	7.75	17.40	---	770.64
		23-Jun-05	778.39	8.20	17.40	---	770.19
		15-Jul-05	778.39	8.32	17.40	---	770.07
		19-Aug-05	778.39	8.36	17.40	---	770.03
		16-Sep-05	778.39	7.77	17.40	---	770.62
		25-Oct-05	778.39	6.65	17.40	---	771.74
		14-Nov-05	778.39	6.74	17.40	---	771.65
		22-Dec-05	778.39	7.17	17.40	---	771.22
MW-14	2004	19-Oct-04	778.43	9.32	18.15	---	769.11
		28-Feb-05	778.43	9.53	18.15	---	768.90
		10-May-05	778.43	9.73	18.15	---	768.70
		15-May-05	778.43	10.06	18.15	---	768.37
		15-Jun-05	778.43	10.21	18.15	---	768.22
		23-Jun-05	778.43	10.51	18.15	---	767.92
		15-Jul-05	778.43	10.66	18.15	---	767.77
		19-Aug-05	778.43	10.77	18.15	---	767.66
		16-Sep-05	778.43	10.42	18.15	---	768.01
		25-Oct-05	778.43	6.52	18.15	---	771.91
		14-Nov-05	778.43	9.47	18.15	---	768.96
		22-Dec-05	778.43	9.96	18.15	---	768.47
MW-15	2005	28-Feb-05	778.38	10.32	19.80	---	768.06
		10-May-05	778.38	10.46	18.80	---	767.92
		15-May-05	778.38	10.79	18.80	---	767.59
		15-Jun-05	778.38	10.90	19.80	---	767.48
		23-Jun-05	778.38	11.06	19.80	---	767.32
		15-Jul-05	778.38	11.12	19.80	---	767.26
		19-Aug-05	778.38	11.34	19.80	---	767.04
		16-Sep-05	778.38	10.99	19.80	---	767.39
		25-Oct-05	778.38	10.49	19.80	---	767.89
		14-Nov-05	778.38	10.52	19.80	---	767.86
		22-Dec-05	778.38	10.84	19.80	---	767.54
MW-16	2005	28-Feb-05	780.43	12.53	23.26	---	767.90
		10-May-05	780.43	12.68	23.26	---	767.75
		15-May-05	780.43	12.91	23.26	---	767.52
		15-Jun-05	780.43	13.03	23.26	---	767.40
		23-Jun-05					
		15-Jul-05	780.43	13.30	23.26	---	767.13
		19-Aug-05	780.43	13.40	23.26	---	767.03
		16-Sep-05	780.43	12.23	23.26	---	768.20
		25-Oct-05	780.43	12.66	23.26	---	767.77
		14-Nov-05	780.43	12.74	23.26	---	767.69
		22-Dec-05	780.43	12.99	23.26	---	767.44

SUMMARY OF HISTORICAL WATER TABLE ELEVATIONS, MONITORING WELLS
GOWANDA DAY HABILITATION CENTER
VCA V-00463-9

Gowanda Day Habilitation Center
IRM Completion Report
Changes in Water Table Elevations, Monitoring Wells

MONITOR WELL	YEAR	DATE MEASURED	TOP OF CASING ELEVATION FEET, AMSL	DEPTH TO GROUNDWATER, FEET, TOC	TOTAL WELL DEPTH, FEET, TOC	FREE PRODUCT THICKNESS, FEET	GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, FEET, AMSL
MW-17	2004	19-Oct-04	779.85	12.97	25.18		766.88
	2005	28-Feb-05	779.85	11.99	25.18	---	767.86
		10-May-05	779.85	12.03	25.18	---	767.82
		15-May-05	779.85	12.34	25.18	---	767.51
		15-Jun-05	779.85	12.39	25.18	---	767.46
		23-Jun-05	779.85	12.74	25.18	---	767.11
		15-Jul-05	779.85	12.86	25.18	---	766.99
		19-Aug-05	779.85	13.02	25.18	---	766.83
		16-Sep-05	779.85	12.32	25.18	---	767.53
		25-Oct-05	779.85	12.30	25.18	---	767.55
		14-Nov-05	779.85	12.34	25.18	---	767.51
		22-Dec-05	779.85	12.53	25.18	---	767.32
MW-18	2005	28-Feb-05	776.39	9.08	25.00	---	767.31
		10-May-05	776.39	9.23	25.00	---	767.16
		15-May-05	776.39	9.53	25.00	---	766.86
		15-Jun-05	776.39	9.61	25.00	---	766.78
		23-Jun-05	776.39				
		15-Jul-05	776.39	10.06	25.00	---	766.33
		19-Aug-05	776.39	10.12	25.00	---	766.27
		16-Sep-05	776.39	9.15	25.00	---	767.24
		14-Nov-05	776.39	9.40	25.00	---	766.99
MW-19	2005	28-Feb-05	774.20	8.10	17.67	---	766.10
		10-May-05	774.20	8.34	17.67	---	765.86
		15-May-05	774.20	8.58	17.67	---	765.62
		15-Jun-05	774.20	8.69	17.67	---	765.51
		23-Jun-05	774.20				
		15-Jul-05	774.20	9.21	17.67	---	764.99
		19-Aug-05	774.20	9.48	17.67	---	764.72
		16-Sep-05	774.20	8.68	17.67	---	765.52
		14-Nov-05	774.20	8.62	17.67	---	765.58
MW-20	2005	28-Feb-05	778.04	9.52	14.75	---	768.52
		10-May-05	778.04	9.78	13.75	---	768.26
		15-May-05	778.04	9.94	14.75	---	768.10
		15-Jun-05	778.04	10.12	14.75	---	767.92
		23-Jun-05	778.04				
		15-Jul-05	778.04	10.77	14.75	---	767.27
		19-Aug-05	778.04	10.93	14.75	---	767.11
		16-Sep-05	778.04	10.44	14.75	---	767.60
		14-Nov-05	778.04	9.70	14.75	---	768.34

SUMMARY OF HISTORICAL WATER TABLE ELEVATIONS, MONITORING WELLS
GOWANDA DAY HABILITATION CENTER
VCA V-00463-9

Gowanda Day Habilitation Center
IRM Completion Report
Changes in Water Table Elevations, Monitoring Wells

MONITOR WELL	YEAR	DATE MEASURED	TOP OF CASING ELEVATION FEET, AMSL	DEPTH TO GROUNDWATER, FEET, TOC	TOTAL WELL DEPTH, FEET, TOC	FREE PRODUCT THICKNESS, FEET	GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, FEET, AMSL
MW-21	2005	28-Feb-05	774.76	9.27	15.82	---	765.49
		10-May-05	774.76	9.36	15.82	---	765.40
		15-May-05	774.76	9.50	15.82	----	765.26
		15-Jun-05	774.76	9.65	15.82	---	765.11
		23-Jun-05	774.76				
		15-Jul-05	774.76	10.13	15.82	---	764.63
		19-Aug-05	774.76	10.03	15.82	---	764.73
		16-Sep-05	774.76	8.20	15.82	---	766.56
		14-Nov-05	774.76	9.58	15.82	---	765.18

SUMMARY OF HISTORIC GROUNDWATER ELEVATIONS, RECOVERY WELLS
GOWANDA DAY HABILITATION CENTER
VCA #V-00463-9

Gowanda Day Habilitation Center
IRM Completion Report
Changes In Water Table Elevations, Recovery Wells

RECOVERY WELL	YEAR	DATE MEASURED	TOP OF CASING ELEVATION FEET, AMSL	DEPTH TO GROUNDWATER, FEET, TOC	TOTAL WELL DEPTH, FEET, TOC	FREE PRODUCT THICKNESS FEET	GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, FEET, AMSL
DR-1	2005	28-Feb-05	779.66	6.82	15.55	---	772.84
		10-May-05	779.66	7.08	16.12	---	772.58
		16-May-05	779.66	NA	16.12	---	
		15-Jun-05	779.66	8.38	16.12	---	771.28
		23-Jun-05	779.66	8.62	16.12	---	771.04
		15-Jul-05	779.66	9.13	16.12	---	770.53
		19-Aug-05	779.66	9.05	16.12	---	770.61
		16-Sep-05	779.66	8.41	16.12	---	771.25
		25-Oct-05	779.66	5.42	16.12	---	774.24
		14-Nov-05	779.66	5.85	16.12	---	773.81
		22-Dec-05	779.66	6.52	16.12	---	773.14
	2006						
		23-Feb-06	119.66	6.15	18.06	---	773.51
DR-2	2005	28-Feb-05	779.93	7.91	18.53	---	772.02
		10-May-05	779.93	8.77	18.53	---	771.16
		16-May-05	779.93	NA	18.06	---	
		15-Jun-05	779.93	9.32	18.06	---	770.61
		23-Jun-05	779.93	9.14	18.06	---	770.79
		15-Jul-05	779.93	9.95	18.06	---	769.98
		19-Aug-05	779.93	10.00	18.06	---	769.93
		16-Sep-05	779.93	9.38	18.06	---	770.55
		25-Oct-05	779.93	6.64	18.06	---	773.29
		14-Nov-05	779.93	6.52	18.06	---	773.41
		22-Dec-05	779.93	8.50	18.06	---	771.43
	2006						
		23-Feb-06	779.93	7.70	18.06	---	772.23
DR-3	2005	28-Feb-05	779.78	11.19	20.33	---	768.59
		10-May-05	779.78	11.28	20.33	---	768.50
		16-May-05	779.78	11.35	20.33	---	768.43
		15-Jun-05	779.78	11.97	20.45	---	767.81
		23-Jun-05	779.78	12.27	20.45	---	767.51
		15-Jul-05	779.78	9.93	20.45	---	769.85
		19-Aug-05	779.68	11.50	20.45	---	768.18
		16-Sep-05	779.68	12.28	20.45	---	767.40
		25-Oct-05	779.68	11.42	20.45	---	768.26
		14-Nov-05	779.68	10.25	20.45	---	769.43
		22-Dec-05	779.68	11.80	20.45		767.88
	2006						
		23-Feb-06	779.78	10.05	20.45	---	769.73
DR-4	2005	28-Feb-05	779.64	11.57	19.61	---	768.07
		10-May-05	779.64	11.72	19.40	---	767.92
		16-May-05	779.64	11.94	19.40	---	767.70
		15-Jun-05	779.64	12.25	19.69	---	767.39
		23-Jun-05	779.64	12.31	19.69	---	767.33
		15-Jul-05	779.64	12.17	19.69	---	767.47
		19-Aug-05	779.64	12.60	19.69	---	767.04
		16-Sep-05	779.64	12.23	19.69	---	767.41
		25-Oct-05	779.64	11.77	19.69	---	767.87
		14-Nov-05	779.64	10.85	19.69	---	768.79
		22-Dec-05	779.64	11.28	19.69	---	768.36
	2006						
		23-Feb-06	779.64	10.83	19.69	---	768.81

SUMMARY OF HISTORIC GROUNDWATER ELEVATIONS, RECOVERY WELLS
GOWANDA DAY HABILITATION CENTER
VCA #V-00463-9

Gowanda Day Habilitation Center
IRM Completion Report
Changes In Water Table Elevations, Recovery Wells

RECOVERY WELL	YEAR	DATE MEASURED	TOP OF CASING ELEVATION FEET, AMSL	DEPTH TO GROUNDWATER, FEET, TOC	TOTAL WELL DEPTH, FEET, TOC	FREE PRODUCT THICKNESS FEET	GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, FEET, AMSL
G-1	2005	28-Feb-05	779.83	11.80	21.77	---	768.03
		10-May-05	779.83	11.98	22.98	---	767.85
		16-May-05	779.83	12.50	22.98	---	767.33
		15-Jun-05	779.83	12.52	22.98	---	767.31
		23-Jun-05	779.83	12.64	22.98	---	767.19
		15-Jul-05	779.83	12.75	22.98	---	767.08
		19-Aug-05	779.83	12.80	22.98	---	767.03
		16-Sep-05	779.83	12.45	22.98	---	767.38
		25-Oct-05	779.83	12.19	22.98	---	767.64
		14-Nov-05	779.83	12.02	22.98	---	767.81
		22-Dec-05	779.83	12.55	22.98	---	767.28
	2006						
		23-Feb-06	779.83	12.00	22.98	---	767.83
G-2	2005	28-Feb-05	779.72	11.68	20.22	---	768.04
		10-May-05	779.72	11.88	20.22	---	767.84
		16-May-05	779.72	12.78	20.22	---	766.94
		15-Jun-05	779.72	12.48	20.72	---	767.24
		23-Jun-05	779.72	12.73	20.72	---	766.99
		15-Jul-05	779.72	12.79	20.72	---	766.93
		19-Aug-05	779.72	12.75	20.72	---	766.97
		16-Sep-05	779.72	12.34	20.72	---	767.38
		25-Oct-05	779.72	12.06	20.72	---	767.66
		14-Nov-05	779.72	11.93	20.72	---	767.79
		22-Dec-05	779.72	12.50	20.72	---	767.22
	2006						
		23-Feb-06	779.72	11.90	20.72	---	767.82

SUMMARY OF HISTORICAL WATER TABLE ELEVATIONS, MONITORING WELLS
GOWANDA DAY HABILITATION CENTER
VCA V-00463-9

Gowanda Day Habilitation Center
IRM Completion Report
Changes in Water Table Elevation

May 10 to May 15, 2005:		May 15 to June 15, 2005:		June 15 to June 23, 2005:	
Well	Change in Elevation ft.	Well	Change in Elevation, ft.	Well	Change in Elevation, ft.
MW-1:	0.13	MW-1:	**0.79**	MW-1:	**0.28**
MW-2:	0.13	MW-2:	**0.91**	MW-2:	0.07
MW-3	-0.24	MW-3	**0.68**	MW-3	**0.36**
MW-4	0.08	MW-4	**0.85**	MW-4	-0.11
MW-5	**0.17**	MW-5	0.12	MW-5	
MW-6	0.04	MW-6	0.08	MW-6	
MW-7	**0.33**	MW-7	0.04	MW-7	**0.26**
MW-8	-0.06	MW-8	**0.92**	MW-8	0.18
MW-9	0.11	MW-9	**1.22**	MW-9	0.10
MW-10	0.07	MW-10	0.07	MW-10	**0.31**
MW-11	0.09	MW-11	**1.05**	MW-11	0.03
MW-12	0.04	MW-12	**0.66**	MW-12	0.09
MW-13	**0.22**	MW-13	**0.69**	MW-13	**0.45**
MW-14	**0.33**	MW-14	0.15	MW-14	**0.30**
MW-15	**0.33**	MW-15	0.11	MW-15	0.16
MW-16	**0.23**	MW-16	0.12	MW-16	
MW-17	**0.31**	MW-17	0.05	MW-17	**0.35**
MW-18	**0.30**	MW-18	0.08	MW-18	
MW-19	**0.24**	MW-19	0.11	MW-19	
MW-20	**0.16**	MW-20	0.18	MW-20	
MW-21	0.14	MW-21	0.15	MW-21	
Average:	0.15	Average:	0.43	Average:	0.20
BKGD Average of MW-10, MW-21	0.11	BKGD Average of MW-10, MW-21	0.11	BKGD Average of MW-8, MW-9, MW-10	0.20
BKGD Average of MW-8, MW-9, MW-10	0.04	BKGD Average of MW-8, MW-9, MW-10	0.74	BKDG Average of MW-8, MW-9, MW-10	0.20

All measurements are in feet
Postive values indicate a drop in the water table, from the first date to the next monitoring date (decrease in WT elevation).
Negative values indicate a rise in the water table, from the first date to the next monitoring date (increase in WT elevation).
Bold = Value is greater than the site wide or background value
BKGD = Change in water table elevation for up-gradient and down-gradient monitoring wells

SUMMARY OF HISTORICAL WATER TABLE ELEVATIONS, MONITORING WELLS
GOWANDA DAY HABILITATION CENTER
VCA V-00463-9

Gowanda Day Habilitation Center
IRM Completion Report
Changes in Water Table Elevation

June 15 to July 15, 2005:		May 15 to July 15, 2005:		July 15 to Aug. 19, 2005:	
Well	Change in Elevation, ft.	Well	Change in elevation, ft.	Well	Change in Elevation, ft.
MW-1:	**0.64**	MW-1:	**1.43**	MW-1:	**0.24**
MW-2:	0.36	MW-2:	**1.27**	MW-2:	**0.45**
MW-3	**0.90**	MW-3	**1.58**	MW-3	0.09
MW-4	0.53	MW-4	**1.38**	MW-4	0.00
MW-5	0.42	MW-5	0.54	MW-5	**0.19**
MW-6	**0.87**	MW-6	0.95	MW-6	0.15
MW-7	0.32	MW-7	0.36	MW-7	0.12
MW-8	**0.77**	MW-8	**1.69**	MW-8	0.02
MW-9	**0.85**	MW-9	**2.07**	MW-9	1.06
MW-10	**1.81**	MW-10	**1.88**	MW-10	0.10
MW-11	0.57	MW-11	**1.62**	MW-11	0.1
MW-12	**0.96**	MW-12	**1.62**	MW-12	-0.2
MW-13	0.57	MW-13	**1.26**	MW-13	0.04
MW-14	0.45	MW-14	0.60	MW-14	0.11
MW-15	0.22	MW-15	0.33	MW-15	**0.22**
MW-16	0.27	MW-16	0.39	MW-16	0.10
MW-17	0.47	MW-17	0.52	MW-17	**0.16**
MW-18	0.45	MW-18	0.53	MW-18	0.06
MW-19	0.52	MW-19	0.63	MW-19	**0.27**
MW-20	**0.65**	MW-20	0.83	MW-20	**0.16**
MW-21	0.48	MW-21	0.63	MW-21	-0.1
Average:	0.62	Average:	1.05	Average:	0.16
BKGD Average of MW-10, MW-21	1.15	BKGD Average of MW-10, MW-21	1.255	BKGD Average of MW-10, MW-21	0.00
BKGD Average of MW-8, MW-9, MW-10	1.14	BKGD Average of MW-8, MW-9, MW-10	1.88	BKGD Average of MW-8, MW-9, MW-10	0.39

All measurements are in feet
Postive values indicate a drop in the water table, from the first date to the next monitoring date (decrease in WT elevation).
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Bold = Value is greater than the site wide or background value
BKGD = Change in water table elevation for up-gradient and down-gradient monitoring wells

SUMMARY OF HISTORICAL WATER TABLE ELEVATIONS, MONITORING WELLS
GOWANDA DAY HABILITATION CENTER
VCA V-00463-9

Gowanda Day Habilitation Center
IRM Completion Report
Changes in Water Table Elevation

August 19 to Sept. 16, 2005		Sept. 16 to Oct. 25, 2005		Aug. 19 to November 16, 2005		
Well	Change in Elevation, ft.	Well	Change in Elevation, ft.	Well	Change in Elevation, ft.	
MW-1:	-2.15	MW-1:	-0.20	MW-1:	-1.77	MW-1:
MW-2:	-2.35	MW-2:	0.79	MW-2:	-1.79	MW-2:
MW-3	-1.87	MW-3	0.02	MW-3	-1.70	MW-3
MW-4	-1.22	MW-4		MW-4	-1.58	MW-4
MW-5	-0.76	MW-5		MW-5	-0.89	MW-5
MW-6	-0.66	MW-6	-0.39	MW-6	-0.80	MW-6
MW-7	-0.79	MW-7	0.06	MW-7	-0.30	MW-7
MW-8	-3.23	MW-8		MW-8	-1.77	MW-8
MW-9	-3.40	MW-9		MW-9	-3.14	MW-9
MW-10	-3.18	MW-10		MW-10	-1.99	MW-10
MW-11	-0.6	MW-11	-1.24	MW-11	-0.60	MW-11
MW-12	-0.56	MW-12	-1.03	MW-12	-1.69	MW-12
MW-13	-0.59	MW-13	-1.12	MW-13	-1.62	MW-13
MW-14	-0.35	MW-14	-3.9	MW-14	-1.30	MW-14
MW-15	-0.35	MW-15	-0.5	MW-15	-0.82	MW-15
MW-16	-1.17	MW-16	0.43	MW-16	-0.66	MW-16
MW-17	-0.7	MW-17	-0.02	MW-17	-0.68	MW-17
MW-18	-0.97	MW-18		MW-18	-0.72	MW-18
MW-19	-0.80	MW-19		MW-19	-0.86	MW-19
MW-20	-0.49	MW-20		MW-20	-1.23	MW-20
MW-21	-1.83	MW-21		MW-21	-0.45	MW-21
Average:	-1.33	Average:	-0.59	Average:	-1.26	
				increased since Aug		
BKGD Average of MW-10, MW-21	-2.505	BKGD Average of MW-10, MW-21	NA Wells not gauged	BKGD Average of MW-10, MW-21	-1.22	
BKGD Average of MW-8, MW-9, MW-10	-3.27	BKGD Average of MW-8, MW-9, MW-10	NA Wells not gauged	BKGD Average of MW-8, MW-9, MW-10	-2.30	

All measurements are in feet
Postive values indicate a drop in the water table, from the first date to the next monitoring date (decrease in WT elevation).
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Bold = Value is greater than the site wide or background value
BKGD = Change in water table elevation for up-gradient and down-gradient monitoring wells

CENTEK LABORATORIES, LLC

143 Midler Park Drive * Syracuse, NY 13206

Phone (315) 431-9730 * Fax (315) 431-9731 * Emergency 24/7 (315) 416-2751

NELAC Certifacate No. 11830

www.CentekLabs.com

Wednesday, November 23, 2005

Mr. Gary Flisnik
Bergman and Associates
28 E. Main Street
Suite 200
Rochester, NY 14614

TEL: 585-232-5135
FAX 585-232-4652

RE: Gowanda

Dear Mr. Gary Flisnik: Order No.: C0511013

Centek Laboratories, LLC received 14 sample(s) on 11/21/2005 for the analyses presented in the following report.

Centek Laboratories analyzes the samples as received from the client. We do our best to make our reporting format clear and understandable and hope you are thoroughly satisfied with our services.

Centek Laboratories is distinctively qualified to meet your needs for precise and timely volatile organic compound analysis. We perform all analyses according to EPA, NIOSH or OSHA-approved analytical methods. Centek Laboratories is dedicated to providing quality analyses and exceptional customer service.

Please contact your client service representative, Michael Palmer at (315) 431-9730, if you would like any additional information regarding this report.

Sincerely,

Michael Palmer

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT: Bergman and Associates
Project: Gowanda
Lab Order: C0511013

CASE NARRATIVE

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objective except as indicated in the case narrative. All samples were received and analyzed within the EPA recommended holding times. Samples were analyzed using the methods outlined in the following references:

Compendium of Methods for the Determination of Toxic Organic Compounds, Compendium Method TO-15, January 1999.

Centek Laboratories, LLC

143 Midler Park Drive
Syracuse, NY 13206
Phone: 315-431-9730 Fax: 315-431-9731 Emergency: 315-416-2751 / 416-2752

Chain of Custody

Site Name: GOLDMANDA
Project: 5596.28
PO#: 13065
Other:

Detection Limit	Report Level
☐ 5ppbv	☐ Level I
☐ 1ug/M3	☒ Level II
☒ 1ug/M3 +TCE .25	☐ Cat "B" Like

Turnaround Time:	Check One	Rush TAT Surcharge %	Due Date:
5 Business Days	☑	0%	11/24/05
4 Business Days	☐	35%	
3 Business Days	☐	50%	
2 Business Days	☐	75%	
Next Day by 5pm	☐	100%	
Next Day by Noon	☐	150%	
Same Day	☐	200%	

Company: BERGMANN ASSOCIATES
Report: GARY FLISNIK
28 E. MAIN ST
200 FIRST FEDERAL PLAZA
ROCHESTER, NY 14614
Phone: 585-232-5135
Fax: 585-232-4652
Email: GFLISNIK@BERGMANNPC.COM

Company: SAME
Invoice:
Phone:
Fax:
Email:

Sample ID	Date Sampled	Canister Number	Regulator Number	Analysis Request	Comments START	START Rec Vac	END	END Rec Vac
RM 162	11/16/05	189	254	TO15 C 1ug/m3 0.25	1045	-29"	1835	-1.5
CONF 157	11/16/05	193	124		1047	-28.25	1837	-2.0
MOD APT 101	11/16/05	181	100		1051	-28.5	1843	-2.0
SENSOR 58B	11/16/05	88	262		1053	-29	1822	-1.5
CAF 50	11/16/05	73	46		1055	-29	1847	-1.5
OCTHER 85	11/16/05	220	144		1102	-30	1849	-4.5
NURSE CLINIC 39	11/16/05	98	143		1059	-29.25	1851	-2.0
ART 37	11/16/05	83	272		1100	-28.25	1854	-3.5
MOD APT B	11/16/05	138	110		1105	-29	1855	-4.5
MACH SHOP 33	11/16/05	202	253		1107	-29	1857	-1.5
CAF 124	11/16/05	133	48		1049	-29	1859	-2.5
BACKGROUND	11/16/05	85	173		1057	-28.75	1802	-3.5
			JW	11/16/05				
SVE SKID EFF	11/16/05	11	172	TO15 C 5ppb	1523	-27	1708	-1
POST CARBON EFF	11/16/05	9	44		1525	-28	1710	-2
			JW	11/16/05				

Chain of Custody	Print Name	Signature	Date/Time	Courier:
Sampled by:	JIM MARSCHNER		11/17/05 @ AS ABOVE	SAMPLER DROP OFF
Relinquished by:	MARSCHNER		11/17/05 @ 9:44	
Received at Lab by:	R PELLEGRINO		11/18/05 9:45	

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Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	RM 162
Lab Order:	C0511013	**Tag Number:**	189,254
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-001A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.150		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Tetrachloroethylene	ND	0.150		ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Trichloroethene	ND	0.0400		ppbV	1	11/21/2005
Vinyl chloride	ND	0.150		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	101	70-130		%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	CONF 157
Lab Order:	C0511013	**Tag Number:**	193,124
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-002A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.150		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Tetrachloroethylene	ND	0.150		ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Trichloroethene	0.160	0.0400		ppbV	1	11/21/2005
Vinyl chloride	ND	0.150		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	116	70-130		%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	MOD. ART 101
Lab Order:	C0511013	**Tag Number:**	181,100
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-003A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.150		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Tetrachloroethylene	ND	0.150		ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Trichloroethene	0.120	0.0400		ppbV	1	11/21/2005
Vinyl chloride	ND	0.150		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	106	70-130		%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	SENSORI 58B
Lab Order:	C0511013	**Tag Number:**	88,262
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-004A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.150		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Tetrachloroethylene	ND	0.150		ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Trichloroethene	0.100	0.0400		ppbV	1	11/21/2005
Vinyl chloride	ND	0.150		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	100	70-130		%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	CAF 50
Lab Order:	C0511013	**Tag Number:**	73,46
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-005A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.150		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	0.170	0.150		ppbV	1	11/21/2005
Tetrachloroethylene	ND	0.150		ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Trichloroethene	0.700	0.0400		ppbV	1	11/21/2005
Vinyl chloride	ND	0.150		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	102	70-130		%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	OC THER 85
Lab Order:	C0511013	**Tag Number:**	220,144
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-006A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.150		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	0.210	0.150		ppbV	1	11/21/2005
Tetrachloroethylene	ND	0.150		ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Trichloroethene	0.680	0.0400		ppbV	1	11/21/2005
Vinyl chloride	ND	0.150		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	103	70-130		%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	NURSE CLINIC 39
Lab Order:	C0511013	**Tag Number:**	98,143
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-007A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.150		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	0.13	0.150	J	ppbV	1	11/21/2005
Tetrachloroethylene	ND	0.150		ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Trichloroethene	0.510	0.0400		ppbV	1	11/21/2005
Vinyl chloride	ND	0.150		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	106	70-130		%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	ART 37
Lab Order:	C0511013	**Tag Number:**	83,272
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-008A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.150		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Tetrachloroethylene	0.10	0.150	J	ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Trichloroethene	0.330	0.0400		ppbV	1	11/21/2005
Vinyl chloride	ND	0.150		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	103	70-130		%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	MOD ART 13
Lab Order:	C0511013	**Tag Number:**	138,110
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-009A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.150		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	0.490	0.150		ppbV	1	11/21/2005
Tetrachloroethylene	0.170	0.150		ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Trichloroethene	0.960	0.0400		ppbV	1	11/21/2005
Vinyl chloride	ND	0.150		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	105	70-130		%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	MACH. SHOP 33
Lab Order:	C0511013	**Tag Number:**	202,253
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-010A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.150		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	3.90	1.50		ppbV	10	11/22/2005
Tetrachloroethylene	ND	0.150		ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Trichloroethene	6.20	0.400		ppbV	10	11/22/2005
Vinyl chloride	ND	0.150		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	101	70-130		%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	CAF 124
Lab Order:	C0511013	**Tag Number:**	133,48
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-011A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.150		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Tetrachloroethylene	ND	0.150		ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Trichloroethene	0.130	0.0400		ppbV	1	11/21/2005
Vinyl chloride	ND	0.150		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	132	70-130	S	%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	BACK GROUND
Lab Order:	C0511013	**Tag Number:**	85,173
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-012A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.150		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Tetrachloroethylene	ND	0.150		ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.150		ppbV	1	11/21/2005
Trichloroethene	ND	0.0400		ppbV	1	11/21/2005
Vinyl chloride	ND	0.150		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	106	70-130		%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	SVE SKID EFF
Lab Order:	C0511013	**Tag Number:**	11,172
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-013A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	5.0		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	1900	300		ppbV	60	11/21/2005
Tetrachloroethylene	2	5.0	J	ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	5.0		ppbV	1	11/21/2005
Trichloroethene	15000	900		ppbV	180	11/21/2005
Vinyl chloride	14	5.0		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	101	70-130		%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	POST CARBON EFF
Lab Order:	C0511013	**Tag Number:**	9,44
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-014A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	5.0		ppbV	1	11/21/2005
cis-1,2-Dichloroethene	ND	5.0		ppbV	1	11/21/2005
Tetrachloroethylene	ND	5.0		ppbV	1	11/21/2005
trans-1,2-Dichloroethene	ND	5.0		ppbV	1	11/21/2005
Trichloroethene	3	5.0	J	ppbV	1	11/21/2005
Vinyl chloride	11	5.0		ppbV	1	11/21/2005
Surr: Bromofluorobenzene	100	70-130		%REC	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	RM 162
Lab Order:	C0511013	**Tag Number:**	189,254
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-001A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.832		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Tetrachloroethylene	ND	1.03		ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Trichloroethene	ND	0.218		ug/m3	1	11/21/2005
Vinyl chloride	ND	0.390		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	CONF 157
Lab Order:	C0511013	**Tag Number:**	193,124
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-002A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.832		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Tetrachloroethylene	ND	1.03		ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Trichloroethene	0.874	0.218		ug/m3	1	11/21/2005
Vinyl chloride	ND	0.390		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	MOD. ART 101
Lab Order:	C0511013	**Tag Number:**	181,100
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-003A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.832		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Tetrachloroethylene	ND	1.03		ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Trichloroethene	0.655	0.218		ug/m3	1	11/21/2005
Vinyl chloride	ND	0.390		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	SENSORI 58B
Lab Order:	C0511013	**Tag Number:**	88,262
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-004A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.832		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Tetrachloroethylene	ND	1.03		ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Trichloroethene	0.546	0.218		ug/m3	1	11/21/2005
Vinyl chloride	ND	0.390		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	CAF 50
Lab Order:	C0511013	**Tag Number:**	73,46
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-005A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.832		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	0.685	0.604		ug/m3	1	11/21/2005
Tetrachloroethylene	ND	1.03		ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Trichloroethene	3.82	0.218		ug/m3	1	11/21/2005
Vinyl chloride	ND	0.390		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	OC THER 85
Lab Order:	C0511013	**Tag Number:**	220,144
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-006A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.832		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	0.846	0.604		ug/m3	1	11/21/2005
Tetrachloroethylene	ND	1.03		ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Trichloroethene	3.71	0.218		ug/m3	1	11/21/2005
Vinyl chloride	ND	0.390		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	NURSE CLINIC 39
Lab Order:	C0511013	**Tag Number:**	98,143
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-007A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.832		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	0.524	0.604	J	ug/m3	1	11/21/2005
Tetrachloroethylene	ND	1.03		ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Trichloroethene	2.79	0.218		ug/m3	1	11/21/2005
Vinyl chloride	ND	0.390		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	ART 37
Lab Order:	C0511013	**Tag Number:**	83,272
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-008A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.832		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Tetrachloroethylene	0.689	1.03	J	ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Trichloroethene	1.80	0.218		ug/m3	1	11/21/2005
Vinyl chloride	ND	0.390		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	MOD ART 13
Lab Order:	C0511013	**Tag Number:**	138,110
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-009A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.832		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	1.97	0.604		ug/m3	1	11/21/2005
Tetrachloroethylene	1.17	1.03		ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Trichloroethene	5.24	0.218		ug/m3	1	11/21/2005
Vinyl chloride	ND	0.390		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	MACH. SHOP 33
Lab Order:	C0511013	**Tag Number:**	202,253
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-010A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.832		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	15.7	6.04		ug/m3	10	11/22/2005
Tetrachloroethylene	ND	1.03		ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Trichloroethene	33.9	2.18		ug/m3	10	11/22/2005
Vinyl chloride	ND	0.390		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	CAF 124
Lab Order:	C0511013	**Tag Number:**	133,48
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-011A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.832		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Tetrachloroethylene	ND	1.03		ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Trichloroethene	0.710	0.218		ug/m3	1	11/21/2005
Vinyl chloride	ND	0.390		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	BACK GROUND
Lab Order:	C0511013	**Tag Number:**	85,173
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-012A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15 1UG/M3 W/ 0.25UG/M3 TCE		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	0.832		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Tetrachloroethylene	ND	1.03		ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	0.604		ug/m3	1	11/21/2005
Trichloroethene	ND	0.218		ug/m3	1	11/21/2005
Vinyl chloride	ND	0.390		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	SVE SKID EFF
Lab Order:	C0511013	**Tag Number:**	11,172
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-013A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	28		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	7500	1200		ug/m3	60	11/21/2005
Tetrachloroethylene	16	34	J	ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	20		ug/m3	1	11/21/2005
Trichloroethene	80000	4900		ug/m3	180	11/21/2005
Vinyl chloride	37	13		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *23-Nov-05*

CLIENT:	Bergman and Associates	**Client Sample ID:**	POST CARBON EFF
Lab Order:	C0511013	**Tag Number:**	9,44
Project:	Gowanda	**Collection Date:**	11/16/2005
Lab ID:	C0511013-014A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
AIR TOXIC TO15		**TO-15**				Analyst: **RJP**
1,1,2-Trichloroethane	ND	28		ug/m3	1	11/21/2005
cis-1,2-Dichloroethene	ND	20		ug/m3	1	11/21/2005
Tetrachloroethylene	ND	34		ug/m3	1	11/21/2005
trans-1,2-Dichloroethene	ND	20		ug/m3	1	11/21/2005
Trichloroethene	15	27	J	ug/m3	1	11/21/2005
Vinyl chloride	29	13		ug/m3	1	11/21/2005

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		