Supplemental Closure Investigation Report - Addendum

Hudson River Psychiatric Center
Landfill Area 6
NYS Route 9
Town of Poughkeepsie
Dutchess County, New York

July 21, 2004

Chazen Project #: 40307.00

THE Chazen COMPANIES

Prepared for:

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1.0 INTRODUCTION AND PURPOSE

This addendum, prepared by The Chazen Companies (TTC), adds to prior Investigation Reports for Landfill Six at the Hudson River Psychiatric Center site and is submitted by the "Volunteer", Hudson Heritage CPCR Ventures, L.L.C. The site is defined in the Voluntary Cleanup Program (VCP) Agreement for Landfill Six (V00657-3) and consists of approximately 2.5 acres situated east of the foundation of a former pavilion south of Ryan Hall and west of a railroad bed (Figures 1 and 2). The specific boundaries of the site covered by the VCP Agreement are defined in the agreement.

Early studies of this general area on the Hudson River Psychiatric Center defined Landfill Six more broadly than it is referred to either herein or in the present Voluntary Cleanup Agreement. Landfill Six, as discussed in prior evaluations dating to the late 1980s and early 1990s include lands further west, toward NYS Route 9. This more westerly area was previously found to contain PCB contamination related to a storm drain discharge in that area (LMS, 1996). The PCB area warranted listing of that portion of Landfill Six as a Class 2 Inactive Hazardous Waste site. Three IRM actions have cleaned sediments and sources in that area and it is now scheduled to be or has been relisted as a Class 4 site.

The present Site is defined in the VCP Agreement as areas east of the foundation of a former pavilion and upstream of the remediated PCB area (Figures 1 and 2). The VCP Agreement site includes only lands with buried municipal and ash waste, the boundaries of which were clearly defined during studies in 2001 and 2002 (EA, 2001; 2002).

During 2003 and 2004, The Chazen Companies were retained by prospective purchasers of portions of the Psychiatric Center property (which includes Landfill Six) to evaluate sources of groundwater flow into Landfill Six which result in leachate releases to the stream flowing by the landfill. Chazen's 2004 study focused on identifying flow pathways and leachate sources but did not fully meet the VCP Agreement content of an Investigation Final Report as described in the Voluntary Cleanup Program Guide. The purpose of this submission is to provide those missing components so that the Investigation phase of this potential remedial effort can be deemed complete.

This investigation addendum provides a detailed site summary referencing prior investigations of Landfill Six, a qualitative assessment of potential human contaminant pathways, monitoring well logs for each well referenced in this document, copies of all landfill gas sampling results and a map showing sampling locations, a site map showing the extent of fill disposal and the "site" as defined in

the agreement, and a discussion of special challenges faced in this site due to buried utilities and proximity to property lines.

2.0 SITE HISTORY, SOURCE AREA, AND DESCRIPTION

A previously completed report by EA Engineering (2001) summarizes that wastes were disposed of in various locations on the 324-acre HRPC parcel for more than 100 years. Wastes reportedly consisted primarily of household and commercial refuse and coal ash. Two petroleum spills have occurred on the 324-acre parcel in the past (spill numbers 9707019 and 9304993) and both have been closed Neither spill occurred in the location of Landfill Six.

Interviews with current and former employees (EA, 2001) indicate that in addition to municipal waste from the HRPC facility, Landfill Six may also contain coal ash from the heating plant, mixed construction debris from the HRPC facility, and potentially some municipal waste from the Town of Poughkeepsie (Figure 3). Air photo interpretation completed by EA (EA, 2001) identifies that no wastes had been deposited in Landfill Six in 1962 or 1964 photos, that some waste had been emplaced by 1966, and that waste emplacement had evidently ended by or before 1978.

According to EA (EA, 2001), three PCB remedial actions have been completed by LMS near and downstream from Landfill Six (as presently defined), pursuant to an Order on Consent with NYSDEC.

- May 1996: PCBs in a storm sewer system downstream from Landfill Six were removed.

- December 1997: PCBs in stream sediments between Landfill Six and NYS Route 9 were removed and disposed of off-site. The streambed and associated wetlands were restored. A Large Quantity Generator status was apparently secured for the PCB soil removal task (Information System ID: NYD980779490).

- July 1999: PCB-containing concrete under a transformer vault in a building on the parcel (the Cheney building) was removed.

- October 2002: NYSDEC provided a written record to the Hudson River Psychiatric Center that requirements have been met to delete the remediated area (DEC site # 314063) from the New York State Registry of Inactive Hazardous Waste Disposal Sites.

Within the presently defined boundaries of Landfill Six, EA Engineering sampled a leachate seep at Landfill Six in May of 2000 (Table 2). Iron and thallium were

detected in concentrations exceeding NYS surface water standards for Class D streams. In 2000, EA also located and sampled two of three monitoring wells installed by LMS in 1991 near Landfill Six. Well MWHR6-16 lies along the upgradient edge of the waste (Figure 2). Sampling identified only manganese in concentrations exceeding NYS GA groundwater standards (Table 2). Well MWHR6-19 lies downstream of the landfill in an area unrelated to the landfill and sampling identified iron, manganese, magnesium, sodium and chloride in concentrations above NYS GA groundwater standards. No VOCs were identified in either of these wells originally installed in 1991 by LMS (EA, 2001).

EA also advanced test pits at Landfill Six (EA, 2001). Observed materials in the test pits included municipal waste, lumber, bricks, coal ash, light gray ash, glass and bottles, pottery, shells, plastic objects, tires, paper and newspaper and metal objects including rakes and a lawn chair. Test pitting identified the general limits and depth of the wastes. EA estimated the landfill volume to be 33,460 cubic yards. Maximum observed waste thickness was 16 feet, extending to below the watertable (Figure 3). Test pitting indicated that the cap material consisted of sandy silt between 1 to 5 feet thick (EA, 2001). It is this area as defined by EA (2001) that comprises the Source Area for this Voluntary Cleanup action (Figure 4).

Three additional monitoring wells were subsequently installed at Landfill Six in April 2002 by EA (EA, 2002). Well MWHR6-22 was installed upgradient of the landfill (Figure 2) and sampling identified iron, manganese, sodium, chloride, color and TDS above NYS GA standards (Table 2). Wells MWHR6-20 and MWHR6-21 were installed downgradient of the landfill, adjacent to the creek. Sampling of Well MWHR6-20 identified iron, manganese, sodium, color, ammonia, and TDS in concentrations exceeding NYS GA standards (Table 2). Sampling of Well MWHR6-21 identified the exceedences similar to those in MWHR6-20 and also 7.1 ppb dichlorodifluoromethane (NYS GA standard is 5 ppb) and 1.6 ppb benzene (NYS GA standard is 0.7 ppb). The monitoring wells installed in downgradient locations also confirmed that wastes lie below the water table and below the elevation of the creek (Figure 5). Monitoring well logs are found in Appendix B.

In summary, the EA Engineering reports document the presence of groundwater within the waste mass at Landfill Six. Downgradient groundwater samples contain elevated iron, ammonia, color and TDS, VOCs in concentrations less than 2X GA standards. Leachate discharges to the stream consisting primarily of iron. Results from these previous investigations appear valid and useable on the basis of surveyed drawings, professional quality documentation, QA/QC adherence and complete data validation or of all investigation materials.

More recently, The Chazen Companies (TCC) conducted a limited additional site investigation in 2003/2004 to identify sources of water contributing to leachate

generation at Landfill Six (TCC, March 2004). The work included installation of bedrock wells near downgradient wells MWHR6-20 and MWHR6-21 to convert existing overburden wells to well couplets, installation of an upgradient overburden/bedrock couplet (MWHR6-23S/D), and replacement of monitoring well MWHR6-22 with MWHR6-22R per Department requirements conveyed previously to EA. Completion of the three overburden/bedrock couplet pairs allowed assessments of upward or downward gradients near the stream and upgradient of the landfill, as documented in the March 2004 Chazen report. Work also included installation of temporary 1-inch piezometers in downgradient areas near the stream to further evaluate watertable elevations and waste profiles and installation of shallow piezometers in the stream. Field work also included test pitting to inspect the condition of various culverts traversing the waste mass including a concrete stream culvert, a concrete stormwater culvert, and a corrugated iron pipe near the concrete stream culvert that previously have carried stream flows. All monitoring wells and seeps were sampled by Chazen consistent with protocols for routine landfill monitoring (Table 2). Monitoring well logs are found in Appendix B.

Inspection of the culverts indicated that only the concrete stream culvert is a reliable water conveyance. The other two pipes leak water into the landfill. Monitoring data, and water level measurements in stream piezometers, 1-inch piezometers and monitoring wells identify downward gradients in the aquifer and slight upward gradients in the stream bed (Chazen, March 2004). All hydrogeologic data suggest that current leachate discharges are supported by leakage into the waste mass from through the current capping material or from leaking water conveyance pipes. There is not hydraulic evidence that leachate is supported by aquifer discharges from a regional overburden or bedrock aquifer system.

Landfill gases were investigated by EA (2001). Test pitting logs show little to no putrescible wastes. Twenty two perimeter sampling sites are shown on Figure 3. Sampling results are shown on Table 3. Elevated explosive gas emissions were noted in two perimeter locations and so are judged to be localized. All other perimeter locations showed no or low percent Lower Explosive Limit (LEL) emissions. Oxygen levels were below atmospheric concentrations in approximately half of perimeter sampling locations. Low to no VOC emissions were noted.

3.0 INVESTIGATION ADDENDUM

3.1 Data Collection and Data Summary

Since the March 2004 TCC investigation, TCC in consultation with NYSDEC has also updated prior evaluations of the stream on the south side of the site by sampling surface water, soil samples, leachate precipitate and stream bottom sediments in the stream. The sediment samples collected under observation of NYSDEC focused on identifiable leachate precipitate, where observable. Analytes evaluated in the laboratory were specified in consultation with NYSDEC.

For overall stream characterization purposes, two leachate precipitate samples were collected upstream near another site landfill (Landfill Five) and three samples were collected at Landfill Six. Of these, sample HRPC-A6-SS1 was collected on a small mudflat deposit along the stream margin visibly discolored by leachate discharges (approx. ten feet upstream from SG-2, Figure 4). On the basis of visible characteristics, this sample would constitute the "worst case" soil sample in native soil areas near the stream. Sample HRPC-A6-SS2 consisted of leachate precipitate found suspended in the outlet of a small leachate seep (approx. ten feet downstream from SG-4, Figure 4, and at location of A6-LCH4 on Figure 2). Sample HRPC-A6-SS3 consisted of a downstream, general streambed sample (collected approx. 15 feet downstream from PZ-1, Figure 4). All samples were analyzed as soil samples although having varying moisture contents.

Sample results are summarized on Table 1. Laboratory data are included in Appendix A. In general, the samples containing pure leachate flocculant upstream of the site (samples HRPC-A5-SS1 and HRPC-A5-SS1A) and at the site (sample HRPC-A6-SS2) contained no analytes above remedial guidance values for Screening Contaminated Sediments (Table 1). The two additional samples which each included stream substrate material (HRPC-A6-SS1 and HRPC-A6-SS2) slightly exceed "moderate" impact guidance values for iron, mercury, arsenic and/or lead.

Open water stream samples collected near the headwall along the southeast site (near SG-1, Figure 4) margin and downstream where the stream leaves the landfill Six area (near PZ-1 on Figure 4). The samples identified sodium exceedences of Class D groundwater standards in both upstream and downstream samples, iron exceedences in both upstream and downstream samples (which become higher in the downstream sample), and dissolved an aluminum exceedence only in the upstream sample (Table 4).

3.2 Interpretation of Investigation Addendum Data

The two stream quality samples (Table 4) indicate that leachate discharges from Landfill Six contribute sufficient iron to this Class D stream to increase background (upstream) concentrations although both the upstream and downstream sample exceed Class D surface water standards. The downstream sample is less than 3 times the standard. Concentration of iron in the downstream sample suggests that impacts from leachate are not significant, as more elevated concentrations would be anticipated if a greater leachate volume were being emitted.

Ammonia and turbidity concentrations are increased to lesser degrees, as are color and manganese but these analytes do not exceed any published guidance or standards. No dissolved lead, arsenic, thallium or mercury was detected in either upstream or downstream stream samples although these metals were found in sediment samples or have been found previously in leachate.

The source of aluminum in the upstream stream water sample is unknown. The source of sodium and chloride in both upstream and downstream samples may be associated with road deicing activities. Iron in the upstream sample may be associated with leachate discharges from upstream landfills. The increase in iron concentrations as the stream passes Landfill Six is attributed to Landfill Six leachate discharges.

The soil/sediment samples (Table 1) indicate that leachate precipitate does not by itself exceed moderate or severe guidance thresholds for contaminated sediments (HRPC-A5-SS1 and HRPC-A5-SS1A and sample HRPC-A6-SS2). However, where leachate precipitate has impacted natural soils, precipitate concentrations slightly exceed moderate impact guidance thresholds for lead, arsenic and mercury and generally exceed moderate or severe guidance for iron. There is a marked decrease in concentrations from SS1 upstream to SS3 downstream, suggesting that impacts are mitigated with distance from leachate emission points, such that the downstream sediments are below moderate impacts guidance values for all metals except arsenic which is close to guidance levels and iron.

4.0 QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT

The exposure setting at Landfill Six consists of primarily buried construction wastes and ash from a coal-fired ash plant. Little to no putrescible waste or excessive wood waste was noted in test pits. The waste is currently graded and covered with mixed soils, graded ash and/or paved surfaces. Leachate generated by water movement through the wastes reaches the stream flowing in an open bed along the southern site margin, either by direct migration through the aquifer to the stream on the property, or by migrating first through property of others in the southwest corner of the site, also underlaid by wastes before reaching the off-site plume.

This qualitative human health exposure assessment considers the future property use scenario since the current use scenario is transitional. The potential future use scenario would utilize the site as a parking lot with adjacent accessible perimeter lands. Nearby buildings would be used for residences. Access to the perimeter lands including the stream would not be restricted in the future.

Exposure media to which individuals may be exposed include waste, sediment by the creek impacted by leachate precipitate, landfill gas, groundwater and surface water including leachate. Exposure pathways for each of these media are summarized on Table 5 and discussed further below.

Exposure to Solid Waste: Exposure to all buried solid waste is currently limited due to the presence of informal cover materials on the landfill footprint. The only area with exposed waste is found in the southeast corner of the site where waste is exposed in the stream bank. A complete exposure pathway exists at the stream bank location only. A "low risk" exposure risk status is assigned due to the limited size of the exposed are and the generally low human health hazard attributable to exposure to non-putrescible mixed municipal waste.

Exposure to Groundwater: No groundwater wells used for potable purposes are known to exist in the area. There is therefore no known exposure pathway to groundwater and the exposure risk status is "none."

Exposure to Landfill Gas: Only 2 of 22 gas collection points identified elevated explosive gases (Table 3) indicating presence only of localized gas generation. Test pitting conducted by EA (2001) and Chazen (2004) identified limited quantities of putrescible or wood wastes likely to generate excessive landfill gas emissions. Any landfill gas would migrate generally upward through the waste mass, resulting in an inhalation or explosive hazard over the landfill area. A "low risk" exposure risk status is assigned due to the limited overall size of the landfill, the limited fraction

of waste prone to landfill gas decomposition processes, and the immediate opportunity for dilution of any landfill gas emissions once they mix with the atmosphere.

Exposure to Streambank Sediments Impacted by Leachate: Two areas along the creek bank exhibit soils that have accumulated visible concentrations of leachate precipitate. The two areas total approximately 40 square feet. A sediment sample from the most heavily stained soil area identified arsenic, lead and mercury modestly exceeding "moderate impact" sediment screening guidance values (Table 1 Sample HRPC-A6-SS1). The most likely exposure threat to human health from these limited areas is dermal since the location is not amenable to ingestion by playing children. A "low" exposure risk status is assigned to these visibly contaminated sediments on the stream bank because of their limited areal extent and the only modest exceedence of the "moderate impact" screening guidance value.

Exposure to Surface water and Stream Sediments: Pure leachate precipitate sampled at the site identified no "moderate impact" exceedences under sediment screening guidance values (Table 1, Sample HRPC-A6-SS2). Surface water samples also demonstrated that iron is the only analyte exceeding standards for Class D streams which is amplified as the stream flows past the site (Table 4). Thallium was not detected in either stream sample (Table 4). A streambed sediment sample (Table 1, Sample HRPC-A6-SS3) collected near the downstream property margin identified only arsenic slightly exceeding the "moderate impact" sediment screening guidance value although streambank sediments containing various elevated metals at higher levels (Table 1 Sample HRPC-A6-SS1), demonstrating a decreasing downstream analyte concentration in streambottom characteristics.

These data show that a complete exposure pathway exists in this area, but that taken in their totality, a "low" exposure risk status is warranted for the stream water and streambottom sediments because arsenic only slightly exceeds sediment threshold guidance values in the stream and its concentration is decreased from the upstream sample, and because pure leachate precipitate and stream water samples contain exceedences only of compounds that pose low threat levels to human health (e.g. iron, ammonia, sodium).

This Qualitative Human Health Exposure Assessment concludes that exposure pathways from solid waste, landfill gas, sediments along the stream bank, and streamwater/streambottom sediments exist at this site. Although exposure risk levels for each complete exposure pathway are judged to be low, a proposed Remedial Action Work Plan should consider measures to further limit the exposure risk levels. Primary consideration is warranted for measures to reduce leachate transmission to the stream so leachate-related exposures in and by the stream can

decrease over time. Any areas with exposed solid waste should also be contained or otherwise controlled, and the limited quantities of landfill gas should be managed.

5.0 SPECIAL CHALLENGES AT THE SITE

The site will face some challenges when implementing remedies due to the following:

Property Lines: Waste boundaries defined by EA (2001) extend west and south past the property boundaries of the Hudson River Psychiatric Center site. To extend a remedy beyond these property lines is beyond the technical responsibility of a VCP volunteer. In the southwest corner of the Landfill Six Site, near MWHR6-20S/20D, groundwater migrating through the landfill passes off-site before discharging as leachate to the stream (Figure 4).

Utilities: Waste boundaries defined by EA (2001) extend south onto lands owned or leased by a gas utility. Buried gas line markers are visible on this easement. To extend the remedy beyond the property lines proposed for purchase by the Volunteer, particularly onto lands with buried utilities is beyond the technical responsibility of a VCP volunteer. One or more electric power poles are also installed in the waste mass along the east property line and terminate partway up the east property line. It appears that no power is being used from this line extension. The Volunteer would seek precise property ownership of the poles and suggest that they be removed from service (Figure 4).

Existing culverts and drains: A stream which flows through Landfill Six has been channelized in a culvert which has been confirmed to be fully intact with only one insubstantial leak during a prior and recent investigation (Chazen, March 2004). It does not appear readily feasible or warranted to modify this arrangement for the stream passing through the site. Grades on the east side of the railroad embankment are not amenable to routing the stream on the east side of the former rail bed (Figure 4).

Three other culverts and drains flowing into or through the waste mass were previously investigated (Chazen, March 2004) and found to be either compromised such that they leak water into the waste mass, or were of limited service value. These should either be upgraded, or grouted or otherwise abandoned in place.

Wetlands and Steep Slopes: An existing stream lies along the south property line. It is bounded by an approximate 5 to 10 foot steep slope drop-off along the margins of the creek and wetland type vegetation is found along the stream. Heavy vegetation, including mature trees, grows on the steep bank and provides a vegetated buffer along the south property line and adjacent parcels. A natural area benefit would be achieved if a remedy can be devised which does not disturb the riparian wetland vegetation or the mature trees.

External Influences: Various off-site features may complicate interpretation of environmental conditions at this site. Use of de-icing chemicals elsewhere on the property may contribute to sodium and chloride noted in most monitoring wells at Landfill Six. It is not believed the sodium or chloride originates from any concentrated points of introduction at the site itself since all pavement penetrations were grouted and sealed during recent boring programs and monitoring well installation efforts.

No other site conditions which would limit implementation of a Voluntary remedial action in on the site are noted.

6.0 QUALITY ASSURANCE/QUALITY CONTROL

Prior investigations conducted by EA (2001, 2002) contain the majority of laboratory data collected from Landfill Six, including leachate characterization, and shallow groundwater monitoring well data. These investigations included duplicate and trip blank and other QA/QC samples as well as data validation, as documented in those reports. Earlier, broader Landfill Six evaluations conducted when PCBs were investigated and remediated downstream from the present site (e.g. LMS, 1996) were also conducted under careful QA/QC sampling conditions and contained validated data.

More recent sampling conducted by Chazen (March 2004) and the present data presented herein were collected primarily to identify source of groundwater recharge into the landfill and so responded to a focused technical question of water flux rather than waste delineation. QA/QC measures included preparation of a work plan for NYSDEC review detailing the locations and proposed sampling to be conducted at each existing or new monitoring location, collection of all samples under Chain of Custody procedures, and oversight of all field activities by trained geologists.

7.0 DATA USABILITY SUMMARY REPORT

Prior investigations conducted by EA (2001, 2002) contain the majority of laboratory data collected from Landfill Six, including leachate characterization, and shallow groundwater monitoring well data. Data in these reports were subjected to data validation, as documented in those reports. Earlier, broader Landfill Six evaluations conducted when PCBs were investigated and remediated downstream from the present site (e.g. LMS, 1996) also contained validated data.

More recent work conducted by Chazen (2004) was conducted without data validation or requests for data packets that would allow Data Usability Summary Reports (DUSRs) since Chazen's investigation focused primarily on understanding patterns of groundwater flow through Landfill Six rather than waste characterization. Samples collected from new monitoring wells clarified the significance of but did not challenge data conclusions of the EA (2001; 2002) validated data.

Most recent sampling conducted by Chazen (July 2004) was completed under direct field observation of NYSDEC staff, so although no DUSR was prepared for the limited number of surfacewater and sediment samples, significant QA/QC oversight exists to document sample collection methods.

8.0 REFERENCES

Chazen Companies, March 2004, Hudson River Psychiatric Center Landfill Area 6 Supplemental Closure Investigation Report.

EA Engineering, P.C. et al, January 2001, Landfill Characterization Investigation Report Areas 1, 2, 3, 5, 6, 7, and 8 Hudson River Psychiatric Center, Poughkeepsie, NY.

EA Engineering, P.C. et al, July 2002, Landfill Closure Investigation Report Landfill Areas 1, 2, 3, 6 and 8 Hudson River Psychiatric Center, Poughkeepsie, NY.

LMS, 1996, Remedial Investigation of Area 6 PCB Site at Hudson River Psychiatric Center Poughkeepsie, NY NYDEC ID No. 3-14-063.

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Tables

Table 1 - Landfill Six
Stream Sediment/Leachate Precipitate Samples
Collected July 12, 2004

Analyte	Unit	Technical Guidance for Screening Contaminated Sediments (moderate impact)	Technical Guidance for Screening Contaminated Sediments (severe impact)	TAGM 4046 Background	Recommended TAGM 4046 Cleanup	HRRC-A5-SS1	HRRC-A6-SS1A	HRRC-A6-SS1	HRRC-A6-SS2	HRRC-A6-SS3
						Landfill 5 seep background	Landfill 5 seep background	Landfill 6 upstream seep area	Landfill 6 downstream flowing seep	Landfill 6 downstream sediment
						Leachate Floc in stream bed	Leachate Floc in stream bed	Iron stained soil on floodplain	Leachate Floc in stream bed	Stream Sediment
						lab results reported in mg/kg				
aluminum	ppm	NS	NS	33,000	background	50.0	22.8	3,840	1,100	7,630
iron	ppm	20,000	40,000	2,000 - 550,000	2,000 or background	2,180	2,050	42,900	9,790	26,100
manganese	ppm	460	1100	50-5,000	background	16.6	9.62	391	121	426
silica	NS	NS	NS	NS	NS	na	na	na	na	na
mercury	ppm	0.15	1.3	0.001 - 0.2	0.1	nd	nd	0.17	nd	0.11
arsenic	ppm	6	33	3.0 - 12	7.5 or background	0.342	0.275	9.57	1.6	6.95
lead	ppm	31	110	200-500*	background	0.337	0.194	41.5	19.6	24.6
TOC	NS	NS	NS	NS	NS	940	nd	30000	3300	8700

* background values for suburban/metropolitan areas
NS No Standard

Table 2 - Groundwater Quality Data

Hudson River Psychiatric Center, Landfill Area 6

		General Location	UPGRADIENT FROM LANDFILL						OFF-SITE	
		Client Sample ID	MWHR6-16	MWHR6-16	MWHR6-22R	MWHR6-22	MWHR6-23S	MWHR6-23D	MWHR6-19	MWHR6-19
		Lab	York	CHEMTECH	York	CHEMTECH	York	York	York	CHEMTECH
		Lab Sample ID	03070846-08	L8330ASP-021850	03070846-03	P2144-06	03070846-04	03070846-05	03070846-07	L8330ASP-021848
		Date Sampled	7/29/2003	5/11/2000	7/29/2003	4/10/2002	7/29/2003	7/29/2003	7/29/2003	5/11/2000
		NYCRR Part 360 List	Routine	Baseline	Baseline	Baseline	Baseline	Baseline	Routine	Baseline
		Sampled By	TCC	EA ENGINEERING	TCC	ENGINEERING	TCC	TCC	TCC	EA ENGINEERING
PARAMETERS	STANDARDS	UNIT	Results	Results	Results	Results	Results	Results	Results	Results
FIELD PARAMETERS										
Temperature	ns	degrees celcius	14.6	14.0	16.7	14.54	18.2	16.0	14.6	12.72
CONDUCTIVITY	ns	umhos/cm	na	0.785	na	4.38	na	na	na	2.8
pH	ns	units	7.53	7.08	7.12	6.54	7.09	7.86	7.53	7.05
TURBIDITY (visual)	ns		clear	0	clear	163	clear	clear	clear	20.0
LEACHATE INDICATORS										
TOTAL KJELDAHL NITROGEN	ns	mg/L		nd@1.0	3	4	1	1		nd@1.0
AMMONIA	2,000	ug/L	nd@50	nd@200	710	800	nd@50	nd@50	nd@50	440
NITRATE	10,000	ug/L	nd@50	nd@50	nd@50	nd@50	240	nd@50	370	nd@50
C.O.D	ns	ug/L	24,000		134,000	500	39,000	110,000	39,000	
B.O.D. (5-DAY)	ns	mg/L			8.0	3	1.0	1.0		
TOTAL ORGANIC CARBON	ns	mg/L	1.9	2.9	4.1	2.1	nd@1.0	1.4	1.2	2.4
TOTAL DISSOLVED SOLIDS	ns	mg/L	500	330	2,864	3,400	707	636	1,916	1,100
TURBIDITY (analytical)	ns	NTU	na		116.00		0.34	2.30	na	
SULFATE	250,000	ug/L	65,400	34,000	49,100	39,000	75,800	97,900	62,500	45,000
ALKALINITY AS CaCO3	ns	mg/L		250		400				350
ALKALINITY-TOTAL [2]		mg/l	280						188	
PHENOLS, TOTAL	1	ug/L	nd@50	24	nd@50	nd@2.5	nd@50	nd@50	nd@50	nd
CHLORIDE	250,000	ug/L	67,400	43,000	1,310,000	1,400,000	224,000	160,000	446,000	660,000
BROMIDE	2,000	ug/L	nd@200	nd@1.0	300	nd@1	nd@200	nd@200	360	nd@1.0
HARDNESS, TOTAL	ns	mg/L CaCO3	305	280	771	880	301	313	690	890
COLOR	ns	Pt-Co units		10	300	66	1	5		25
BORON	1,000	ug/L				18				
INORGANIC PARAMETERS										
ALUMINUM	100	ug/L		181	56	nd@7.3	18	30		244
ANTIMONY	2	ug/L		nd@24.3	nd@8	nd@4.7	nd@8	nd@8		nd@24.3
ARSENIC	25	ug/L		5	nd@10	nd@2.8	nd@10	nd@10		7.0
BARIUM	ns	ug/L		56	189	144	36	216		762
BERYLLIUM	3**	ug/L		1	nd@1	nd@0.10	nd@1	nd@1		nd@1.0
CADMIUM	5	ug/L	nd@5	1	nd@3	nd@0.40	nd@3	nd@3	nd@5	1
CALCIUM	ns	ug/L	105,000	97,200	250,000	283,000	95,500	97,400	208,000	273,000
CHROMIUM	5	ug/L		3	6	nd@0.60	nd@5	nd@5		nd
CHROMIUM, HEXAVALENT	5	ug/L		nd	nd@10	nd@10	nd@10	nd@10		nd
COBALT	5	ug/L		3	nd@5	8	nd@5	nd@5		11
COPPER	200	ug/L		nd	nd@6	3	nd@6	nd@6		nd
CYANIDE, TOTAL	200	ug/L			nd@10	nd@10	nd@10	nd@10		
IRON	300	ug/L	12	197	14,000	4,850	nd@5	143	nd@5	1,400
LEAD	25	ug/L	nd@5	4.0	5	nd@2.1	nd@3	nd@3	nd@5	1
MAGNESIUM	35000**	ug/L	10,600	9,540	35,600	43,100	15,300	17,100	41,400	49,000
MANGANESE	300	ug/L	81	579	6,410	6,270	135	227	nd@5	407
MERCURY	1	ug/L		0.10	nd@0.2	nd@0.20	nd@0.2	nd@0.2		nd@0.10
NICKEL	100	ug/L		7	nd@9	nd@1.8	nd@9	nd@9		4

Table 2 - Groundwater Quality Data

Hudson River Psychiatric Center, Landfill Area 6

		General Location	UPGRADIENT FROM LANDFILL						OFF-SITE	
		Client Sample ID	MWHR6-16	MWHR6-16	MWHR6-22R	MWHR6-22	MWHR6-23S	MWHR6-23D	MWHR6-19	MWHR6-19
		Lab	York	CHEMTECH	York	CHEMTECH	York	York	York	CHEMTECH
		Lab Sample ID	03070846-03	L8330ASP-021850	03070846-03	P2144-06	03070846-04	03070846-05	03070846-07	L8330ASP-021848
		Date Sampled	7/29/2003	5/11/2000	7/29/2003	4/10/2002	7/29/2003	7/29/2003	7/29/2003	5/11/2000
		NYCRR Part 360 List	Routine	Baseline	Baseline	Baseline	Baseline	Baseline	Routine	Baseline
		Sampled By	TCC	EA ENGINEERING	TCC	ENGINEERING	TCC	TCC	TCC	EA ENGINEERING
PARAMETERS	STANDARDS	UNIT	Results	Results	Results	Results	Results	Results	Results	Results
POTASSIUM	ns	ug/L	**10,400**	**835**	**91,100**	**8,070**	**10,300**	**37,100**	**18,600**	**2**
SELENIUM	10	ug/L		**1**	nd@10	nd@3.0	nd@10	nd@10		**4**
SILVER	50	ug/L		**1.1**	nd@3	nd@1.0	nd@3	nd@3		nd@1.1
SODIUM	20,000	ug/L	**20,400**	**15,300**	**59,300**	**543,000**	**50,500**	**35,800**	**56,600**	**115,000**
THALLIUM	0.5	ug/L		nd	nd@10	**5**	nd@10	nd@10		nd
VANADIUM	ns	ug/L		nd@10	nd@5	**0.70**	nd@5	nd@5		nd
ZINC	2000**	ug/L		**30.0**	**21**	**41.0**	**13**	**12**		**24**
ORGANIC PARAMETERS										
1,1,1,2-TETRACHLOROETHANE	*	ug/L		nd@10		nd@1.5				nd@10
1,1,1-TRICHLOROETHANE	*	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
1,1,2,2-TETRACHLOROETHANE	*	ug/L		nd@10	nd@1	nd@2.2	nd@1	nd@1		nd@10
1,1,2-TRICHLOROETHANE	1	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
1,1-DICHLOROETHANE	*	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
1,1-DICHLOROETHYLENE	*	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
1,1-DICHLOROPROPYLENE	*	ug/L			nd@1		nd@1	nd@1		
1,2,3-TRICHLOROBENZENE	*	ug/L			nd@1	nd@1.6	nd@1	nd@1		
1,2,3-TRICHLOROPROPANE	nd	ug/L		nd@10	nd@1	nd@2.2	nd@1	nd@1		nd@10
1,2,3-TRIMETHYLBENZENE	*	ug/L			nd@1		nd@1	nd@1		
1,2,4-TRICHLOROBENZENE	*	ug/L			nd@1	nd@1	nd@1	nd@1		
1,2,4-TRIMETHYLBENZENE	*	ug/L			nd@1	nd@1	nd@1	nd@1		
1,2-DIBROMO-3-CHLOROPROPANE	nd	ug/L		nd@10	nd@1	nd@2.1	nd@1	nd@1		nd@10
1,2-DIBROMO-3-CHLOROPROPANE	nd	ug/L		nd@10		nd@2.1				nd@10
1,2-DIBROMOETHANE	ns	ug/L		nd@10	nd@1	nd@1	nd@1	nd@1		nd@10
1,2-DICHLOROBENZENE	3	ug/L		nd@10	nd@1	nd@1	nd@1	nd@1		nd@10
1,2-DICHLOROETHANE	1	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
1,2-DICHLOROETHYLENE (TOTAL)	*	ug/L			nd@1		nd@1	nd@1		
1,2-DICHLOROPROPANE	1	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
1,3,5-TRIMETHYLBENZENE	*	ug/L			nd@1	nd@1	nd@1	nd@1		
1,3-DICHLOROBENZENE	3	ug/L		nd@10	nd@1	nd@1	nd@1	nd@1		nd@10
1,3-DICHLOROPROPANE	*	ug/L			nd@1		nd@1	nd@1		
1,4-DICHLOROBENZENE	3	ug/L		nd@10	nd@1	nd@1	nd@1	nd@1		nd@10
1-CHLOROHEXANE	ns	ug/L			nd@1		nd@1	nd@1		
2,2-DICHLOROPROPANE	*	ug/L			nd@1		nd@1	nd@1		
2-BUTANONE	ns	ug/L		nd@10						nd@10
2-CHLOROETHYL VINYL ETHER	ns	ug/L				nd@9.6				
2-CHLOROTOLUENE	*	ug/L			nd@1	nd@1	nd@1	nd@1		
2-HEXANONE	50	ug/L		nd@10		nd@12				nd@10
4-CHLOROTOLUENE	*	ug/L			nd@1	nd@1	nd@1	nd@1		
4-METHYL-2-PENTANONE	ns	ug/L		nd@10						nd@10
ACETONE	50	ug/L		nd@10		nd				nd@10
ACROLEIN	*	ug/L				nd@43				
ACRYLONITRILE	ns	ug/L		nd@50		nd@7.5				nd@50

Table 2 - Groundwater Quality Data

Hudson River Psychiatric Center, Landfill Area 6

		General Location	UPGRADIENT FROM LANDFILL						OFF-SITE	
		Client Sample ID	MWHR6-16	MWHR6-16	MWHR6-22R	MWHR6-22	MWHR6-23S	MWHR6-23D	MWHR6-19	MWHR6-19
		Lab	York	CHEMTECH	York	CHEMTECH	York	York	York	CHEMTECH
		Lab Sample ID	03070846-08	L8330ASP-021850	03070846-03	P2144-06	03070846-04	03070846-05	03070846-07	L8330ASP-021848
		Date Sampled	7/29/2003	5/11/2000	7/29/2003	4/10/2002	7/29/2003	7/29/2003	7/29/2003	5/11/2000
		NYCRR Part 360 List	Routine	Baseline	Baseline	Baseline	Baseline	Baseline	Routine	Baseline
		Sampled By	TCC	EA ENGINEERING	TCC	ENGINEERING	TCC	TCC	TCC	EA ENGINEERING
PARAMETERS	STANDARDS	UNIT	Results	Results	Results	Results	Results	Results	Results	Results
BENZENE	1	ug/L		nd@10	nd@1	nd@1	nd@1	nd@1		nd@10
BROMOBENZENE	*	ug/L			nd@1	nd@1	nd@1	nd@1		
BROMOCHLOROMETHANE	*	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
BROMODICHLOROMETHANE	50	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
BROMOFORM	ns	ug/L		nd@10	nd@1	nd@1	nd@1	nd@1		nd@10
BROMOMETHANE	*	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
CARBON DISULFIDE	ns	ug/L		nd@10						nd@10
CARBON TETRACHLORIDE	*	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
CHLOROBENZENE	*	ug/L		nd@10	nd@1	nd@1	nd@1	nd@1		nd@10
CHLOROETHANE	*	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
CHLOROFORM	7	ug/L		nd@10	nd@1		1	nd@1		nd@10
CHLOROMETHANE	ns	ug/L		nd@10	nd@1	nd@1.5	nd@1	nd@1		nd@10
CIS-1,2-DICHLOROETHENE	*	ug/L		nd@10						nd@10
CIS-1,3-DICHLOROPROPYLENE	¹	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
DIBROMOCHLOROMETHANE	*	ug/L		nd@10	nd@1	nd@1	nd@1	nd@1		nd@10
DIBROMOMETHANE	*	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
DICHLORODIFLUOROMETHANE	*	ug/L			nd@1		nd@1	nd@1		
ETHYLBENZENE	*	ug/L		nd@10	nd@1	nd@1.5	nd@1	nd@1		nd@10
HEXACHLOROBUTADIENE	1	ug/L			nd@1	nd@1	nd@1	nd@1		
ISOPROPLYBENZENE	*	ug/L			nd@1	nd@1	nd@1	nd@1		
ISOPRPYLBENZENE	*	ug/L				nd@1				
METHYL tert-BUTYL ETHER (MTBE)	10	ug/L			3	2	nd@1	nd@1		
METHYLENE CHLORIDE	*	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
NAPHTHALENE	20**	ug/L			nd@1	nd@1	nd@1	nd@1		
n-BUTYLBENZENE	*	ug/L			nd@1	nd@1	nd@1	nd@1		
n-PROPYLBENZENE	*	ug/L			nd@1	nd@1	nd@1	nd@1		
o-XYLENE	*	ug/L		nd@10	nd@1	nd@1.7	nd@1	nd@1		nd@10
p- & m-XYLENES	*	ug/L		nd@10	nd@1	nd@1.5	nd@1	nd@1		nd@10
p-ISOPROPYLTOLUENE	*	ug/L			nd@1	nd@1	nd@1	nd@1		
sec-BUTYLBENZENE	*	ug/L			nd@1	nd@1	nd@1	nd@1		
STYRENE	*	ug/L		nd@10	nd@1	nd@1	nd@1	nd@1		nd@10
tert-BUTYLBENZENE	*	ug/L			nd@1	nd@1	nd@1	nd@1		
TETRACHLOROETHYLENE	*	ug/L		nd@10	nd@1	nd@1.6	nd@1	nd@1		nd@10
TOLUENE	*	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
TRANS-1,2-DICHLOROETHENE	*	ug/L		nd@10						nd@10
TRANS-1,3-DICHLOROPROPYLENE	¹	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
TRICHLOROETHYLENE	*	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
TRICHLOROFLOUROMETHANE	*	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10
VINYL ACETATE	ns	ug/L		nd@10						nd@50
VINYL CHLORIDE	2	ug/L		nd@10	nd@1		nd@1	nd@1		nd@10

Table 2 - Groundwater Quality Data

Hudson River Psychiatric Center, Landfill Area 6

		General Location	DOWNGRADIENT FROM LANDFILL							
		Client Sample ID	MWHR6-20S	MWHR6-20S	MWHR6-20D	MWHR6-21S	MWHR6-21S	MWHR6-21D	Seep	Seep
		Lab	York	CHEMTECH	York	York	CHEMTECH	York	Chemtech	York
		Lab Sample ID	03070846-06	P2144-01	03070846-01	03070846-09	P2144-03	03070846-02	21849S	0401434-01
		Date Sampled	7/29/2003	4/10/2002	7/29/2003	7/29/2003	4/10/2002	7/29/2003	5/11/2000	1/20/2004
		NYCRR Part 360 List	Routine	Baseline	Baseline	Routine	Baseline	Baseline	Baseline	Routine
		Sampled By	TCC	EA ENGINEERING	TCC	TCC	EA ENGINEERING	TCC	EA Engineering	TCC
PARAMETERS	STANDARDS	UNIT	Results	Results	Results	Results	Results	Results	Results	Results
FIELD PARAMETERS										
Temperature	ns	degrees celcius	18.9	9.96	12.7	13.4	10.43	12.4		6.6
CONDUCTIVITY	ns	umhos/cm	na	1.50	na	na	1.24	na		580
pH	ns	units	6.81	6.48	7.59	7.14	6.55	7.64		6.94
TURBIDITY (visual)	ns		clear	na	clear	clear	8	clear		clear
LEACHATE INDICATORS										
TOTAL KJELDAHL NITROGEN	ns	mg/L		11	1		9.0	1	1	
AMMONIA	2,000	ug/L	95,000	4,200	nd@50	39,400	5,400	nd@50	390	770
NITRATE	10,000	ug/L	nd@50	nd@50	nd@50	nd@50	nd@50	90	nd @ 500	50
C.O.D	ns	ug/L	24,000	23,000	nd@10000	39,000	2,000	16,000	15,000	14
B.O.D. (5-DAY)	ns	mg/L		38	1.0		7	nd@1.0	4	
TOTAL ORGANIC CARBON	ns	mg/L	13	17	nd@1.0	6.4	5.3	1.6	4.1	2.4
TOTAL DISSOLVED SOLIDS	ns	mg/L	816	1,500	508	657	720	440	510	300
TURBIDITY (analytical)	ns	NTU	na		11.30	na		5.06		9.26
SULFATE	250,000	ug/L	14,900	52,000	66,900	60	1,500	65,500	250,000	17,800
ALKALINITY AS CaCO3	ns	mg/L		520			420		350	
ALKALINITY-TOTAL [2]		mg/l								214
PHENOLS, TOTAL	1	ug/L	nd@50	nd@2.5	nd@50	nd@50	nd@2.5	nd@50	28	nd@50
CHLORIDE	250,000	ug/L	27,400	130,000	133,000	259,000	140,000	48,800	210,000	16,200
BROMIDE	2,000	ug/L	300	nd@1	nd@200	nd@200	nd@1	nd@200	nd @ 1000	
HARDNESS, TOTAL	ns	mg/L CaCO3	639	450	304	277	360	305	1,000	217
COLOR	ns	Pt-Co units		480	50		420	20	5	
BORON	1,000	ug/L		18			60			
INORGANIC PARAMETERS										
ALUMINUM	100	ug/L		nd@7.3	40		67	24	1,740	
ANTIMONY	2	ug/L		nd@4.7	nd@8		nd@4.7	nd@8		
ARSENIC	25	ug/L		nd@2.8	nd@10		nd@2.8	nd@10	13	
BARIUM	ns	ug/L		163	166		393	26	482	
BERYLLIUM	3**	ug/L		nd@0.10	nd@1		nd@0.10	nd@1		
CADMIUM	5	ug/L	nd@5	nd@0.40	nd@3	nd@5	nd@0.40	nd@3	nd @ 1.3	nd@5
CALCIUM	ns	ug/L	205,000	139,000	99,100	86,100	113,000	105,000	110,000	73,900
CHROMIUM	5	ug/L		nd@0.60	nd@5		1	nd@5	nd @1.3	
CHROMIUM, HEXAVALENT	5	ug/L		nd@10	nd@10		nd@10	nd@10	nd @ 0.01	
COBALT	5	ug/L		5	nd@5		0.60	nd@5	5	
COPPER	200	ug/L		nd@0.90	nd@6		3	nd@6	20	
CYANIDE, TOTAL	200	ug/L		nd@10	nd@10		nd@10	nd@10	nd @ 10	
IRON	300	ug/L	40,300	18,900	1,500	32,600	58,700	664	178,000	6,880
LEAD	25	ug/L	nd@5	3.0	nd@3	nd@5	nd@2.1	nd@3	35	nd@5
MAGNESIUM	35000**	ug/L	30,900	26,000	13,600	15,000	19,200	10,300	14,700	7,840
MANGANESE	300	ug/L	10,500	3,230	445	12,000	1,250	114	4,310	634
MERCURY	1	ug/L		nd@0.20	nd@0.2		nd@0.20	nd@0.2		
NICKEL	100	ug/L		9	nd@9		nd@1.8	nd@9	nd @ 1	

Table 2 - Groundwater Quality Data

Hudson River Psychiatric Center, Landfill Area 6

		General Location	DOWNGRADIENT FROM LANDFILL							
		Client Sample ID	MWHR6-20S	MWHR6-20S	MWHR6-20D	MWHR6-21S	MWHR6-21S	MWHR6-21D	Seep	Seep
		Lab	York	CHEMTECH	York	York	CHEMTECH	York	Chemtech	York
		Lab Sample ID	03070846-06	P2144-01	03070846-01	03070846-09	P2144-03	03070846-02	21849S	0401434-01
		Date Sampled	7/29/2003	4/10/2002	7/29/2003	7/29/2003	4/10/2002	7/29/2003	5/11/2000	1/20/2004
		NYCRR Part 360 List	Routine	Baseline	Baseline	Routine	Baseline	Baseline	Baseline	Routine
		Sampled By	TCC	EA ENGINEERING	TCC	TCC	EA ENGINEERING	TCC	EA Engineering	TCC
PARAMETERS	STANDARDS	UNIT	Results	Results	Results	Results	Results	Results	Results	Results
POTASSIUM	ns	ug/L	26,300	12,600	10,800	83,300	4,340	93,600	3,610	1,540
SELENIUM	10	ug/L		nd@3.0	nd@10		nd@3.0	nd@10	9	
SILVER	50	ug/L		nd@1.0	nd@3		nd@1.0	nd@3		
SODIUM	20,000	ug/L	22,800	90,600	28,800	85,400	65,000	17,400	106,000	7,540
THALLIUM	0.5	ug/L		nd@5.4	nd@10		5	nd@10	26	
VANADIUM	ns	ug/L		nd@0.70	nd@5		0.70	nd@5	15	
ZINC	2000**	ug/L		54	18		40	14	96	
ORGANIC PARAMETERS										
1,1,1,2-TETRACHLOROETHANE	*	ug/L		nd@1.5			nd@1.5		nd @ 10	
1,1,1-TRICHLOROETHANE	*	ug/L		nd@1.5	nd@1		nd@1.5	nd@1		
1,1,2,2-TETRACHLOROETHANE	*	ug/L		nd@1.5	nd@1		nd@2.2	nd@1	nd @ 10	
1,1,2-TRICHLOROETHANE	1	ug/L		nd@1.1	nd@1		nd@1.1	nd@1		
1,1-DICHLOROETHANE	*	ug/L		nd@1	nd@1		nd@1	nd@1		
1,1-DICHLOROETHYLENE	*	ug/L		nd@1.6	nd@1		nd@1.6	nd@1		
1,1-DICHLOROPROPYLENE	*	ug/L		nd@1.3	nd@1		nd@1.3	nd@1		
1,2,3-TRICHLOROBENZENE	*	ug/L		nd@1.6	nd@1		nd@1.6	nd@1		
1,2,3-TRICHLOROPROPANE	nd	ug/L		nd@2.2	nd@1		nd@2.2	nd@1	nd @ 10	
1,2,3-TRIMETHYLBENZENE	*	ug/L			nd@1		nd@1	nd@1		
1,2,4-TRICHLOROBENZENE	*	ug/L		nd@1	nd@1		nd@1	nd@1		
1,2,4-TRIMETHYLBENZENE	*	ug/L		nd@1	nd@1		nd@1	nd@1		
1,2-DIBROMO-3-CHLOROPROPANE	nd	ug/L		nd@2.1	nd@1		nd@2.1	nd@1		
1,2-DIBROMO-3-CHLOROPROPANE	nd	ug/L		nd@2.1			nd@2.1		nd @ 10	
1,2-DIBROMOETHANE	ns	ug/L		nd@1	nd@1		nd@1	nd@1		
1,2-DICHLOROBENZENE	3	ug/L		nd@1	nd@1		nd@1	nd@1	nd @ 10	
1,2-DICHLOROETHANE	1	ug/L		nd@2.5	nd@1		nd@2.5	nd@1		
1,2-DICHLOROETHYLENE (TOTAL)	*	ug/L			nd@1			nd@1		
1,2-DICHLOROPROPANE	1	ug/L		nd@3.6	nd@1		nd@3.6	nd@1		
1,3,5-TRIMETHYLBENZENE	*	ug/L		nd@1	nd@1		nd@1	nd@1		
1,3-DICHLOROBENZENE	3	ug/L		nd@1	nd@1		nd@1	nd@1	nd @ 10	
1,3-DICHLOROPROPANE	*	ug/L		nd@1	nd@1		nd@1	nd@1		
1,4-DICHLOROBENZENE	3	ug/L		nd@1	nd@1		nd@1	nd@1	nd @ 10	
1-CHLOROHEXANE	ns	ug/L			nd@1			nd@1		
2,2-DICHLOROPROPANE	*	ug/L		nd@1.1	nd@1		nd@1.1	nd@1		
2-BUTANONE	ns	ug/L					nd@5.6			
2-CHLOROETHYL VINYL ETHER	ns	ug/L		nd@9.6			nd@9.6			
2-CHLOROTOLUENE	*	ug/L		nd@1	nd@1		nd@1	nd@1		
2-HEXANONE	50	ug/L		nd@12			nd@12			
4-CHLOROTOLUENE	*	ug/L		nd@1	nd@1		nd@1	nd@1		
4-METHYL-2-PENTANONE	ns	ug/L					nd@3			
ACETONE	50	ug/L		13			nd@5.8			
ACROLEIN	*	ug/L		nd@43			nd@43			
ACRYLONITRILE	ns	ug/L		nd@7.5			nd@7.5		nd @ 50	

Table 2 - Groundwater Quality Data

Hudson River Psychiatric Center, Landfill Area 6

NOTES

[1]The standard for the sum of the CIS- and TRANS- isomers is 0.4 ug/L

[2]Reported "as CaCO3" for Chemtech data

* The principal organic contaminant standard for groundwater of 5 ug/L applies to this substance.

** The given number is a guidance value. No standard has been established.

A blank in the table indicates that the sample was not tested for that analyte.

Entries of the form "nd@" indicate that the analyte was not detected above the minimum detection level. The minimum detection level is given by the number following the ampersand.

Entries of "nd" indicate that the analyte was not detected above the minimum detection level, but the minimum detection level was not specified by the laboratory.

Values reported in the "HARDNESS, TOTAL" line were identified as "Hardness as CaCO3" (measured in mg/L) in the ChemTech reports and as "Total Hardness" (measured in mg /L CaCO3) in the York report.

Values reported in the "AMMONIA" line were identified as "Nitrogen, Ammonia" in the ChemTech reports and as "Ammonia" in the York report.

Chemtech reports included wells numbered MW4R6-19 and MW4R6-22. These are assumed in this report to be misreadings from the chain of custody of "MWHR6-19" and "MWHR6-22", and have been changed.

Due to the installation of couplets and the reinstallation of one well, the following changes were made in designations of pre-esting wells:

MWHR6-20 was renamed **MWHR6-20S**

MWHR6-21 was renamed **MWHR6-21S**

MWHR6-22 was replaced and renamed **MWHR6-22RP**

Table 3 - Landfill Monitoring Data
Landfill Six

SUMMARY OF LANDFILL GAS MONITORING AT AREA 6

Identification Number	Depth to Bottom (ft)	Percent Lower Explosive Limit	Percent Carbon Dioxide	Percent Methane	Percent Oxygen	Total Volatile Hydrocarbons (ppm_v)[a]	Distance Between Probes (ft)
A6G-01	3	0.0	0.0	0.0	20.6	0.0	---
A6G-02	3	0.0	0.0	0.0	20.7	1.5	95
A6G-03	3	0.0	2.4	0.0	15.6	4.3	95
A6G-04	3	0.0	0.0	0.0	20.6	1.2	95
A6G-05	3	0.0	0.0	0.0	20.6	0.0	95
A6G-06	3	404.0	8.4	22.2	1.9	0.0	95
A6G-07	3	336.0	9.1	21.8	3.2	0.0	95
A6G-08	3	0.0	0.0	0.0	20.2	0.0	83
A6G-09	3	0.0	0.1	0.0	20.1	0.0	54
A6G-10	3	0.0	1.2	0.0	18.8	0.0	95
A6G-11	3	0.0	0.0	0.0	20.5	0.0	95
A6G-12	3	0.0	0.4	0.0	19.9	0.0	95
A6G-13	3	0.0	0.2	0.0	20.2	0.0	95
A6G-14	3	0.0	0.1	0.0	20.1	0.0	55
A6G-15	3	0.0	0.0	0.0	20.2	0.0	52
A6G-16	3	0.0	0.2	0.0	19.7	0.0	69
A6G-17	3	0.0	0.5	0.0	19.7	0.0	94
A6G-18	3	0.0	0.0	0.0	20.5	0.0	91
A6G-19	3	0.0	2.9	0.0	18.3	0.0	81
A6G-20	3	4.0	0.3	0.2	19.8	0.0	80
A6G-21	3	0.0	0.0	0.0	20.2	0.0	44
A6G-22	3	0.0	2.7	0.0	17.3	0.0	51

(a) Based on measurements taken with photoionization detector. Photoionization detector measurements considered a conservative approximation of total volatile hydrocarbon concentrations at sample location due to instrument response limitations.

NOTE: Dashes (---) indicate initial probe location.

Sampling date: 6/21/00
Source: EA, 2001, Landfill Characterization Investigation Report, Areas 1, 2, 3, 5, 6, 7 and 8.

Table 4 - Landfill Six
Surface Water Samples
Collected July 12, 2004

	6 NYCRR Part 366 Parameter List		7/12/2004 Baseline	7/12/2004 Baseline
PARAMETERS	NYSDEC TOGS 1.1.1 Class D Surface Water Standard*	UNIT	SW-1 (upstream)	SW-2 (downstream)
CONDUCTIVITY	ns	umhos/cm	730	710
CONDUCTIVITY (laboratory)	ns	umhos/cm	952	825
pH	ns	units	8.0	7.7
pH (laboratory)	ns	units	7.88	7.60
TURBIDITY (visual)	ns	none	clear	clear
TURBIDITY (laboratory)	ns	NTU	1.88	5.20
TOTAL KJELDAHL NITROGEN	ns	mg/L	0.49	0.39
AMMONIA	**	ug/L	80	120
NITRATE	10,000	ug/L	1,100	950
C.O.D	ns	mg/L	nd	nd
B.O.D. (5-DAY)	ns	mg/L	9	7
TOTAL ORGANIC CARBON	ns	mg/L	1.7	1.7
TOTAL DISSOLVED SOLIDS	ns	mg/L	588	543
SULFATE	250,000	ug/L	31,100	31,800
ALKALINITY-TOTAL	ns	mg/l	234	240
PHENOLS, TOTAL	1	ug/L	nd	nd
CHLORIDE	250,000	ug/L	131,000	112,000
BROMIDE	2,000	ug/L	nd	nd
HARDNESS, TOTAL	ns	mg/L CaCO3	259	266
COLOR	ns	Pt-Co units	10	20
ALUMINUM	100	ug/L	**109**	50
ANTIMONY		ug/L	nd	**nd**
ARSENIC		ug/L	nd	nd
BARIUM	1,000	ug/L	56	50
BERYLLIUM		ug/L	nd	nd
CADMIUM		ug/L	nd	nd
CALCIUM	ns	ug/L	86,600	88,900
CHROMIUM		ug/L	nd	nd
CHROMIUM, HEXAVALENT		ug/L	nd	nd
COBALT		ug/L	nd	nd
COPPER		ug/L	nd	nd
CYANIDE, TOTAL		ug/L	nd	nd
IRON	300	ug/L	**315**	**837**
LEAD		ug/L	nd	nd
MAGNESIUM	35,000	ug/L	10,400	10,700
MANGANESE	300	ug/L	123	179
MERCURY		ug/L	nd	nd
NICKEL		ug/L	nd	nd
POTASSIUM	ns	ug/L	3,210	2,740
SELENIUM		ug/L	nd	nd
SILVER		ug/L	nd	nd
SODIUM	20,000	ug/L	**105,000**	**81,600**
THALLIUM		ug/L	nd	nd
VANADIUM		ug/L	nd	nd
ZINC	262-268***	ug/L	9	7
1,1,1,2-TETRACHLOROETHANE		ug/L	nd	nd
1,1,1-TRICHLOROETHANE		ug/L	nd	nd
1,1,2,2-TETRACHLOROETHANE		ug/L	nd	nd
1,1,2-TRICHLOROETHANE		ug/L	nd	nd
1,1-DICHLOROETHANE		ug/L	nd	nd
1,1-DICHLOROETHYLENE		ug/L	nd	nd
1,1-DICHLOROPROPYLENE		ug/L	nd	nd
1,2,3-TRICHLOROBENZENE		ug/L	nd	nd
1,2,3-TRICHLOROPROPANE		ug/L	nd	nd
1,2,3-TRIMETHYLBENZENE		ug/L	nd	nd
1,2,4-TRICHLOROBENZENE		ug/L	nd	nd
1,2,4-TRIMETHYLBENZENE		ug/L	nd	nd
1,2-DIBROMO-3-CHLOROPROPANE		ug/L	nd	nd
1,2-DIBROMOETHANE		ug/L	nd	nd
1,2-DICHLOROBENZENE		ug/L	nd	nd
1,2-DICHLOROETHANE		ug/L	nd	nd
1,2-DICHLOROETHYLENE (TOTAL)		ug/L	nd	nd

Table 4 - Landfill Six
Surface Water Samples
Collected July 12, 2004

	6 NYCRR Part 360 Parameter List		7/12/2004 Baseline	7/12/2004 Baseline
PARAMETERS	NYSDEC TOGS 1.1.1 Class D Surface Water Standard *	UNIT	SW-1 (upstream)	SW-2 (downstream)
1,2-DICHLOROPROPANE		ug/L	nd	nd
1,3,5-TRIMETHYLBENZENE		ug/L	nd	nd
1,3-DICHLOROBENZENE		ug/L	nd	nd
1,3-DICHLOROPROPANE		ug/L	nd	nd
1,4-DICHLOROBENZENE		ug/L	nd	nd
1-CHLOROHEXANE		ug/L	nd	nd
2,2-DICHLOROPROPANE		ug/L	nd	nd
2-BUTANONE		ug/L	nd	nd
2-CHLOROETHYL VINYL ETHER		ug/L	nd	nd
2-CHLOROTOLUENE		ug/L	nd	nd
2-HEXANONE		ug/L	nd	nd
4-CHLOROTOLUENE		ug/L	nd	nd
4-METHYL-2-PENTANONE		ug/L	nd	nd
ACETONE		ug/L	nd	nd
ACROLEIN		ug/L	nd	nd
ACRYLONITRILE		ug/L	nd	nd
BENZENE		ug/L	nd	nd
BROMOBENZENE		ug/L	nd	nd
BROMOCHLOROMETHANE		ug/L	nd	nd
BROMODICHLOROMETHANE		ug/L	nd	nd
BROMOFORM		ug/L	nd	nd
BROMOMETHANE		ug/L	nd	nd
CARBON DISULFIDE		ug/L	nd	nd
CARBON TETRACHLORIDE		ug/L	nd	nd
CHLOROBENZENE		ug/L	nd	nd
CHLOROETHANE		ug/L	nd	nd
CHLOROFORM		ug/L	nd	nd
CHLOROMETHANE		ug/L	nd	nd
cis-1,2-DICHLOROETHENE		ug/L	nd	nd
cis-1,3-DICHLOROPROPYLENE		ug/L	nd	nd
DIBROMOCHLOROMETHANE		ug/L	nd	nd
DIBROMOMETHANE		ug/L	nd	nd
DICHLORODIFLUOROMETHANE		ug/L	nd	nd
ETHYLBENZENE		ug/L	nd	nd
HEXACHLOROBUTADIENE		ug/L	nd	nd
ISOPROPLYBENZENE		ug/L	nd	nd
METHYL tert-BUTYL ETHER (MTBE)		ug/L	nd	nd
METHYLENE CHLORIDE		ug/L	nd	nd
NAPHTHALENE		ug/L	nd	nd
n-BUTYLBENZENE		ug/L	nd	nd
n-PROPYLBENZENE		ug/L	nd	nd
o-XYLENE		ug/L	nd	nd
p- & m-XYLENES		ug/L	nd	nd
p-ISOPROPYLTOLUENE		ug/L	nd	nd
sec-BUTYLBENZENE		ug/L	nd	nd
STYRENE		ug/L	nd	nd
tert-BUTYLBENZENE		ug/L	nd	nd
TETRACHLOROETHYLENE		ug/L	nd	nd
TOLUENE		ug/L	nd	nd
TRANS-1,2-DICHLOROETHENE		ug/L	nd	nd
TRANS-1,3-DICHLOROPROPYLENE		ug/L	nd	nd
TRICHLOROETHYLENE		ug/L	nd	nd
TRICHLOROFLOUROMETHANE		ug/L	nd	nd
VINYL ACETATE		ug/L	nd	nd
VINYL CHLORIDE		ug/L	nd	nd

"na" indicates data is not available
"ns" indicates no surface water standard is listed in NYSDEC TOGS 1.1.1
"nd" indicates the parameter was not detected above the laboratory method detection limit
* Standards listed for detected parameters. If no standard was listed for a "Class D" water in TOGS 1.1.1, then the next most stringent standard listed in TOGS 1.1.1 was used. Results which exceed the surface water standard have been shaded.
** refer to pH-temperature chart in TOGS 1.1.1; lowest reported standard is 820 ppb
*** the standard for Zinc was calculated according to the hardness equations specified in NYSDEC TOGS 1.1.1

Table 5 - Qualitative Human Health Exposure Matrix
Landfill Six Site

Contaminant Source	Contaminant Release & Transport Mechanism	Point of Exposure	Route of Exposure	Potentially Exposed Populations Under Proposed Future Use	Complete Exposure Pathway	Risk of Exposure
Solid Waste	Solid waste only exposed if exhumed or unburied.	No waste presently exposed other than small bank exposures near stream headwall	Dermal. Particulate Inhalation (dust, ash)	Informal contact by residents or visitors from larger project property.	Yes	Low (based on limited exposed waste mass and limited threat level)
Groundwater	Groundwater passes through solid waste and becomes contaminated	None. No known nearby potable wells	Dermal. Ingestion.	None	No	None (based on incomplete Exposure Pathway)
Landfill Gas	Gas migrates vertically to grade in select areas	Emissions directly over landfill.	Inhalation. Explosive Hazard.	Those walking or parking on Landfill Six.	Yes	Low (based on low putrescible waste fraction, small landfill size, limited explosive gas readings, and non-contained site)
Sediments Impacted by Leachate along the Creek	Leachate precipitates inorganic load at soil/atmosphere interface.	Surface soils immediately adjacent to stream bank (estimated 50 square feet)	Dermal	Informal contact by residents or visitors from larger project property.	Yes	Low (based on limited area of stained soils, limited exceedence of "moderate" impact threshold, and limited likelihood of dermal contact)
Stream water and Streambed Sediments	Streambottom sediments and the stream receive leachate outflows from Landfill Six	Stream and Streambed	Dermal	Informal contact by residents or visitors from larger project property.	Yes	Low (based on limited sediment exceedence of "moderate" impact threshold (arsenic), and increases only in aesthetic water quality exceedences (iron)

Figures

THE Chazen COMPANIES

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PLANNERS
ENVIRONMENTAL SCIENTISTS

Dutchess County Office:
21 Fox St. Poughkeepsie, NY 12601
Phone: (845) 454-3980

Orange County Office:
263 Route 17K Newburgh, NY 12550

Capital District Office:
20 Gurley Avenue Troy, NY 12182

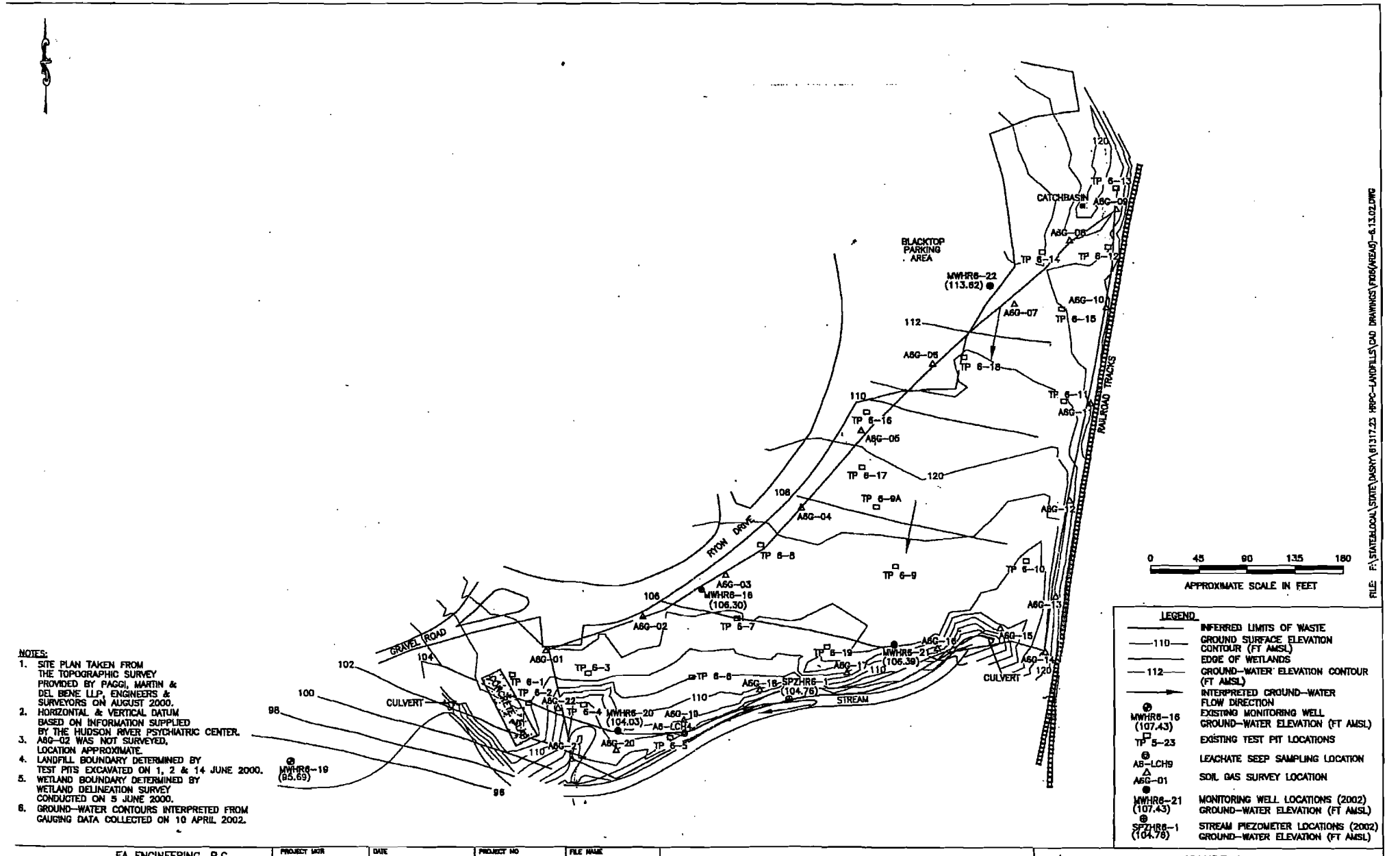
Glens Falls Office:
110 Glen Street Glens Falls, NY 12801

FIGURE 1-SITE LOCATION MAP

Hudson River Psychiatric Center
Poughkeepsie, Dutchess County, New York

USGS Topographic Map of the Poughkeepsie NY Quadrange. 1995
7.5 Minute Series Dutchess County Real Property Services - Tax Parcel Data

Date:	July 2004
Scale:	1 inch: 400 feet
Project #:	40307.00



NOTES:
1. SITE PLAN TAKEN FROM THE TOPOGRAPHIC SURVEY PROVIDED BY PAGGI, MARTIN & DEL BENE LLP, ENGINEERS & SURVEYORS ON AUGUST 2000.
2. HORIZONTAL & VERTICAL DATUM BASED ON INFORMATION SUPPLIED BY THE HUDSON RIVER PSYCHIATRIC CENTER.
3. A6G-02 WAS NOT SURVEYED, LOCATION APPROXIMATE.
4. LANDFILL BOUNDARY DETERMINED BY TEST PITS EXCAVATED ON 1, 2 & 14 JUNE 2000.
5. WETLAND BOUNDARY DETERMINED BY WETLAND DELINEATION SURVEY CONDUCTED ON 5 JUNE 2000.
6. GROUND-WATER CONTOURS INTERPRETED FROM GAUGING DATA COLLECTED ON 10 APRIL 2002.

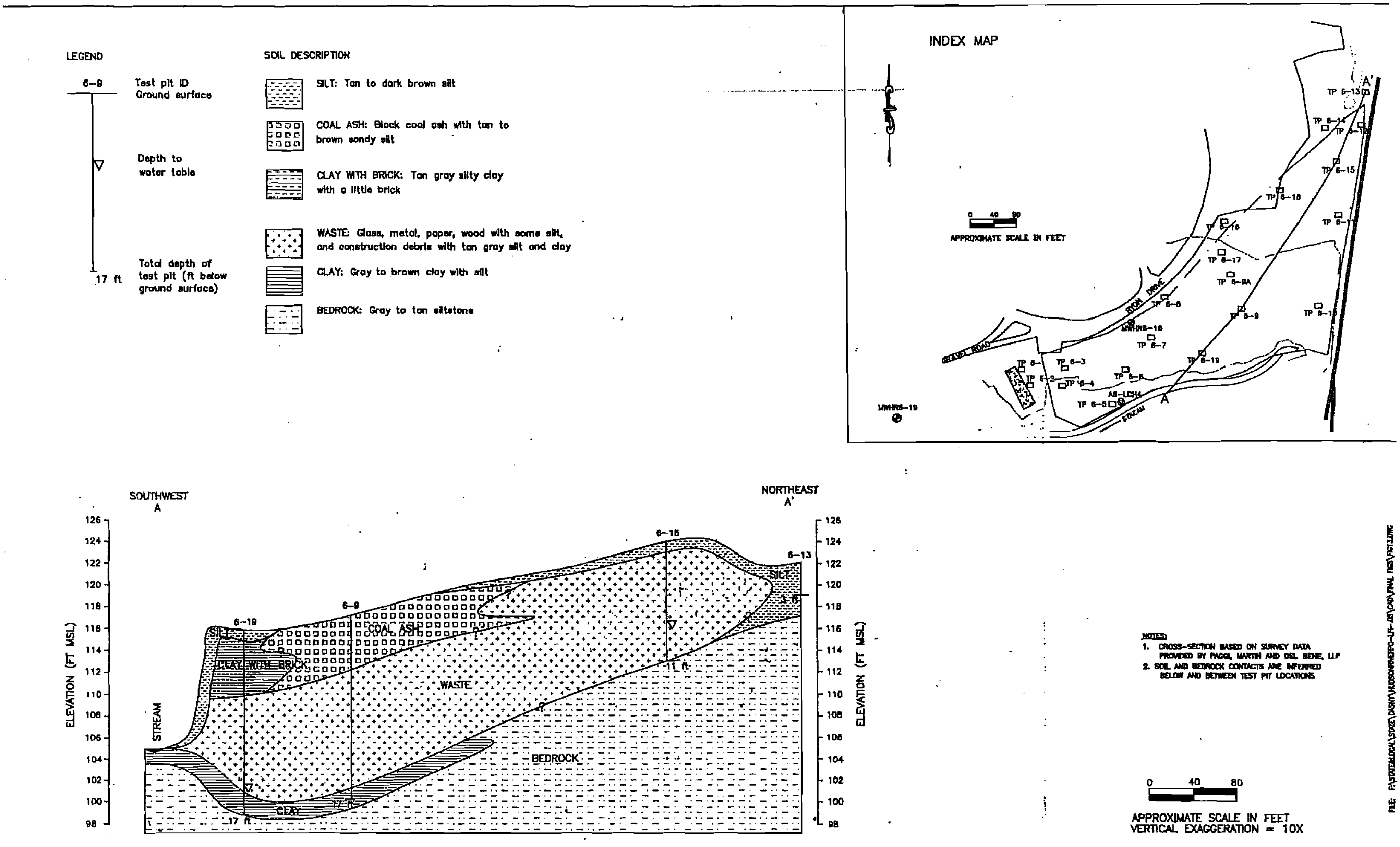
EA ENGINEERING, P.C. AND ITS AFFILIATE EA ENGINEERING, SCIENCE, AND TECHNOLOGY

PROJECT MGR	DATE	PROJECT NO	FILE NAME
DM	10 JULY 2002	61317.23	FIG6.DWG
CHECKED BY	DRAWN BY	DASNY PROJECT NO.	SCALE
KD	SAP	2375609999	AS SHOWN

HUDSON RIVER PSYCHIATRIC CENTER
POUGHKEEPSIE, NEW YORK

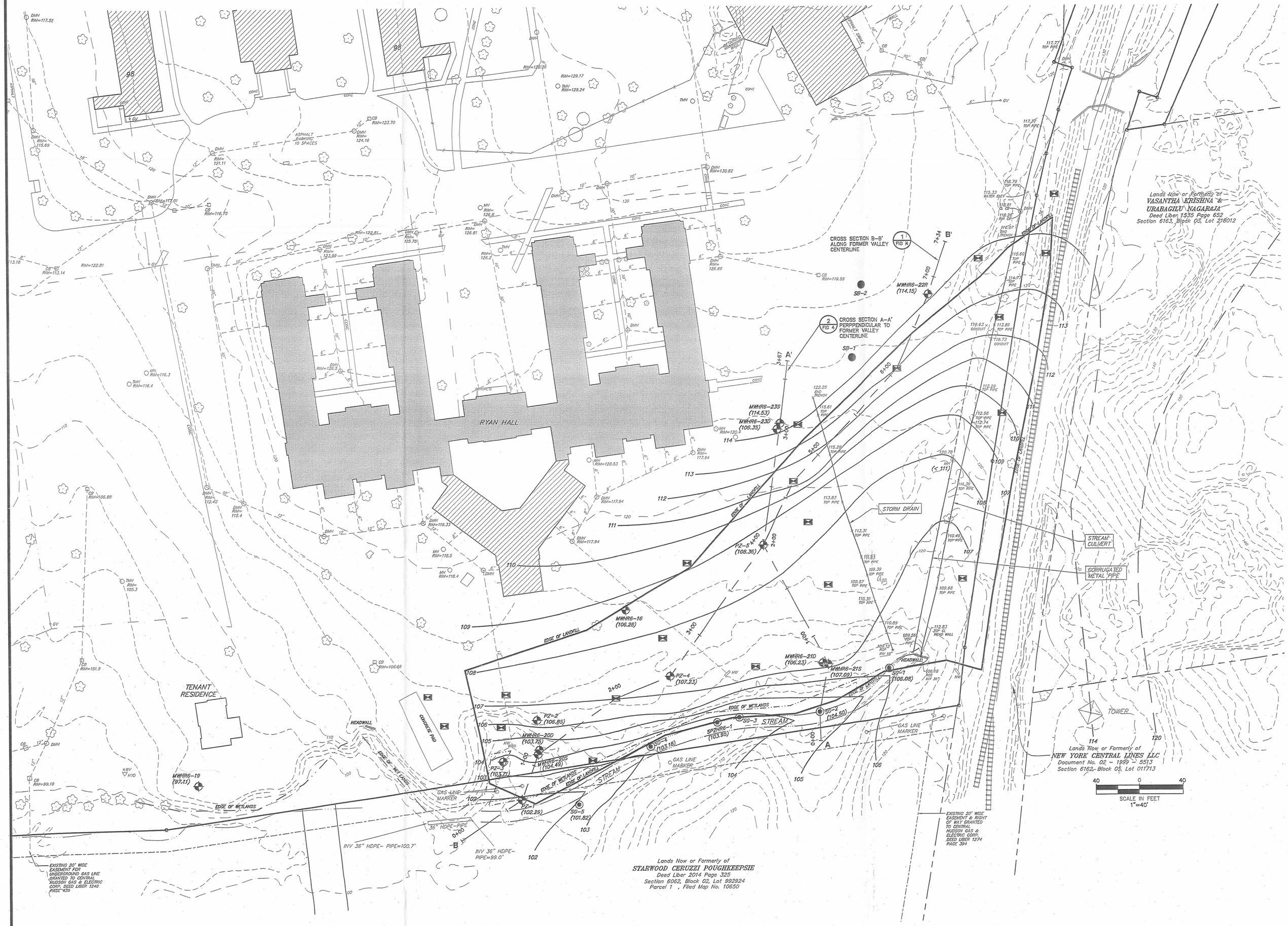
FIGURE 6
SITE MAP OF
LANDFILL AREA 6

Figure 2 – From EA (2002)



EA ENGINEERING, P.C. AND ITS AFFILIATE EA ENGINEERING, SCIENCE, AND TECHNOLOGY	PROJECT MGR DM	DATE 26 JAN 2001	PROJECT NO 61317.05	FILE NAME FIG13.DWG	HUDSON RIVER PSYCHIATRIC CENTER POUGHKEEPSIE, NEW YORK	FIGURE 13 CROSS-SECTION OF LANDFILL AREA 6
	CHECKED BY KD	DRAWN BY JG	DASNY PROJECT NO. 59995	SCALE AS SHOWN		

Figure 3 – From EA (2002)



1 FIG 3 **PLAN**
POTENTIOMETRIC SURFACE MAP
SCALE: HORIZONTAL 1"=40'

LEGEND:

- NO PHYSICAL BOUNDS
- ADJACENT PROPERTY LINE
- NYSDEC WETLANDS LINE
- NYSDEC 100' BUFFER LINE
- ACOE WETLANDS LINE
- 110 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- X 108.7 EXISTING SPOT GRADE
- EXISTING RETAINING WALL
- EXISTING SWALE
- EXISTING DRAINAGE LINE
- CB EXISTING CATCH BASIN
- DMH EXISTING DRAINAGE MANHOLE
- CB EXISITING CATCH BASIN
- HW EXISTING HEADWALL
- ES EXISTING END SECTION
- EXISTING TREE LINE
- EXISTING TREE/SHRUB
- EDGE OF LANDFILL
- SB-1 SOIL BORING LOCATION
- SG-5 (101.82) STAFF GAUGE LOCATION *(WATER EL.)*
- PZ-1 (102.29) PIEZOMETER LOCATION *(WATER EL.)*
- MWRG-22D (106.35) MONITORING WELL LOCATION *(WATER EL.)*
- EA ENGINEERING TEST PIT LOCATION
- 106 WATER TABLE CONTOUR (FEET)

NOTE:

WATER ELEVATIONS CALCULATED FROM WATER LEVEL MEASUREMENTS TAKEN ON 10/23/03 (TABLE 2).

WATER TABLE CONTOURS DASHED WHERE INFERRED.

THE Chazen COMPANIES
Engineers/Surveyors
Planners
Environmental Scientists

CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.

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rev.	date	description

HUDSON RIVER PSYCHIATRIC CENTER–LANDFILL AREA 6 CLOSURE INVESTIGATION

POTENTIOMETRIC SURFACE MAP

TOWN OF POUGHKEEPSIE, DUTCHESS COUNTY, NEW YORK

drawn	checked
DWP	
date	scale
10/14/03	1"=40'
project no.	
40307	
sheet no.	
Figure 4	

5772

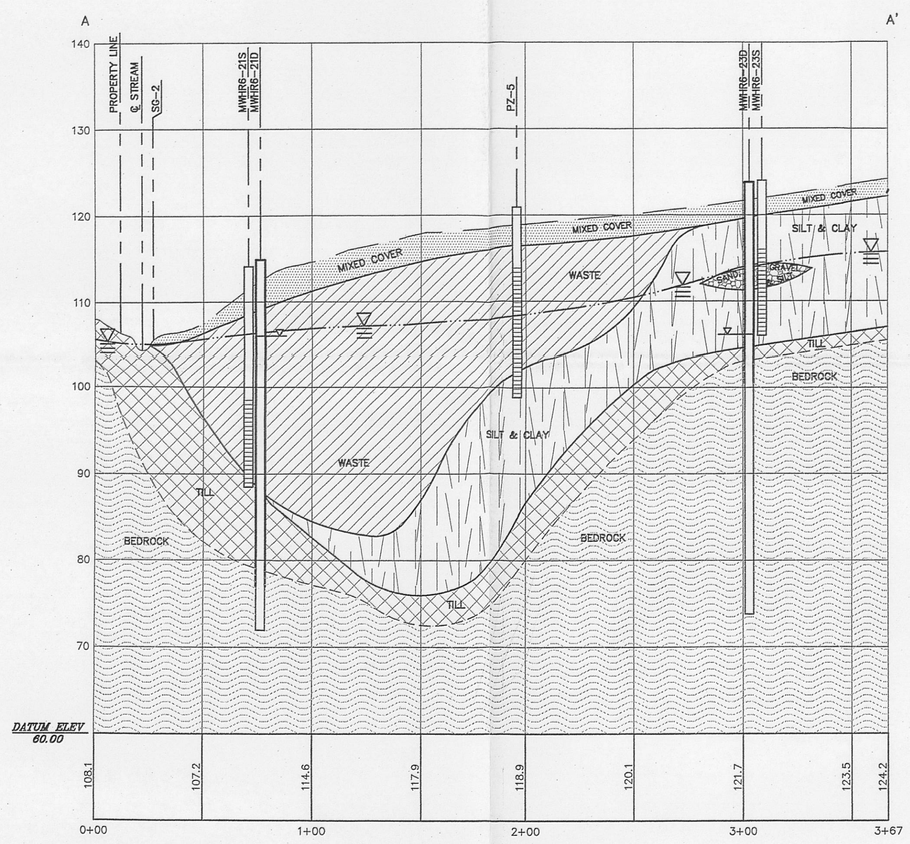
Drawing Name: X:\L\40300-40400\40307.00 (HRPC-Hydrogeo)\ENG\DWG\Figures\Figure 3 -LANDFILL Area 6.dwg
Xref's Attached: XBASE Levels: XBASE Hatch: X-PROFILE LANDFILL Area 6
Date Printed: Mar 16, 2004, 11:56am

LEGEND:

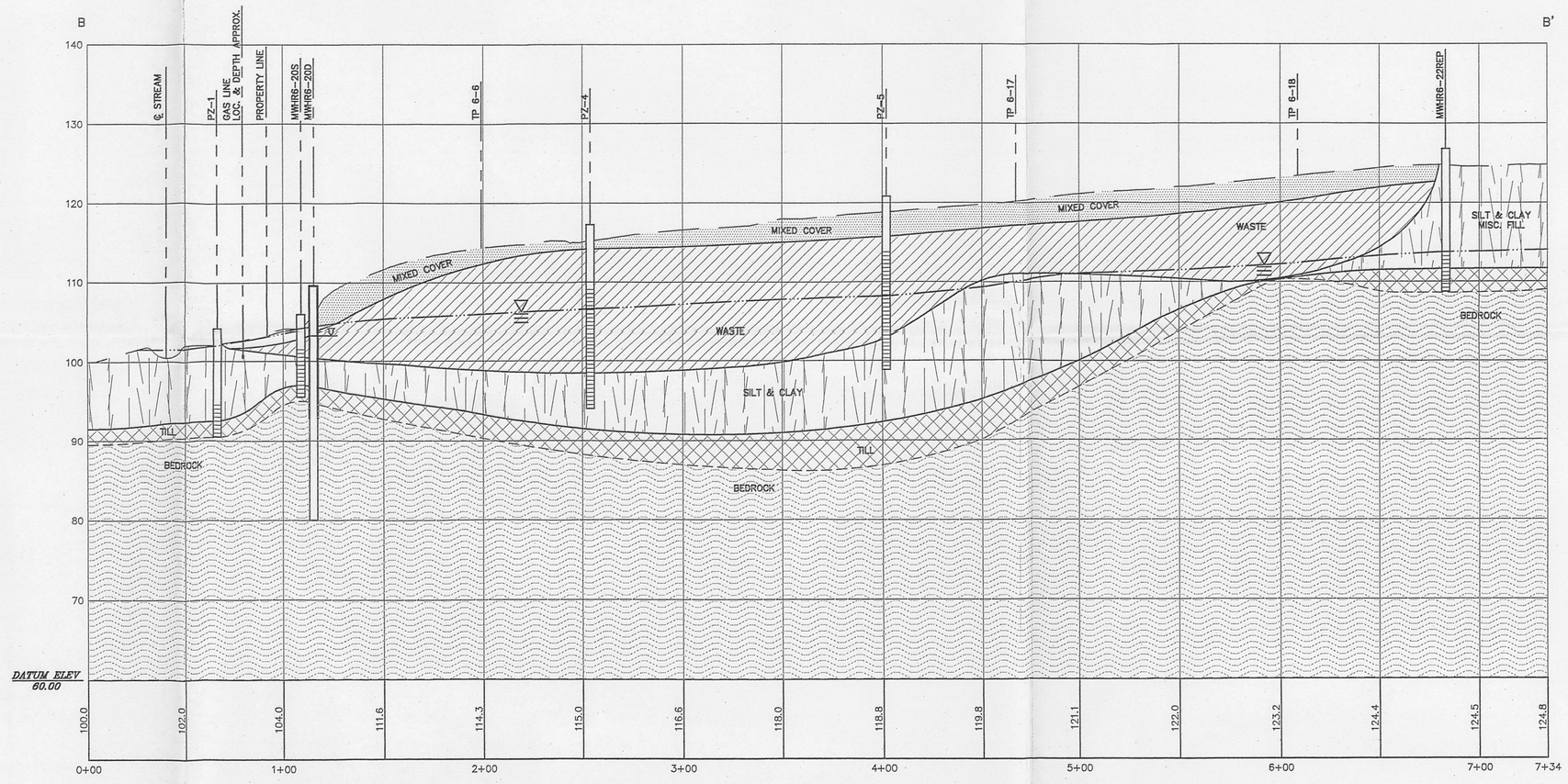
- EXISTING GROUND
- BEDROCK
- WATER TABLE
- MIXED COVER
- WASTE
- SILT & CLAY
- SAND & GRAVEL
- TILL
- BEDROCK

NOTE:

1. WELL DIMENSIONS NOT TO SCALE.
2. ALL BOUNDARIES INFERRED BASED ON FINDINGS FORM FIELD INVESTIGATION, HISTORICAL TOPOGRAPHIC MAPS , AND INFORMATION FROM "LANDFILL CLOSURE INVESTIGATION REPORT" BY EA ENGINEERING.



1 FIG 4 **CROSS SECTION A-A' PERPENDICULAR TO FORMER VALLEY CENTERLINE**
SCALE: HORIZONTAL 1"=40'
VERTICAL 1"=10'



2 FIG 4 **CROSS SECTION B-B' ALONG FORMER VALLEY CENTERLINE**
SCALE: HORIZONTAL 1"=40'
VERTICAL 1"=10'

THE Chazen COMPANIES
Engineers/Surveyors
Planners
Environmental Scientists

CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.

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rev.	date	description

HUDSON RIVER PSYCHIATRIC CENTER–LANDFILL AREA 6 CLOSURE INVESTIGATION

CROSS SECTIONS

TOWN OF POUGHKEEPSIE, DUTCHESS COUNTY, NEW YORK

drawn	checked
DWP	
date	scale
10/14/03	AS SHOWN
project no.	
40307.00	
sheet no.	
Figure 5	

Drawing Name: X:\A\40300-40400\40307.00 (HRPC-Hydrogeo)\ENG\DWG\Figures\Figure 4 -PROFILES LANDFILL Area 6.dwg
Xref's Attached: X-PROFILE LANDFILL Area 6

Appendix A:
Laboratory Data

YORK
ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for

Chazen Environmental Services
P.O. Box 3479
229-B Page Park, Manchester Rd.
Poughkeepsie, NY 12603
Attention: Catherine Monian

Report Date: 7/15/2004
Re: Client Project ID: 40307.00 Task 8
York Project No.: 04070324

CT License No. PH-0723 New York License No. 10854 Mass. License No. M-CT106 Rhode Island License No. 93 NJ License No. CT401

120 RESEARCH DRIVE STRATFORD, CT 06615 (203) 325-1371 FAX (203) 357-0166

Report Date: 7/15/2004
Client Project ID: 40307.00 Task 8
York Project No.: 04070324

Chazen Environmental Services
P.O. Box 3479
229-B Page Park, Manchester Rd.
Poughkeepsie, NY 12603
Attention: Catherine Monian

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on 07/13/04. The project was identifed as your project "40307.00 Task 8 ".

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables .

All samples were received in proper condition meeting the NELAC acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All the analyses met the method and laboratory standard operating procedure requirements except as indicated under the Notes section of this report, or as indicated by any data flags, the meaning of which is explained in the attachment to this report, if applicable.

The results of the analyses, which are all reported on an as-received basis unless otherwise noted, are summarized in the following table(s).

Analysis Results

Client Sample ID			HRPC-SW-1		HRPC-SW-2	
York Sample ID			04070324-01		04070324-02	
Matrix			WATER		WATER	
Parameter	Method	Units	Results	MDL	Results	MDL
Volatiles-8260+MTBE water	SW846-8260	ug/L	---	---	---	---
1,1,1,2-Tetrachloroethane			Not detected	1	Not detected	1
1,1,1-Trichloroethane			Not detected	1	Not detected	1
1,1,2,2-Tetrachloroethane			Not detected	1	Not detected	1
1,1,2-Trichloroethane			Not detected	1	Not detected	1
1,1-Dichloroethane			Not detected	1	Not detected	1
1,1-Dichloroethylene			Not detected	1	Not detected	1
1,1-Dichloropropylene			Not detected	1	Not detected	1
1,2,3-Trichlorobenzene			Not detected	1	Not detected	1
1,2,3-Trichloropropane			Not detected	1	Not detected	1
1,2,3-Trimethylbenzene			Not detected	1	Not detected	1
1,2,4-Trichlorobenzene			Not detected	1	Not detected	1
1,2,4-Trimethylbenzene			Not detected	1	Not detected	1
1,2-Dibromo-3-chloropropane			Not detected	1	Not detected	1
1,2-Dibromoethane			Not detected	1	Not detected	1
1,2-Dichlorobenzene			Not detected	1	Not detected	1
1,2-Dichloroethane			Not detected	1	Not detected	1

YORK

Client Sample ID			HRPC-SW-1		HRPC-SW-2	
York Sample ID			04070324-01		04070324-02	
Matrix			WATER		WATER	
Parameter	Method	Units	Results	MDL	Results	MDL
1,2-Dichloroethylene (Total)			Not detected	1	Not detected	1
1,2-Dichloropropane			Not detected	1	Not detected	1
1,3,5-Trimethylbenzene			Not detected	1	Not detected	1
1,3-Dichlorobenzene			Not detected	1	Not detected	1
1,3-Dichloropropane			Not detected	1	Not detected	1
1,4-Dichlorobenzene			Not detected	1	Not detected	1
1-Chlorohexane			Not detected	1	Not detected	1
2,2-Dichloropropane			Not detected	1	Not detected	1
2-Chlorotoluene			Not detected	1	Not detected	1
4-Chlorotoluene			Not detected	1	Not detected	1
Benzene			Not detected	1	Not detected	1
Bromobenzene			Not detected	1	Not detected	1
Bromochloromethane			Not detected	1	Not detected	1
Bromodichloromethane			Not detected	1	Not detected	1
Bromoform			Not detected	1	Not detected	1
Bromomethane			Not detected	1	Not detected	1
Carbon tetrachloride			Not detected	1	Not detected	1
Chlorobenzene			Not detected	1	Not detected	1
Chloroethane			Not detected	1	Not detected	1
Chloroform			Not detected	1	Not detected	1
Chloromethane			Not detected	1	Not detected	1
cis-1,3-Dichloropropylene			Not detected	1	Not detected	1
Dibromochloromethane			Not detected	1	Not detected	1
Dibromomethane			Not detected	1	Not detected	1
Dichlorodifluoromethane			Not detected	1	Not detected	1
Ethylbenzene			Not detected	1	Not detected	1
Hexachlorobutadiene			Not detected	1	Not detected	1
Isopropylbenzene			Not detected	1	Not detected	1
Methyl tert-butyl ether (MTBE)			Not detected	1	Not detected	1
Methylene chloride			Not detected	1	Not detected	1
Naphthalene			Not detected	1	Not detected	1
n-Butylbenzene			Not detected	1	Not detected	1
n-Propylbenzene			Not detected	1	Not detected	1
o-Xylene			Not detected	1	Not detected	1
p- & m-Xylenes			Not detected	1	Not detected	1
p-Isopropyltoluene			Not detected	1	Not detected	1
sec-Butylbenzene			Not detected	1	Not detected	1
Styrene			Not detected	1	Not detected	1
tert-Butylbenzene			Not detected	1	Not detected	1
Tetrachloroethylene			Not detected	1	Not detected	1
Toluene			Not detected	1	Not detected	1
trans-1,3-Dichloropropylene			Not detected	1	Not detected	1
Trichloroethylene			Not detected	1	Not detected	1
Trichlorofluoromethane			Not detected	1	Not detected	1
Vinyl chloride			Not detected	1	Not detected	1
Metals, Priority Pollutant List	EPA SW846	mg/L	---	---	---	---
Antimony			Not detected	0.006	Not detected	0.006
Arsenic			Not detected	0.004	Not detected	0.004
Beryllium			Not detected	0.0001	Not detected	0.0001
Cadmium			Not detected	0.003	Not detected	0.003
Chromium			Not detected	0.005	Not detected	0.005

YORK

Client Sample ID			HRPC-SW-1		HRPC-SW-2	
York Sample ID			04070324-01		04070324-02	
Matrix			WATER		WATER	
Parameter	Method	Units	Results	MDL	Results	MDL
Copper			Not detected	0.005	Not detected	0.005
Lead			Not detected	0.003	Not detected	0.003
Nickel			Not detected	0.005	Not detected	0.005
Selenium			Not detected	0.005	Not detected	0.005
Silver			Not detected	0.005	Not detected	0.005
Thallium			Not detected	0.005	Not detected	0.005
Zinc			0.009	0.005	0.007	0.005
Aluminum	SW846-6010	mg/L	0.109	0.010	0.050	0.010
Alkalinity-Total	SM403	mg/L	234	2.0	240	2.0
Barium	SW846-6010	mg/L	0.056	0.010	0.050	0.010
B.O.D.(5-day)	EPA 405.1	mg/L	9	1.0	7	1.0
Bromide	EPA300/SW9056	mg/l	Not detected	0.2	Not detected	0.2
Chloride	EPA300/SW9056	mg/L	131	0.5	112	0.5
Ammonia	EPA300/SW9056	mg/L	0.08	0.05	0.12	0.05
Nitrate	EPA 300/SW9056	mg/L	1.10	0.05	0.95	0.05
Calcium	SW846-6010	mg/L	86.6	0.020	88.9	0.020
Cyanide, total	EPA 335.2	mg/L	Not detected	0.01	Not detected	0.01
Cobalt	SW846-6010	mg/L	Not detected	0.005	Not detected	0.005
C.O.D.	SM 5220 D	mg/L	Not detected	10.0	Not detected	10.0
Color	EPA 110.1	Pt-Co units	10	1	20	1
Conductivity	EPA 120.1	umhos/cm	952	1.0	825	1.0
Chromium, hexavalent	EPA 218.4	mg/L	Not detected	0.01	Not detected	0.01
Iron	SW846-6010	mg/L	0.315	0.005	0.837	0.005
Hardness, total	SM314B	mg/L CaCO3	259	1.0	266	1.0
Potassium	SW846-6010	mg/L	3.21	0.500	2.74	0.500
Magnesium	SW846-6010	mg/L	10.4	0.020	10.7	0.020
Manganese	SW846-6010	mg/L	0.123	0.005	0.179	0.005
Sodium	SW846-6010	mg/L	105	0.10	81.6	0.10
pH	EPA 150.1	units	7.88	---	7.60	---
Phenols, Total	EPA 420.1/2	mg/L	Not detected	0.05	Not detected	0.05
Sulfate	EPA 300	mg/L	31.1	0.2	31.8	0.2
Total Dissolved Solids	EPA 160.1	mg/L	588	0.5	543	0.5
Total Kjeldahl Nitrogen	SM420A	mg/L	0.49	0.10	0.39	0.10
Total Organic Carbon	SM505B	mg/L	1.7	1.0	1.7	1.0
Turbidity	EPA 180.1	NTU	1.88	0	5.20	0
Vanadium	SW846-6010	mg/L	Not detected	0.005	Not detected	0.005
Mercury	SW846-7470	mg/L	Not detected	0.0002	Not detected	0.0002

Client Sample ID			HRPC-A5-SS1/1325		HRPC-A5-SS1/1324	
York Sample ID			04070324-03		04070324-04	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
Aluminum	SW846-6010	mg/kG	50.0	1.00	22.8	1.00
Arsenic	SW846-6010	mg/kG	0.342	1.00	0.275	1.00
Iron	SW846-6010	mg/kG	2180	5.00	2050	5.00
Manganese	SW846-6010	mg/kG	16.6	5.00	9.62	5.00
Lead	SW846-6010	mg/kG	0.337	0.500	0.194	0.500
Mercury	SW846-7471	mg/kG	Not detected	0.10	Not detected	0.10
Total Organic Carbon	SM	mg/kg	940	250	Not detected	250

YORK

Client Sample ID			HRPC-A6-SS1		HRPC-A6-SS2	
York Sample ID			04070324-05		04070324-06	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
Aluminum	SW846-6010	mg/kG	3840	1.00	1100	1.00
Arsenic	SW846-6010	mg/kG	9.57	1.00	1.60	1.00
Iron	SW846-6010	mg/kG	42900	5.00	9790	5.00
Manganese	SW846-6010	mg/kG	391	5.00	121	5.00
Lead	SW846-6010	mg/kG	41.5	0.500	19.6	0.500
Mercury	SW846-7471	mg/kG	0.17	0.10	Not detected	0.10
Total Organic Carbon	SM	mg/kg	30000	250	3300	250

Client Sample ID			HRPC-A6-SS3	
York Sample ID			04070324-07	
Matrix			SOIL	
Parameter	Method	Units	Results	MDL
Aluminum	SW846-6010	mg/kG	7630	1.00
Arsenic	SW846-6010	mg/kG	6.95	1.00
Iron	SW846-6010	mg/kG	26100	5.00
Manganese	SW846-6010	mg/kG	426	5.00
Lead	SW846-6010	mg/kG	24.6	0.500
Mercury	SW846-7471	mg/kG	0.11	0.10
Total Organic Carbon	SM	mg/kg	8700	250

Units Key: For Waters/Liquids: mg/L = ppm ; ug/L = ppb For Soils/Solids: mg/kg = ppm ; ug/kg = ppb

Notes for York Project No. 04070324

1. The MDL (Minimum Detectable Limit) reported is adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All samples were received in proper condition for analysis with proper documentation.
6. All analyses conducted met method or Laboratory SOP requirements.
7. It is noted that Total Organic Carbon analyses reported herein were subcontracted to EAS Laboratory, Watertown, CT.

Approved By: Robert Q. Bradley
Managing Director

Date: 7/15/2004

YORK

04070324

CHAIN OF CUSTODY RECORD

CHAZEN ENVIRONMENTAL SERVICES, INC.

Dutchess County Office:
21 Fox Street
Poughkeepsie, New York 12601
Phone: (845)454-3980
Fax: (845)454-4026

Newburgh Office:
263 Route 17K
Newburgh, New York 12550
Phone: (845)567-1133
Fax: (845)567-1925

Capital District Office:
20 Gurley Avenue
Troy, New York 12182
Phone: (518)235-8050
Fax: (518)235-8051

North County Office:
110 Glen Street
Glens Falls, New York 12801
Phone: (518)812-0513
Fax: (518)812-2215

Attention: Catherine Marian / Will Olsen
Project Name: HRPC Landfill Area 6 Closure
Location: Poughkeepsie, NY
Project Number: 40307.00 TASK 8
Project Manager: RDM

Please Reference P.O. # 6979

Laboratory: YORK
Turn Around Time: ~~48 HOUR~~
Level: Normal

SAMPLE ID	DATE	TIME	Composite	Grab Sample	Matrix*	Total Number of Containers	40 ml Vial: Preserved	40 ml Vial: Un-Preserved	Liter Un-Preserved: Glass - Clear	Liter Un-Preserved: Glass - Amber	Liter Un-Preserved: Plastic	Liter Preserved: Sulfuric	Liter Preserved: Nitric (250)	Liter Preserved: Sodium Hydroxide (500)	Liter Preserved: Other	Liter Preserved: Organic Washed	500 ml: Field Fixed Dissolved Oxygen	250 ml: Glass	250 ml: Plastic	125 ml: Sterile Plastic	Glass: Soil Sample	Other	ANALYSIS REQUESTED
HRPC-SW-1	7/12/04	13:40		X	SW	6	2				1	1	1	1									NYCRR Part 360 Baseline Parameters
HRPC-SW-2	"	14:15		X	SW	6	2				1	1	1	1									"
HRPC-A5-SS1	"	13:25		X	SD	1															1		TOC, Al, As, Fe, Mn, Pb, Hg
HRPC-A5-SS1	"	13:25		X	SD	1															1		"
HRPC-A6-SS1	"	13:50		X	SD	1															1		"
HRPC-A6-SS2	"	14:05		X	SD	1															1		"
HRPC-A6-SS3	"	12:08		X	SD	1															1		"
																					0		
																					1		48 HOUR T.A.T !

* - Please Identify Matrix:
GW - Groundwater SW - Surface Water DW - Drinking Water SS - Soil Sample SD - Sediment Sample SL - Sludge PS - Process Sample Other (Please Specify)

Relinquished By:
Name: Will Olsen (Please Print) Date: 7/13/04 Time: 11:45 Company: TCC

Received By:
Name: (Please Print) Date: / Time: / Company:

Received By:
Name: (Please Print) Date: 7/13/04 Time: 1745 Company: YORK 4.8°C

PLEASE NOTE: Pink Sheet - Chazen Copy Yellow Sheet - Laboratory File Copy White Top Sheet - Report Copy (Please return along with completed Lab Results)

THE Chazen COMPANIES

Chazen Environmental Services, Inc
Field Data Sheet

SAMPLE INFORMATION:
Sample ID: HRPC-SW-1 Sample Date: 7/12/04 Sample Time: 13:40
Well ID: — Sample Matrix: GW (SW) DW Soil Other:
Project Name: Hudson River Psychiatric Center-Area 6 Project and Task#: 40307.00 TASK 2
Sample Location/Task: Landfill Area 6 - upstream Proj. Manager: RUM

WELL INFORMATION:
Well Condition:
Lock Type: Key #:

PURGE DATA:
Measuring Point:
Depth to Bottom:
Water Level:
Height of Water Column:
Purge Method:
Start Date:
Start Time:
Stop Time:

Calculated Volume:
A = Water Column
(Bottom Depth-Depth to Water)
B = Gallons/Foot
C = # of Volumes To Be Purged
A x B x C = Gallons To Be Purged

Gallons to be purged:

Pipe Width	Gal/ Foot
1.5"	0.092
2.0"	0.163
3.0"	0.367
4.0"	0.653
6.0"	1.469
8.0'	2.611

Actual Volume:
Purge Rate (gpm):
Elapsed Time (min):
Well Volumes Purged (#):
Purge Volume (gal):
Well went dry?: ☐ No ☐ Yes
Condition: ☐ No Odor ☐ Odor
☐ Clear ☐ Sl.Turbid ☐ Turbid

FIELD RESULTS:

Water Level	Sample Depth	Temperature	pH	Conductivity	Turbidity	Other: Odor
	Start					
	Volume 1					
	Volume 2					
	Volume 3					
	Volume 4					
	Sample	N.A.	8.0	730 µS	clear	None

SAMPLE INFORMATION:
Sample Method: Grab direct from stream
i.e. Peristaltic, Submersible, Dedicated or Disp. Bailer, Waterra, etc..
Weather: Cloudy + Humid
Sample Type: ☐ Composite ☒ Grab
Sample Depth: surface
Sample Technician(s): (L)
Notes:

LAB REQUESTS:

Laboratory Name:	Analysis/Method:	Turn Around Time:
YORK	NYCRR Part 360	☒ 48 Hour
	Baseline Parameters	

QA/QC
☐ Duplicate ☐ Field Blank ☐ Equip. Blank ☐ Trip Blank

SAMPLE TRANSPORT:
Transported Via: Courier Date: 7/13/04

THE Chazen COMPANIES

Chazen Environmental Services, Inc
Field Data Sheet

SAMPLE INFORMATION:
Sample ID: HRPC - SW - 2 Sample Date: 7/12/04 Sample Time: 14:15
Well ID: — Sample Matrix: GW (SW) DW Soil Other:
Project Name: Hudson River Psychiatric Center Project and Task#: 40307.00 TASK 8
Sample Location/Task: Landfill Area 6 Proj. Manager: RUM

WELL INFORMATION:
Well Condition:
Lock Type: Key #:

PURGE DATA:
Measuring Point:
Depth to Bottom:
Water Level:
Height of Water Column:
Purge Method:
Start Date:
Start Time:
Stop Time:

Calculated Volume:
A = Water Column
(Bottom Depth-Depth to Water)
B = Gallons/Foot
C = # of Volumes To Be Purged
A x B x C = Gallons To Be Purged

Gallons to be purged:

Pipe Width	Gal/ Foot
1.5"	0.092
2.0"	0.163
3.0"	0.367
4.0"	0.653
6.0"	1.469
8.0'	2.611

Actual Volume:
Purge Rate (gpm):
Elapsed Time (min):
Well Volumes Purged (#):
Purge Volume (gal):
Well went dry?: ☐ No ☐ Yes
Condition: ☐ No Odor ☐ Odor
☐ Clear ☐ Sl.Turbid ☐ Turbid

FIELD RESULTS:

Water Level	Sample Depth	Temperature	pH	Conductivity	Turbidity	Other: Odor
	Start					
	Volume 1					
	Volume 2					
	Volume 3					
	Volume 4					
	Sample	N.A.	7.7	710.5	clear	None

SAMPLE INFORMATION:
Sample Method: Grab direct from stream
i.e. Peristaltic, Submersible, Dedicated or Disp. Bailer, Waterra, etc..
Weather: Cloudy & Humid
Sample Type: ☐ Composite ☒ Grab
Sample Depth: Surface
Sample Technician(s): (W)
Notes:

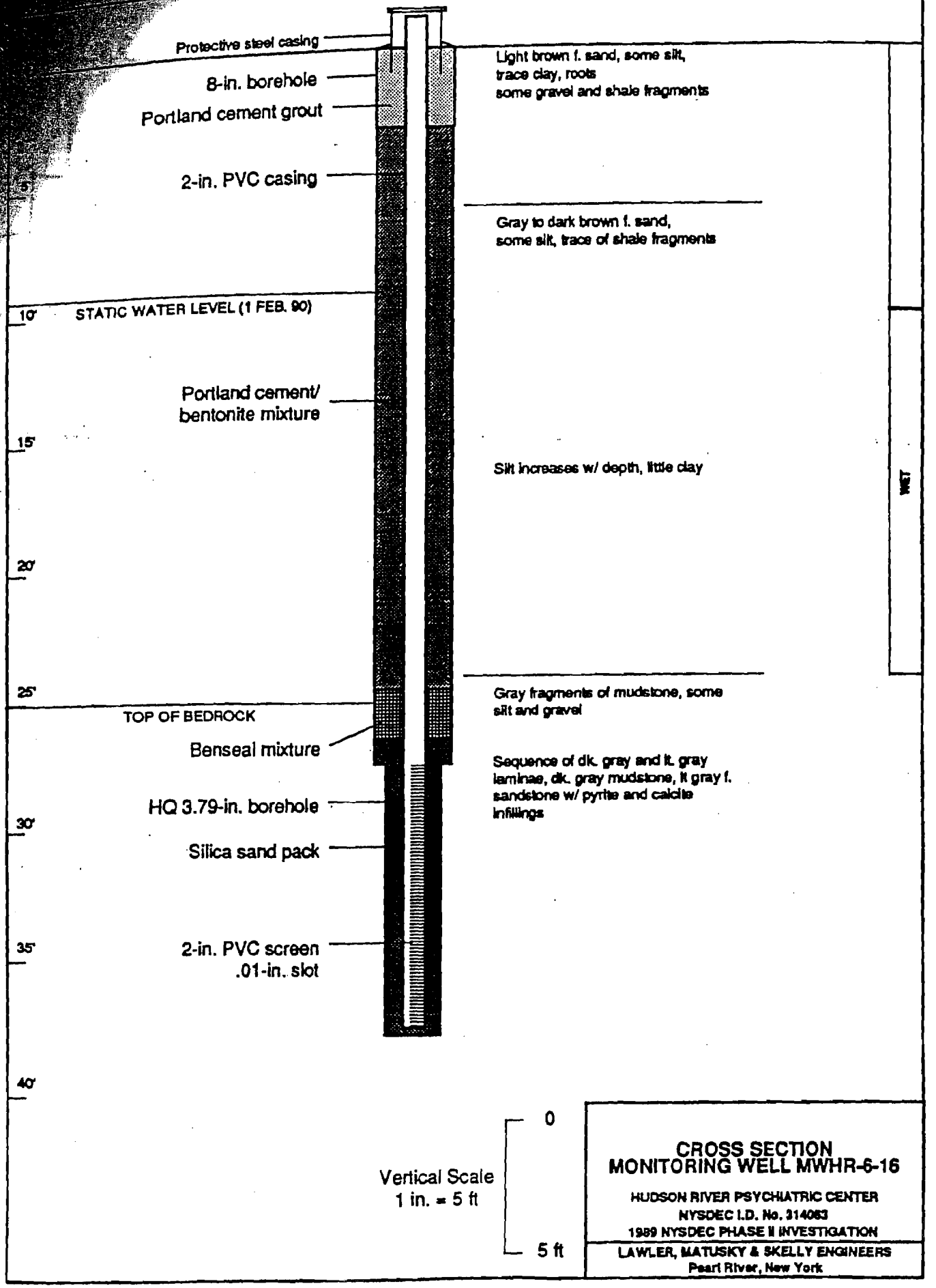
LAB REQUESTS:

Laboratory Name:	Analysis/Method:	Turn Around Time:
YORK	NYCRR Baseline Parameters	48 hr

QA/QC
☐ Duplicate ☐ Field Blank ☐ Equip. Blank ☐ Trip Blank

SAMPLE TRANSPORT:
Transported Via: Courier Date: 7/13/04

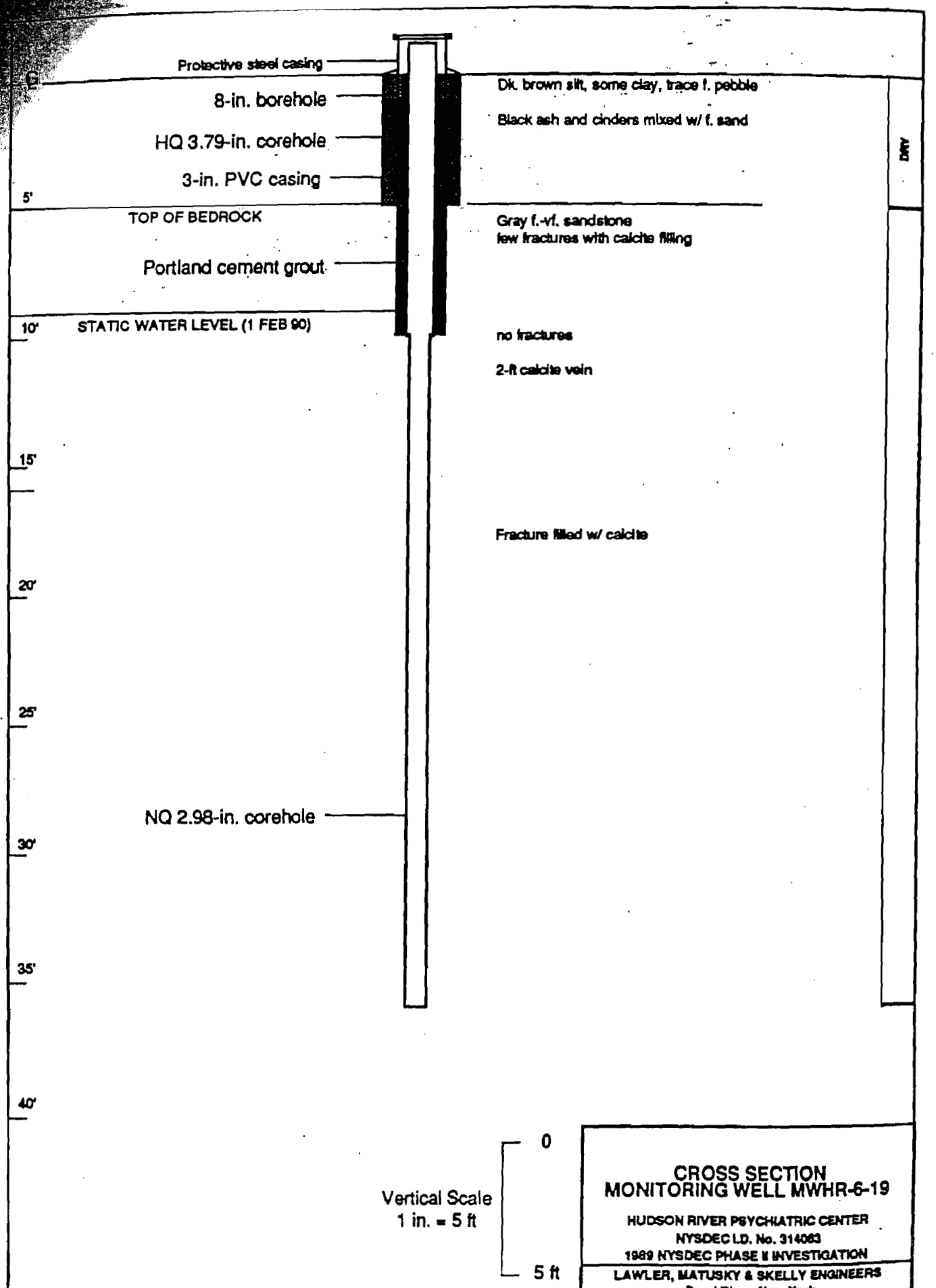
Appendix B:
Monitoring Well Logs



CROSS SECTION
MONITORING WELL MWHR-6-16

HUDSON RIVER PSYCHIATRIC CENTER
NYSDEC I.D. No. 314063
1989 NYSDEC PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York


Protective steel casing
8-in. borehole
HQ 3.79-in. corehole
3-in. PVC casing
5'
TOP OF BEDROCK
Portland cement grout
10'
STATIC WATER LEVEL (1 FEB 90)
15'
20'
25'
NQ 2.98-in. corehole
30'
35'
40'
Dk. brown silt, some clay, trace f. pebble
Black ash and cinders mixed w/ f. sand
DRY
Gray f.-vf. sandstone
few fractures with calcite filling
no fractures
2-ft calcite vein
Fracture filled w/ calcite
Vertical Scale
1 in. = 5 ft
0
5 ft
CROSS SECTION
MONITORING WELL MWHR-6-19
HUDSON RIVER PSYCHIATRIC CENTER
NYSDEC I.D. No. 314063
1989 NYSDEC PHASE II INVESTIGATION
LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Coordinates:	N: E:
Surface Elevation:	FT MSL
Well Riser Elevation:	FT MSL

Job. No. 6137.23	Client: DASNY	Location: HRPC
Drilling Method: Drive & Wash; 4" ID Steel Casing - CME-75 Mobile		Boring No. MWHR6-20
Sampling Method: 2' x 2" Split Spoon 140lbs. Hammer		Sheet 1 of 1
Drilling Water Level / Date / Time		Start 0830 3/21/02 — Drilling Date/Times — Finish 1010 3/21/02
Surface Conditions: Peat/Humus		

Sample Type	Inches Driven/In. Recvrd	Dpth Csg.	Samp # / depth (ft)	PID (ppm) Above bk.	Blows per 6"	Ft bgs	USCS Log	SOIL DESCRIPTION
						0	PT/OL	Peat/Humus at surface. Boring advanced at edge of wetlands.
						1	? FILL/	Roller-bit wash includes quartz & concrete frags, metal shards – (0-4' bgs); indicative of possible fill/ edge of waste.
						2	TRASH ?	
						3		
SS	24/3	4	4-6	Ø	6 4 8 15	4	HL	0-3" Brown very fine sand & silt w/trace medium to coarse angular gravel; little wood, organics; organic odor; moist
						5		
						6	▽	AT OR NEAR SUSPECTED H_2O TABLE
						7		
						8		
SS	24/9	9	9-11	Ø	2 1 10 50/0	9	HL	0-9" Brown Silt w/trace clay grading into tan silt w/few gray mottles; possible glaying; very dense; Dk gray to black weathered mudstone at base. Fluctuating H_2O table within saturated zone.
						10		
						11	EOB, REF.	END OF BORING AT 10.5'. REFUSAL AT 10.5' bgs.
						12		
						13		
						14		
						15		
						16		
						17		
						18		
						19		

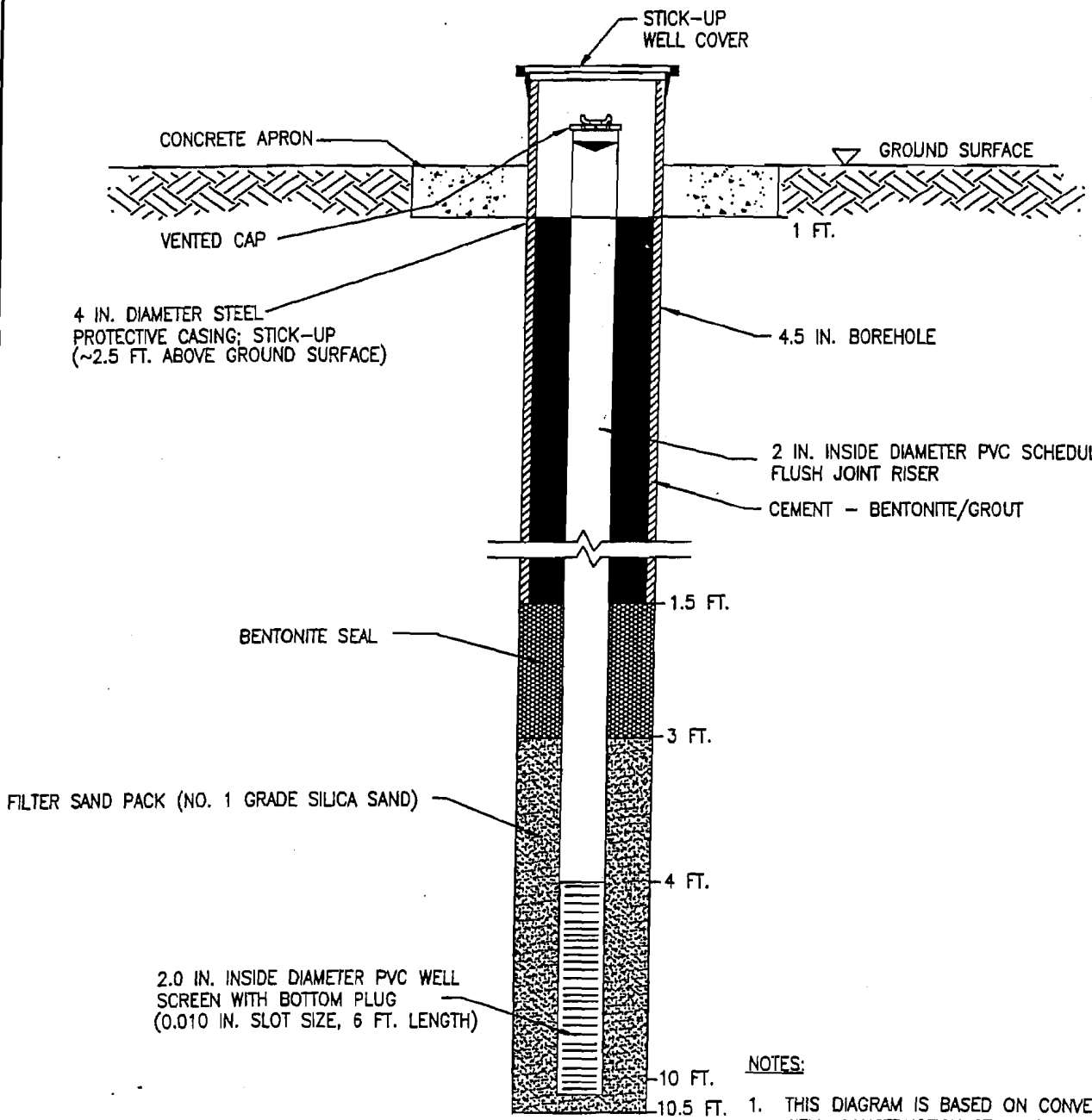
Logged by: ROB WASSERMAN Date: 21 MARCH 2002

Drilling Contractor: ADT Driller: LES DARROW

WELL SPECIFICATIONS: SEE WELL CONSTRUCTION SCHEMATIC

Diam. of Riser:	2"	Screen Interval:	4-10' bgs	Sandpack:	3-10.5' bgs	Grout:	1-1.5' bgs
Bottom of Hole:	10.5' bgs	Riser Interval:	4' bgs - 2.5' ags	Bentonite:	1.5-3' bgs	Cover:	STICK-UP

MWHR6-20 MONITORING WELL SCHEMATIC CONSTRUCTION DIAGRAM



NOTES:

1. THIS DIAGRAM IS BASED ON CONVENTIONAL WELL CONSTRUCTION STANDARD OPERATING PROCEDURES.
2. THIS MONITORING WELL WAS INSTALLED USING DRIVE AND WASH DRILLING TECHNIQUES.

MONITORING WELL SECTION
NOT TO SCALE

DATE INSTALLED: 21 MARCH 2002

FILE: F:\STATEANDLOCAL\STATE\DASNY\61317.23\WELLCONSTRUCTIONDIAGRAMS\MWHR6-20.DWG

EA ENGINEERING, PC ® AND ITS AFFILIATE EA ENGINEERING, SCIENCE, AND TECHNOLOGY

HUDSON RIVER PSYCHIATRIC CENTER
POUGHKEEPSIE, NEW YORK

MWHR6-20
LANDFILL AREA 6
MONITORING WELL SCHEMATIC
CONSTRUCTION DIAGRAM

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT NO	FIGURE
					17 JUNE 2002	61317.23	

Hudson River Psychiatric Center
Supplemental Hydrogeological Investigation - Landfill Area 6

BORING LOG

MWHR6-20D

PROJECT NAME: Hudson River Psychiatric Center
PROJECT No.: #40307.00
CLIENT: Hudson Heritage, LLC
WELL TYPE: 4" Bedrock Monitoring
WELL LOCATION: Landfill Area 6
CITY/TOWN: Poughkeepsie
COUNTY: Dutchess
STATE: New York

Elevations:
Ground Surface Elevation: 108.5'
Water Level Reference Point: TOC
Water Level Reference Point Elevation: 109.74

Water Levels:
Date: 9/15/03
Depth to Water: 5.99'

Starting Date: 7/16/03
Stop Date: 7/21/03
Method: HSA, Air Rotary
Contractor: ADT, Inc.
Driller: Les, Walker
Rig: CME-#184
Geologist: Will Olsen

Well Details	Depth (Depths in Feet)	Sample #	Blow Counts	Recovery (Depths in Inches)	Unified	Stratum and Field Descriptions:	Field Notes, Comments, PID Readings
4" Steel Casing (stick-up)	2			10		brown SILT, fmc Gravel blackened wood	moist
	4			10		grey-brown CLAY, Silt, Sand, trace Gravel chunks of blackened wood	moist
	6			8		2" brown SILT, Sand, Gravel 6" brown-grey SILT, Clay, blackened wood	moist
	8			10		7" brown Sand, Silt, fn Gravel 3" brown SILT, Clay, chunk of wood	moist
Overburden	10			14		2" grey-brown SILT, Clay, crs Sand 12" grey-brown SILT, Clay, trace Sand, Gra	moist
Bedrock Steel Casing cement grouted to 12 ft set 1.7 ft in Bedrock	12					Refusal at 10.3 ft - BEDROCK (shale)	dry cuttings
	14						
	16						
	18						dry cuttings
Open bore hole 12 - 25 ft	20						
	22						hit water at 22 ft, cuttings wet
	24						
Bottom of Well							At 25 ft, Q > 1 gpm
	26					Stopped Drilling at 25 ft	
	28						
	30						
	32						
	34						
	36						
	38						
	40						

NOTES:

Well installed in accordance to 6 NYCRR Part 360 - 2.11 (a)(8)(i)(ii) specifications.
Well developed for one hour using air-lifting methods.
Well installed as couplet to overburden well MWHR6-20S.

Drilling Information:

	Casting	Sample	Tube	Core
Type:				
Diam.:				
Weight:				
Fall:				

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Job. No.	61317.23
Client:	DASNY
Location:	HRPC
Drilling Method:	Drive & Wash - 4" ID Steel Casing; CME-75 Mobile
Boring No.	MWHR6-21
Sampling Method:	2'x2" Split Spoon 140lbs. Hammer
Sheet	1 of 1
Drilling Water Level Date	
Drilling Water Level Time	
Start Date/Times	1440 3/20/02
Finish Date/Times	1540 3/20/02
Surface Conditions:	Peat/Humus
Coordinates:	N: E:
Surface Elevation:	FT MSL
Well Riser Elevation:	FT MSL

Sample Type	Inches Driven/In. Recvrd	Dpth Csg.	Samp # / depth (ft)	PID (ppm) Above bk.	Blows per 6"	Ft bgs	USCS Log	SOIL DESCRIPTION
						0	Pt/OL	Peat/Humus at surface
						1		
						2		
						3		
SS	24/13	4	4-6	ϕ	4, 8, 7, 7	4	ML	0-13" Tan/Grey Silt w/trace clay; trace medium angular gravel; fill; little tan mottling; trace fine sand
						5		
						6		
						7		
						8		
SS	24/3	9	9-11	ϕ	2, 1, 2, 2	9	ML	0-3" Same As Above (4-6'; 0-13") w/trace Red/Brown silt; wood & organics at base; At or near suspected H_2O table
						10		
						11		
						12		
						13		
SS	24/21"	14	14-16	ϕ	2, 1, 2, 2	14		0-21" Recovered coarse angular gravel; evidence of fill in fill; possible collapse
						15	ML	
SS	24/1	14	16-18	ϕ	3, 4, 3, 4	16		0-1" Brown silt w/trace clay; trace medium sub-angular gravel; possibly fill.
						17		END OF BORING AT 18' bgs.
						18	EoB	
						19		

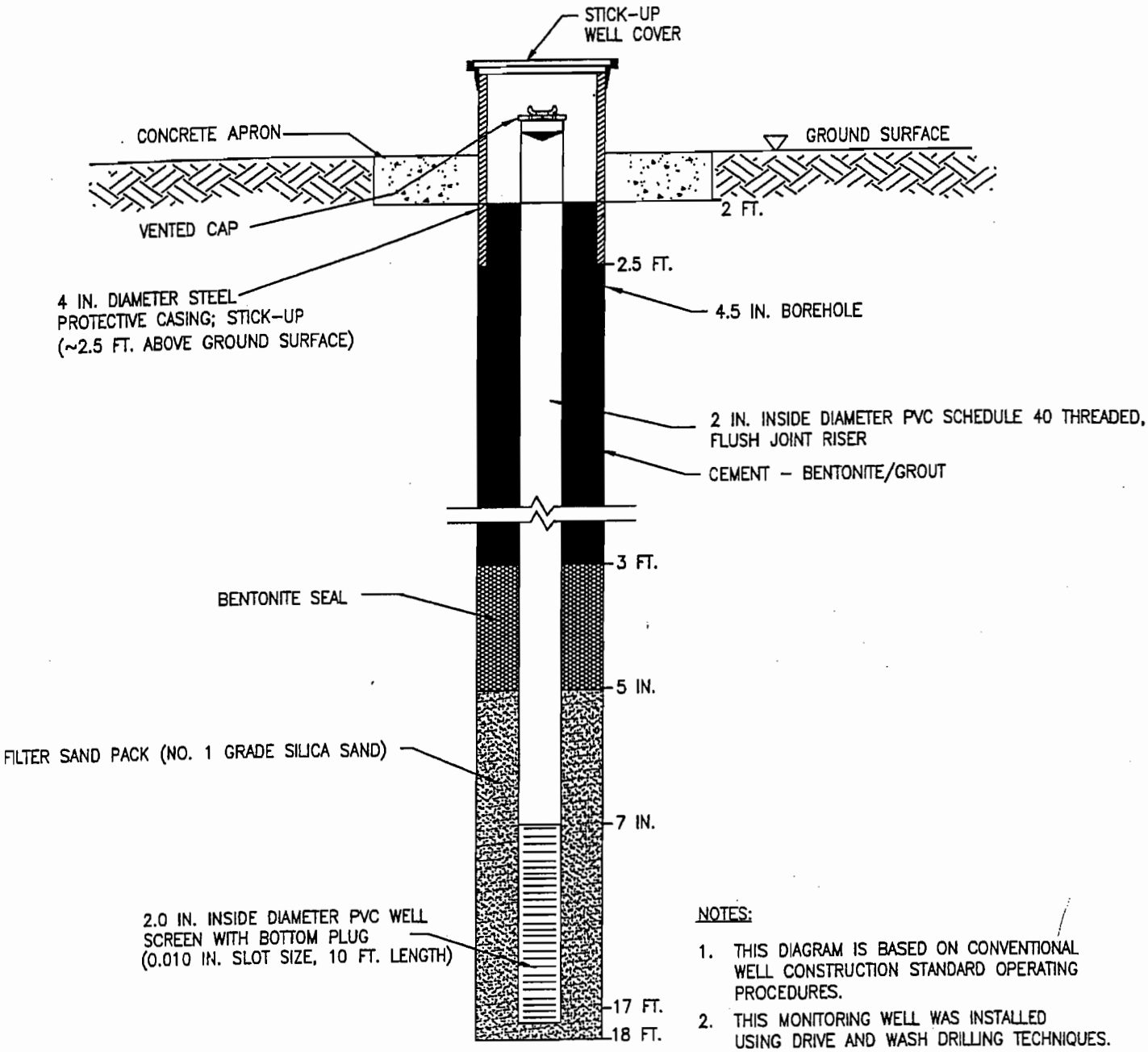
Logged by: ROB WASSERMAN Date: 20 MARCH 2002

Drilling Contractor: ADT Driller: LES DARROW

WELL SPECIFICATIONS: SEE WELL CONSTRUCTION SCHEMATIC

Diam. of Riser: 2" Screen Interval: 7-17' bgs Sandpack: 5-18' bgs Grout: 3-2' bgs

MWHR6-21 MONITORING WELL SCHEMATIC CONSTRUCTION DIAGRAM



NOTES:

1. THIS DIAGRAM IS BASED ON CONVENTIONAL WELL CONSTRUCTION STANDARD OPERATING PROCEDURES.
2. THIS MONITORING WELL WAS INSTALLED USING DRIVE AND WASH DRILLING TECHNIQUES.

MONITORING WELL SECTION
NOT TO SCALE

DATE INSTALLED: 20 MARCH 2002

FILE: F:\STATEANDLOCAL\STATE\DASNY\61317.23\WELLCONSTRUCTIONDIAGRAMS\MWHR6-21.DWG

EA ENGINEERING, PC AND ITS AFFILIATE EA ENGINEERING, SCIENCE, AND TECHNOLOGY	HUDSON RIVER PSYCHIATRIC CENTER POUGHKEEPSIE, NEW YORK	MWHR6-21 LANDFILL AREA 6 MONITORING WELL SCHEMATIC CONSTRUCTION DIAGRAM	

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT NO	FIGURE
DM	RW	KS	RW	NONE	17 JUNE 2002	61317.23	

Hudson River Psychiatric Center
Supplemental Hydrogeological Investigation - Landfill Area 6

BORING LOG

MWHR6-21D

PROJECT NAME: Hudson River Psychiatric Center
PROJECT No.: #40307.00
CLIENT: Hudson Heritage, LLC
WELL TYPE: 4" Bedrock Monitoring
WELL LOCATION: Landfill Area 6
CITY/TOWN: Poughkeepsie
COUNTY: Dutchess
STATE: New York

Elevations:
Ground Surface Elevation: 116.7'
Water Level Reference Point: TOC
Water Level Reference Point Elevation: 118.02'

Water Levels:
Date: 9/15/03
Depth to Water: 11.79'

Starting Date: 7/16/03
Stop Date: 7/21/03
Method: HSA, Air-Rotary
Contractor: ADT, Inc.
Driller: Les, Walker
Rig: CME-#184
Geologist: Will Olsen

Well Details	Depth (Depths in Feet)	Sample #	Blow Counts	Recovery (Depths in Inches)	Unified	Stratum and Field Descriptions:	Field Notes, Comments, PID Readings
4" Steel Casing	2			18		4" Coal Ash 14" grey SILT and CLAY, dense, trace organics and Gravel	
	4			16		2" Coal Ash 14" grey SILT, Clay, w/ 2" broken rock	similar to clay cap exposed in trenches
	6			18		brown-grey mottled SILT and CLAY dense, trace organic matter, trace Gravel	
	8			16		2" Same as previous spoon 14" grey SILT and CLAY, mottled	bottom 6" wet
	10			18		14" grey SILT and CLAY, trace Gravel, org. 4" plywood	
	12			12		plywood, saturated	outside of spoon wet
	14			12		plywood, dark soft fiberous organic matter	saturated
	16			18		grey SILT, mod organic content, piece wood trace fn Gravel	saturated
	18			24		10" same as previous spoon 14" grey CLAY, uniform, plastic	saturated
	20			6		grey CLAY, soft	saturated
	22			18		grey CLAY, soft	saturated
	24			24		grey CLAY and SILT, soft	saturated
	26			24		grey SILT and CLAY, soft	saturated
	28			18		grey SILT and CLAY, soft	saturated
	30			18		grey SILT and CLAY, soft	saturated
	32			24		grey CLAY and SILT, soft	saturated
	34			12		6" grey SILT, fn Gravel, dense 6" broken shale fragments	sediment stiffened at 32.5 ft
	36			8		grey SILT, fn Gravel, dense	
Steel Casing cement grouted				12		brown SILT, Sand, Gravel, dense, broken rock	
to 39 ft set 1.7 ft in Bedrock	38					Refusal at 37.3 - BEDROCK (shale)	advanced auger to 39 ft At 42', Q = 2gpm
	44					Stopped Drilling at 44 ft	

NOTES:

Well installed in accordance to 6 NYCRR Part 360 - 2.11 (a)(8)(i)(ii) specifications.
Well developed for 15 minutes by air lifting.
Well installed as couplet to overburden well MWHR6-21.

Drilling Information:

	Casing	Sample	Tube	Core
Type:				
Diam.:				
Weight:				
Fall:				

Hudson River Psychiatric Center
Supplemental Hydrogeological Investigation - Landfill Area 6

BORING LOG

MWHR6-22R

PROJECT NAME: Hudson River Psychiatric Center
PROJECT No.: #40307.00
CLIENT: Hudson Heritage, LLC
WELL TYPE: 2" PVC Overburden Monitoring
WELL LOCATION: Landfill Area 6
CITY/TOWN: Poughkeepsie
COUNTY: Dutchess
STATE: New York

Elevations:
Ground Surface Elevation: 123.9'
Water Level Reference Point: T.O.PVC
Water Level Reference Point Elevation: 126.24'

Water Levels:
Date: 9/15/03
Depth to Water: 12.09'

Starting Date: 7/15/03
Stop Date: 7/15/03
Method: Hollow Stem Auger
Contractor: ADT, Inc.
Driller: Les, Walker
Rig: CME-#184
Geologist: Will Olsen

Well Details	Depth (Depths in Feet)	Sample #	Blow Counts	Recovery (Depths in Inches)	Unified	Stratum and Field Descriptions:	Field Notes, Comments, PID Readings
Cement Grout 0- 5 ft	1			12		4" ASPHALT, crushed Stone	
	2					8" dark brown SILT, trace crs Gravel	
	3			0			
	4						large rock in spoon tip
	5			0			
6" Finer Sand Pack	6						crushed stone and plastic in tip
Bentonite Chips (Hydrated) 5.5-8.5 ft	7			12		dark brown SILT, organic matter, decaying wood, broken rock fragments	
	8						
	9			6		dark grey SILT, 2" rock, organic matter	slight organic decay odor
6" Finer Sand Pack Coarse Sand Pack 9-16 ft	10						tip moist
	11			4		dark grey SILT, trace Clay, organic matter	slight odor of organic decay
Screened Interval 11-16 ft	12						sample moist
	13			18		9 " grey-brown mottled SILT, fn Gravel	saturated, water at 12-13 ft
	14					9" dark grey mottled SILT, dense, fn Gravel	slightly moist
	15			16		10" brown-grey SILT, fn Sand, trace fn Gravel	
Bottom of Well	16					6" broken blue-black Shale fragments	
	17					Refusal at 16.1 ft - BEDROCK (Shale)	
	18						
	19						
	20						

NOTES:

Well installed in accordance to 6 NYCRR Part 360 - 2.11 (a)(8)(i)(ii) specifications
Well developed by bailing 10 well volumes.
Well replaces cross-formational well MWHR6-22 installed by EA Engineering.

Drilling Information:

	Casting	Sample	Tube	Core
Type:				
Diam.:				
Weight:				
Fall:				

Hudson River Psychiatric Center
Supplemental Hydrogeological Investigation - Landfill Area 6

BORING LOG

MWHR6-23S

PROJECT NAME: Hudson River Psychiatric Center
PROJECT No.: #40307.00
CLIENT: Hudson Heritage, LLC
WELL TYPE: 2" PVC Overburden Monitoring
WELL LOCATION: Landfill Area 6
CITY/TOWN: Poughkeepsie
COUNTY: Dutchess
STATE: New York

Elevations:
Ground Surface Elevation: 123.9'
Water Level Reference Point: T.O.PVC
Water Level Reference Point Elevation: 123.71'

Water Levels:
Date: 9/15/03
Depth to Water: 9.18'

Starting Date: 7/17/03
Stop Date: 7/17/03
Method: Hollow Stem Auger
Contractor: ADT, Inc.
Driller: Les, Walker
Rig: CME-#184
Geologist: Will Olsen

Well Details	Depth (Depths in Feet)	Sample #	Blow Counts	Recovery (Depths in Inches)	Unified	Stratum and Field Descriptions:	Field Notes, Comments, PID Readings
Cement Grout 0- 2 ft	1			16		1" Asphalt 11" black, white, and red Coal Ash 4" grey SILT, trace fn Gravel, dry, mod. dense	
	2						
6" Finer Sand Pack Bentonite Chips (Hydrated) 6" Finer Sand Pack	3			20		grey-olive mottled SILT amd CLAY slightly plastic	moist
	4						
Coarse Sand Pack 4-16 ft	5			14		grey-olive mottled SILT amd CLAY	bottom few inches saturated
	6						
Top of Screen	7			20		15" mottled SILT 1" crs SAND, grey Silt 4" mottled SILT and CLAY, very dense	wet moist
	8						
	9			14		m-c SAND, fn sub angular Gravel trace brown Silt	saturated outside of spoon wet
	10						
	11			20		14" same as last spoon 6" brown SILT, moderately dense	saturated
Screened Interval 6-16 ft	12						
	13			16		10" brown SILT, mod. Dense 6" grey SILT and CLAY, dense	saturated
	14						
	15			18		grey SILT and CLAY, uniform, dense	saturated
Bottom of Well	16						
boring backfilled with coarse sand	17			24		grey SILT and CLAY grading to SILT	saturated
	18						
	19			14		10" grey SILT 4" grey SILT, dense, f-c angular Gravel 1.5" rock present Refusal at 20.2 ft - Bedrock (Shale)	saturated broken rock fragment in tip
	20						

NOTES:

Well installed in accordance to 6 NYCRR Part 360 - 2.11 (a)(8)(i)(ii) specifications
Well developed by bailing 10 well volumes.
Well installed as couplet to bedrock well MWHR6-23D

Drilling Information:

	Casing	Sample	Tube	Core
Type:				
Diam.:				
Weight:				
Fall:				

Hudson River Psychiatric Center
Supplemental Hydrogeological Investigation - Landfill Area 6

BORING LOG

MWHR6-23D

PROJECT NAME: Hudson River Psychiatric Center
PROJECT No.: #40307.00
CLIENT: Hudson Heritage, LLC
WELL TYPE: 4" Bedrock Monitoring
WELL LOCATION: Landfill Area 6
CITY/TOWN: Poughkeepsie
COUNTY: Dutchess
STATE: New York

Elevations:
Ground Surface Elevation: 123.0'
Water Level Reference Point: TOC
Water Level Reference Point Elevation: 122.64'

Water Levels:
Date: 9/15/03
Depth to Water: 16.29'

Starting Date: 7/18/03
Stop Date: 7/22/03
Method: HSA, Air-Rotary
Contractor: ADT, Inc.
Driller: Les, Walker
Rig: CME-#184
Geologist: Will Olsen

Well Details	Depth (Depths in Feet)	Sample #	Blow Counts	Recovery (Depths in Inches)	Unified	Stratum and Field Descriptions:	Field Notes, Comments, PID Readings
4" Steel Casing	2					For description of overburden geology, see boring log MWHR6-23S	
	4						
	6						
	8						
	10						
	12						
	14						
	16						
	18						
Steel Casing cement grouted to 20 ft set 2.0 ft in Bedrock	20					Bedrock at 18 ft-Shale	Augered to 20 ft
	22						
	24						
	26						
	28					Shale	
Open Bore Hole 20-48'	30						
	32						
	34						
	36						
	38					shale	hit water at 42 ft, dust ceased momentari
	48					Stopped drilling at 48 ft	then resumed hit water again at 44', Q = 2gpm

NOTES:

Well installed in accordance to 6 NYCRR Part 360 - 2.11 (a)(8)(i)(ii) specifications.
Well developed for 30 minutes by air lifting.
Well installed as couplet to overburden well MWHR6-23S

Drilling Information:

	Casting	Sample	Tube	Core
Type:				
Diam.:				
Weight:				
Fall:				

Hudson River Psychiatric Center
Supplemental Hydrogeological Investigation - Landfill Area 6

BORING LOG

PZ-1

PROJECT NAME: Hudson River Psychiatric Center
PROJECT No.: #40307.00
CLIENT: Hudson Heritage, LLC
WELL TYPE: 1" PVC Overburden Monitoring
WELL LOCATION: Landfill Area 6
CITY/TOWN: Poughkeepsie
COUNTY: Dutchess
STATE: New York

Elevations:
Ground Surface Elevation: 104.2'
Water Level Reference Point: T.O.PVC
Water Level Reference Point Elevation: 104.2'

Water Levels:
Date: 9/15/03
Depth to Water: 3.12'

Starting Date: 8/27/03
Stop Date: 8/27/03
Method: Direct Push
Contractor: Todd Syska, Inc.
Driller: Todd Syska
Rig: Geoprobe
Geologist: Rick Oestrike

Well Details	1" PVC	Depth (Depths in Feet)	Sample #	Blow Counts	Recovery (Depths in Inches)	Unified	Stratum and Field Descriptions:	Field Notes, Comments, PID Readings
10 ft riser		1			12		brown SILT, Gravel, roots present, moist	
		2			6		brown-grey m-c SAND, Silt, moist	
		3			12		grey broken Rock and Silt	
		4			6		brown-grey CLAY, Sand, Silt, Gravel	
		5			3		brown SILT and Sand, saturated	
		6			9		brown SAND, Gravel and Clay, saturated	
					18		grey CLAY, moist	
5 ft screen		7			6		grey CLAY, Gravel, wet	
		8						
		9						
		10			12		grey SAND and Gravel, Clay	
		11			6		grey CLAY	
Bottom of well at 11.3 ft		12					refusal at 11.3 ft bgs	no waste encountered
		13						
		14						
		15						
		16						
		17						
		18						
		19						
		20						

NOTES:

Drilling Information:

	Casting	Sample	Tube	Core
Type:				
Diam.:				
Weight:				
Fall:				

Hudson River Psychiatric Center
Supplemental Hydrogeological Investigation - Landfill Area 6

BORING LOG

PZ-2

PROJECT NAME: Hudson River Psychiatric Center
PROJECT No.: #40307.00
CLIENT: Hudson Heritage, LLC
WELL TYPE: 1" PVC Overburden Monitoring
WELL LOCATION: Landfill Area 6
CITY/TOWN: Poughkeepsie
COUNTY: Dutchess
STATE: New York

Elevations:
Ground Surface Elevation: 111.6'
Water Level Reference Point: T.O.PVC
Water Level Reference Point Elevation: 113.01'

Water Levels:
Date: 9/15/03
Depth to Water: 6.16'

Starting Date: 8/27/03
Stop Date: 8/27/03
Method: Direct Push
Contractor: Todd Syska, Inc.
Driller: Todd Syska
Rig: Geoprobe
Geologist: Rick Oestrike

Well Details	1" PVC	Depth (Depths in Feet)	Sample #	Blow Counts	Recovery (Depths in Inches)	Unified	Stratum and Field Descriptions:	Field Notes, Comments, PID Readings
10 ft riser		1			24		brown SAND, Gravel, almost dry	
		2						
		3						
		4						
		5			4		brown SAND, Gravel, almost dry	
		6			11		brown SILT, Gravel and Sand, moist	
		7						
		8			3		broken Asphalt (trash), moist	
		9			12		brown Sand and Silt, Gravel, saturated	
10 ft screen		10						
		11			6		brown Sand and Gravel, Silt paper present, moist	
		12						
		13			0		no recovery	
		14						
		15						
		16						
		17			9		brown SILT, Clay and Gravel, saturated	
		18						
		19			3		grey CLAY, f Gravel, some fabric, saturated	mild organic odor present
Bottom of well at 19 ft		20					refusal at 19.2 ft	

NOTES:

Drilling Information:

	Casting	Sample	Tube	Core
Type:				
Diam.:				
Weight:				
Fall:				

Hudson River Psychiatric Center
Supplemental Hydrogeological Investigation - Landfill Area 6

BORING LOG

PZ-3

PROJECT NAME: Hudson River Psychiatric Center
PROJECT No.: #40307.00
CLIENT: Hudson Heritage, LLC
WELL TYPE: 1" PVC Overburden Monitoring
WELL LOCATION: Landfill Area 6
CITY/TOWN: Poughkeepsie
COUNTY: Dutchess
STATE: New York

Elevations:
Ground Surface Elevation: 104.2'
Water Level Reference Point: T.O.PVC
Water Level Reference Point Elevation: 106.06'

Water Levels:
Date: 9/15/03
Depth to Water: 2.35'

Starting Date: 8/27/03
Stop Date: 8/27/03
Method: Direct Push
Contractor: Todd Syska, Inc.
Driller: Todd Syska
Rig: Geoprobe
Geologist: Rick Oestrike

Well Details	1" PVC	Depth (Depths in Feet)	Sample #	Blow Counts	Recovery (Depths in Inches)	Unified	Stratum and Field Descriptions:	Field Notes, Comments, PID Readings
		1			6		brown SAND and GRAVEL, some Silt saturated	
		2						
		3						
		4						
		5			9		brown GRAVEL, some Sand, saturated	
10 ft screen		6						
		7			3		grey CLAY, trace Sand and f Gravel, moist	
		8						
		9			2		brown SAND and GRAVEL, wet	
					16		brown CLAY, wet	
		10						
					12		yellow-grey CLAY, some Gravel	
		11						
					12		grey CLAY, wet	
		12						
		13			18		grey CLAY, wet	
		14			18		grey CLAY, f Gravel, Silt, moist	
		15					shale fragments in tip	mild organic odor present
Bottom of well at 15.3 ft		16					refusal at 15.3 ft bgs	
		17						
		18						
		19						
		20						

NOTES:

Drilling Information:

	Casting	Sample	Tube	Core
Type:				
Diam.:				
Weight:				
Fall:				

Hudson River Psychiatric Center
Supplemental Hydrogeological Investigation - Landfill Area 6

PZ-4

BORING LOG

PROJECT NAME: Hudson River Psychiatric Center
PROJECT No.: #40307.00
CLIENT: Hudson Heritage, LLC
WELL TYPE: 1" PVC Overburden Monitoring
WELL LOCATION: Landfill Area 6
CITY/TOWN: Poughkeepsie
COUNTY: Dutchess
STATE: New York

Elevations:
Ground Surface Elevation: 115.1'
Water Level Reference Point: T.O.PVC
Water Level Reference Point Elevation: 117.10'

Water Levels:
Date: 9/15/03
Depth to Water: 9.87'

Starting Date: 8/27/03
Stop Date: 8/27/03
Method: Direct Push
Contractor: Todd Syska, Inc.
Driller: Todd Syska
Rig: Geoprobe
Geologist: Rick Oestrike

Well Details	1" PVC	Depth (Depths in Feet)	Sample #	Blow Counts	Recovery (Depths in Inches)	Unified	Stratum and Field Descriptions:	Field Notes, Comments, PID Readings
		1			9		brown SILT, with f Gravel, roots present	
		2			6		grey, broken cement, dry	
		3			21		black Coal Ash, dry	
		4						
		5						
		6			6		brown SILT, Gravel, roots piece of plastic present	
		7						
		8						
15 ft screen		9						
		10			0		no recovery	
		11						
		12						
		13						
		14			0		no recovery	
		15						
		16			6		grey CLAY, f Gravel, saturated	
		17						
		18						
		19			6		grey CLAY, saturated	
		20						

NOTES:

Drilling Information:

	Casting	Sample	Tube	Core
Type:				
Diam.:				
Weight:				
Fall:				

Hudson River Psychiatric Center
Supplemental Hydrogeological Investigation - Landfill Area 6

BORING LOG

PZ-5

PROJECT NAME: Hudson River Psychiatric Center
PROJECT No.: #40307.00
CLIENT: Hudson Heritage, LLC
WELL TYPE: 1" PVC Overburden Monitoring
WELL LOCATION: Landfill Area 6
CITY/TOWN: Poughkeepsie
COUNTY: Dutchess
STATE: New York

Elevations:
Ground Surface Elevation: 118.3'
Water Level Reference Point: T.O.PVC
Water Level Reference Point Elevation: 119.86'

Water Levels:
Date: 9/15/03
Depth to Water: 11.50'

Starting Date: 8/27/03
Stop Date: 8/27/03
Method: Direct Push
Contractor: Todd Syska, Inc.
Driller: Todd Syska
Rig: Geoprobe
Geologist: Rick Oestrike

Well Details	1" PVC	Depth (Depths in Feet)	Sample #	Blow Counts	Recovery (Depths in Inches)	Unified	Stratum and Field Descriptions:	Field Notes, Comments, PID Readings
		1			6		grey crushed Stone, dry	
		2			12		brown SAND and f Gravel, moist	
		3			6		yellow-grey CLAY, c Gravel, moist	
		4			6		black Coal Ash, dry	organic odor present
		5			4		light brown SAND	
		6			8		black Coal Ash, dry	organic odor present
		7			12		light brown SILT, wet	
		8						
		9			0		no recovery, very soft material drove spoon to 16 ft	
		10						
		11						
		12						
		13			12		black Coal Ash, damp	organic odor present
		14			6		dark brown Coal Ash and Silt, wet	
		15			1		light brown SILT, Sand, and f Gravel, saturated	
		16			4		grey SILT and Sand, Gravel, saturated	
		17			20		yellow-brown SILT, saturated	
		18						
		19			12		grey CLAY, saturated	
		20					End of Boring	

NOTES:

Drilling Information:

	Casting	Sample	Tube	Core
Type:				
Diam.:				
Weight:				
Fall:				

Hudson River Psychiatric Center
Supplemental Hydrogeological Investigation - Landfill Area 6

BORING LOG

SB-1

PROJECT NAME: Hudson River Psychiatric Center
PROJECT No.: #40307.00
CLIENT: Hudson Heritage, LLC
WELL TYPE: NA
WELL LOCATION: Landfill Area 6
CITY/TOWN: Poughkeepsie
COUNTY: Dutchess
STATE: New York

Elevations:
Ground Surface Elevation: 123.5'
Water Level Reference Point: na
Water Level Reference Point Elevation: na

Water Levels:
Date: na
Depth to Water: na

Starting Date: 7/22/03
Stop Date: 7/22/03
Method: HSA
Contractor: ADT, Inc.
Driller: Les, Walker
Rig: CME-#184
Geologist: Will Olsen

Well Details	Depth (Depths in Feet)	Sample #	Blow Counts	Recovery (Depths in Inches)	Unified	Stratum and Field Descriptions:	Field Notes, Comments, PID Readings
	1						Augered to 8 ft
	2						
	3						
	4						
	5						
	6						
	7						
	8						begin continuous split-spoon sampling
	9			4		grey SILT, trace organic matter, broken rock	moist
	10						
	11			16		12" grey-olive SILT, fn Gravel 4" red-brown SILT, fn Gravel	water at 11-12 ft
	12						
	13			20		4" broken rock 16" fn GRAVEL, trace brown SILT dense near top, loosens with depth	saturated
	14						
	15			20		6" m-c SAND, brown Silt, trace fn Gravel	liquified
	16					14" brown SILT, trace fn Sand, dense	
	17					6" same as last spoon 6" broken shale	
	18					Refusal at 17 ft - BEDROCK (Shale)	
	19						
	20						

NOTES:

Drilling Information:

	Casting	Sample	Tube	Core
Type:				
Diam.:				
Weight:				
Fall:				

Hudson River Psychiatric Center
Supplemental Hydrogeological Investigation - Landfill Area 6

BORING LOG

SB-2

PROJECT NAME: Hudson River Psychiatric Center
PROJECT No.: #40307.00
CLIENT: Hudson Heritage, LLC
WELL TYPE: NA
WELL LOCATION: Landfill Area 6
CITY/TOWN: Poughkeepsie
COUNTY: Dutchess
STATE: New York

Elevations:
Ground Surface Elevation: 125.1'
Water Level Reference Point: na
Water Level Reference Point Elevation: na

Water Levels:
Date: na
Depth to Water: na

Starting Date: 7/22/03
Stop Date: 7/22/03
Method: HAS
Contractor: ADT, Inc.
Driller: Les, Walker
Rig: CME-#184
Geologist: Will Olsen

Boring Log	Depth (Depths in Feet)	Sample #	Blow Counts	Recovery (Depths in Inches)	Unified	Stratum and Field Descriptions:	Field Notes, Comments, PID Readings
	1						Augered to 8 ft
	2						
	3						
	4						
	5						
	6						
	7						
	8						begin continuous split-spoon sampling
	9			12		m SAND, grey SILT, trace f-c Gravel poorly sorted	moist
	10						
	11			6		same as previous spoon	
	12						
	13			0			spoon wet
	14						
	15			16		mottled CLAY and SILT, dense, plastic	moist
	16						
	17			24		mottled grey SILT, fn Sand, dense moderate organic matter: small twigs 1" fn SAND, w/ grey Silt at 17.5 ft	
	18						moist
	19			6		2" grey SILT, dense, trace fn Gravel 4" broken shale	
	20					Refusal at 19.1 ft - BEDROCK (Shale)	

NOTES:

Drilling Information:

	Casting	Sample	Tube	Core
Type:				
Diam.:				
Weight:				
Fall:				