FINAL



SHEPLEY'S HILL LANDFILL SUPPLEMENTAL GROUNDWATER AND LANDFILL CAP ASSESSMENT FOR LONG-TERM MONITORING AND MAINTENANCE – ADDENDUM REPORT

SHEPLEY'S HILL LANDFILL

FORMER FORT DEVENS ARMY INSTALLATION, DEVENS, MA

AUGUST 2011

BOOK 1 OF 4

Prepared for:
US Army Corp of Engineers
New England District
Concord, Massachusetts

Prepared by:
Sovereign Consulting Inc.
Contract No.: W912WJ-10-D-0003
Delivery Order: 0002



TRANSMITTAL MEMO

		Copies
То	Ginny Lombardo – USEPA	CD / Attachments
	David Chaffin – MADEP	CD / Attachments
	Hui Liang – MADEP	CD / Attachments
	Carolyn L. McCreary - Ayer Board of Selectmen	CD / Attachments
	James R. Greacen - Mabbett & Associates, Inc.	CD / Attachments
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	Marc Cicalese - Sovereign Consulting	CD / Attachments
	Ron Ostrowski - Mass Development	CD / Attachments

Date 19 August 2011

Subject: Shepley's Hill Landfill - Supplemental Groundwater and Landfill Cap

(including 1 copy to Haley & Aldrich)

Assessment for Long-term Monitoring and Maintenance Addendum Report

(Final Version)

Contract Number GS-10F-0230J, Delivery Order W912WJ-05-F-0037

On behalf of the US Army Corps of Engineers (USACE) New England District and the Army BRAC Environmental Office at Devens, Sovereign is pleased to provide the following attachments:

- 1. CD
- 2. Binder Cover Pages and Spines
- 3. Replacement Report Text
- 4. Replacement Figure 30
- Insert to Supplement Appendix I
- 6. Insert to Supplement Appendix K

These items are provided to update the May 2011 version of the Shepley's Hill Landfill Supplemental Groundwater and Landfill Cap Assessment for Long-term Monitoring and maintenance Addendum Report.

Please contact Bob Simeone or myself, if there are questions regarding the attachments

Sincerely

Philip D McBain, LSP Project Manager

Enclosure: As noted above

Sovereign Consulting Inc 905B South Main Street, Suite 202 Mansfield, Massachusetts 02048 Tel 508-339-3200 / Fax 508-339-3248

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	Ron Ostrowski - Mass Development	CD / Attachments
	Marc Cicalese - Sovereign Consulting	CD / Attachments
	(including 1 copy to Haley & Aldrich)	

Date 6 June 2011

Subject:

Shepley's Hill Landfill - Supplemental Groundwater and Landfill Cap Assessment for Long-term Monitoring and Maintenance Addendum Report (Army Draft)

Contract Number GS-10F-0230J, Delivery Order W912WJ-05-F-0037

On behalf of the US Army Corps of Engineers (USACE) New England District and the Army BRAC Environmental Office at Devens, Sovereign is pleased to provide the following attachments:

- 1. CD
- Binder Cover Pages and Spines
- 3. Replacement Report Text
- 4. Replacement Figures (2-28, 45, and 55-57)
- 5. Replacement Table 2 and Table 7
- 6. Insert to Supplement Appendix I
- 7. New Appendix K
- New Appendix L

These items are provided to update the December 2010 version of the Shepley's Hill Landfill Supplemental Groundwater and Landfill Cap Assessment for Long-term Monitoring and maintenance Addendum Report.

TRANSMITTAL MEMO

Please contact Bob Simeone or myself, if there are questions regarding the attachments Sincerely

Philip D McBain, LSP Project Manager

Enclosure: Shepley's Hill Landfill Supplemental Groundwater and Landfill Cap Assessment for Long-

term Monitoring and Maintenance Addendum Report, May 2011.

Army Response to MassDEP Comments dated 30 June 2011 On

DRAFT FINAL SHEPLEY'S HILL LANDFILL SUPPLEMENTAL GROUNDWATER AND LANDFILL CAP ASSESSMENT FOR LONG-TERM MONITORING AND MAINTENANCE – ADDENDUM REPORT

Former Fort Devens Army Installation August 5 2011

1. Section 5.1: To address the discrepancies with the presumed bedrock depths acknowledged here (refer to MassDEP Comments 1 and 9 on the draft report), the Army agreed during the May 19, 2011 BCT meeting to install a monitoring well transect across Nonacoicus Brook in the vicinity of temporary well SHM-10-08. The well drilling method used to install the wells will be capable of confirming the presence of an east-west trending bedrock trough beneath the brook. Well screens will be placed at depths appropriate to serve as long-term monitoring points and sentinel well between the site and the MacPherson water supply well.

<u>Response</u>: Such changes or enhancements to the current groundwater LTM network will be performed pending implementation of an updated remedy for SHL.

- Section 6.3: The supplemental analysis provided here does not strengthen the hypothesis
 that arsenic precipitates along a "redox boundary" in the vicinity of Nonacoicus Brook; valid
 alternative hypotheses remain (refer to MassDEP Comment 2 on the draft report):
 - The configured cross-sections C-C' and D-D' do not demonstrate that the plume terminated south of cross-section C-C'. An almost 200-foot gap through which the plume could extend to the northwest separates wells SHM-10-20 and SHM-10-26 on cross-section C-C'.
 - The results from the 2010 field effort indicate that vertical flow and discharge to
 Nonacoicus Brook and adjacent wetlands, rather than precipitation along a "redox
 boundary", may explain the observed arsenic distribution. In particular, cross sections
 D-D' and F-F' indicate that the plume may ascend from depth to discharge points in
 Nonacoicus Brook and the adjacent wetlands (note the upward trajectory of the plume
 core between wells SHM-10-27 and SHM-10-21 in Figure 9 and between SHM-10-23 and
 SHM-10-19 in Figure 11).

Rather than undertaking additional studies in an attempt to obtain conclusive results, which may not be feasible due to the complex geochemical conditions in the vicinity of Nonacoicus Brook, the Army agreed during the May 19, 2011 BCT meeting to implement a surface water

and groundwater monitoring program that includes periodic collection and analysis of surface water samples from the portion of the brook where discharge of site-impacted groundwater may occur and installation of periodic sampling of a monitoring wells transect across Nonacoicus Brook in the vicinity of temporary well SHM-10-08 (refer to previous comment).

Response: The Army respectively disagrees. In regards to the 200-foot gab cited between SHM-10-20 and SHM-10-26, the wells SHM-10-21, SHM-10-10, and SHM-10-22 are located between this gap, but located along the upgradient D-D' cross-section line. The highest concentration reported within the profiling samples reported an arsenic concentration of 349-ug/l (SHM-10-21 at 41-foot sampling depth). The remaining two locations reported arsenic concentrations less than 2.5-ug/l. Higher concentrations of Arsenic were reported within wells SHM-10-21, SHM-19, and SHM-10-17, which are east of this gap, and evaluated by the downgradient wells SHM-10-20 and SHM-10-18. These wells indicate a reduction in the dissolved arsenic concentrations from a high of 1,860-ug/l (D-D' line in well SHM-10-17) to a concentration of 429-ug/l (C-C' line in well SHM-10-20).

Bedrock contouring also plays a part in this upward trend reflected in Figures 9 and 10. Next, surface water and sediment sampling conducted by Harding in 2002 and AMEC in 2007 show no conclusive evidence that SHL is a source of a surface water / sediment impact. Each of these two sampling programs reported the highest arsenic concentrations within samples obtained from the upstream Sawmill Brook sampling points. Future surface water / sediment sampling will be performed periodically to confirm these results pending implementation of an updated remedy for SHL.

3. Section 6.4.2.2: The supplemental analysis presented here does not strengthen the hypothesis that the wetlands that were buried beneath the landfill acted as a significant source of dissolved carbon or dissolved arsenic contamination before the landfill was constructed (refer to MassDEP Comment 3 on the draft report). While the cited literature indicates that the geochemical conditions associated with wetlands and peat are generally reducing, the presence of peat is not sufficient to demonstrate a significant groundwater impact attributable to a wetland: the presence of a pre-existing flow regime that transported reducing groundwater from those wetlands to a significant portion of the underlying and downgradient aquifer is also necessary. The report does not include such a demonstration. Further, the cited literature concerning conditions in Bangladesh appears to be more representative of current site conditions than pre-landfill condition; the situation in Bangladesh involves peat that was buried, not peat in existing wetland, and therefore reveals little about the pre-landfill conditions at Devens. In summary, the pre-landfill impacts of the now-buried wetlands are not known and the potential impacts on the remedial alternatives are not known. In particular, the claim that landfill removal would only reduce carbon input by 25 to 50 percent is not reliable.

<u>Response</u>: The Army respectively disagrees with MassDEPs opinion. The fact that peat formed at the site mandates that reducing conditions exist (and existed at the site). Peat

cannot form under oxidative conditions, which was the point of citing the textbook and research references. This is not a site-specific phenomena but a proven scientific fact. While it is impossible to prove through sampling or other investigative methods the methods of arsenic migration in the subsurface prior to the landfill placement, the existence of peat necessitates reducing conditions. The presence of reducing conditions coupled with the presence of arsenic in aquifer sands documented through this and other studies by the Army, USEPA and MassDEP indicates that arsenic mobilization must have occurred during these times. This transport mechanism and site model is exhaustively documented in scientific literature. Moreover the peat deposits were not at the original, pre-landfill, ground surface. Rather, as noted in the literature they were buried beneath the wetland and wetland sediments which again is a requirement for their formation.

4. Section 8.2: The suggestion that wetlands located north of the site contribute to conditions that have mobilized and will continue to mobilize arsenic is inconsistent with data presented in the report. For example, arsenic concentrations in the shallow groundwater samples collected in and near the wetlands associated with Nonacoicus Brook did not exceed 10-ug/l (e.g., Figure 6 and 11). Similarly, arsenic concentrations in shallow groundwater samples recently collected from SHM-99-31A, located in or immediately downgradient of the wetland located between the north end of the landfill and Molumco Road, did not exceed 25 ug/l (refer to 2010 Annual Report).

<u>Response</u>: This comment is similar to that posed by the EPA in the BCT meeting in that they observed strongly reducing conditions at Plow Shop Pond but found little arsenic in solution. The reason for this is as follows:

- Arsenic concentrations are considerably lower in the sands north of the landfill. As noted
 recently by the EPA and Gannet Fleming, arsenic enrichment of the sands occurs from
 weathering of arsenopyrite in bedrock in Shepley's Hill. This is the probable source of
 arsenic enrichment in the area and occurs primarily in the center of the landfill where the
 highest arsenic concentrations are found.
- Sulfate reduction to sulfide also limits arsenic solubility at the site. Under strongly
 reducing conditions arsenic sulfides form which have been found in the form of
 framboidal pyrite (enriched in arsenic) throughout the site. Arsenic variability is to be
 expected due to the geologic origin of arsenic and the resulting solubility controls. The
 revised CSM addresses this issue.
- 5. In addition abundant literature, now noted in the revised SAR demonstrates that peat and wetlands will mobilize arsenic to varying but often high concentrations of arsenic (see revised SAR, Section 6). Figure 7: To avoid potential misunderstandings about the eastern extent of the contaminant plume near the north end of the landfill, the results from well SHM-10-06A should be replaced with the results from well SHM-10-06, or a footnote should be added to the figure for clarify the situation. Arsenic was reported with concentrations exceeding

1,500-ug/l in the samples collected from well SHM-10-06, which was located less than 100-feet wet of well SHM-10-06A, where the maximum sample concentration was 94 ug/l.

<u>Response</u>: Comment noted. However no change to the figure is required. The section locations and nearby well concentrations are indicated in Figure 3.

Email Message from Ginny Lombardo, USEPA dated 29 June 2011

Subject: MNA for North Impact Area and Draft Final SRI Report.

I finally had the chance to follow-up with Bryan and others at EPA on the question of MNA as a remedial component for SHL. Although EPA recognizes that the geochemistry and uncertainties associated with the SHL system make it difficult to complete a full weight-of-evidence MNA assessment, EPA believes that the Army has presented adequate data and documentation in the SRI to select MNA, in conjunction with source control at the north end of the landfill, as components of the SHL remedy. As discussed, the source control remedy will not remedy the elevated As that has already come to be located in the NIA. As EPA has expressed in the past, we are willing to accept MNA as the remedy for the NIA and recognize that there will be uncertainties with attenuation rate and remedial timeframe. We are confident that EPA, DEP and Army can establish an LTM program that will provide for adequate monitoring of the NIA conditions over time to assess whether projections are being met over time. EPA agrees to accept the available data and data evaluation, as presented in the SRI, to select MNA (in conjunction with source control at the north end of the landfill) as part of the planned ROD Amendment. As has been raised several times, the most critical next step is establishing a revised LTM program. EPA requests that these LTM discussions begin as soon as possible so that consensus can be reached on appropriate well locations and protocols for selection of appropriate screen depths. EPA will not concur on a remedy that does not include MNA for addressing the contamination that has come to be located in the NIA (i.e., source control with just LTM will not be accepted).

In addition, I have completed review of the Draft Final SRI Report. I have the following comments:

In our GC 7, EPA expressed concern that column experiments were ongoing and questioned
the availability of the data. Although the response to comment and Draft Final document
includes additional column study results, Section 6.4.2.3 and 6.4.3, page 47, references
other column studies that are still ongoing. Please clarify the objectives of these additional
column studies and provide a schedule for submission of the results.

Response: Additional modelling data being provided as an attachment to the report.

2. In our GC 8, EPA raised a concern about capture on the northeastern side of the landfill and the data from SHM-10-06 and SHM-10-06A that Army used to support their position that the impacts are bounded between these 2 wells. We requested more data. The Army's response indicated that additional monitoring would be proposed in future monitoring plans. As discussed below, at the May 19, 2011 BCT meeting, Army/Sovereign referred to several planned additional sampling and investigation activities. EPA requests that resampling of these wells be incorporated into plans for re-sampling of SRI wells as soon as possible. Groundwater characteristics and capture in this area is critical to the evaluation of

the FFS. In addition, in the near future, the BCT will need to consider the issue of the timing of the installation of the slurry wall to address the discharge to Red Cove and how this will direct additional groundwater to the northeastern side of the landfill. It is critical to have a more thorough evaluation of the capture in this area, so we can adequately consider the fate of the additional groundwater that will be directed to this area once the slurry wall is installed.

<u>Response</u>: Such changes or enhancements to the current groundwater LTM network will be performed pending implementation of an updated remedy for SHL.

3. In response to SC 8, Army agreed to revise Figure 30. I did not see a revised Figure 30 in the Draft Final revisions submission.

Response: Corrected Figure will be provided.

 In response to SC 16, Army agreed to provide an appendix with the PHREEQC2 and other modeling details. I did not see this in the Draft Final revisions submission.

Response: Additional modelling data will be provided as an attachment to the report.

In response to SC 22, Army agreed to revise Table 3. I did not see a revised Table 3 in the Draft Final revisions submission.

<u>Response</u>: The April 2011 Response to Comment mistakenly indicated that Table 3 and not Figure 2 would be revised. Figure 2 was reissued and provided to show all of the results collected for each of the analyzed wells. No changes were made or are proposed to Table 3.

Finally, at the May 19, 2011 BCT meeting, Army/Sovereign discussed the following planned efforts. EPA wants to ensure that we have an opportunity to review and comment on the plans for this work. Please update us on the status and schedule for these efforts:

During the discussion of characterization of the NIA, Sovereign stated that they planned to
install a new transect (of boreholes or wells?) in the wetland area north of the P&T system.
 Sovereign also stated that they planned to get additional As solids data in the NIA.

<u>Response</u>: Such changes or enhancements to the current groundwater LTM network will be performed pending implementation of an updated remedy for SHL.

- During the discussion on the model, Sovereign stated that the Corps was putting out a bid for gathering more model data and updating the model. The BCT discussed having a model meeting to discuss this further.
 - <u>Response</u>: Additional groundwater modelling enhancements will be performed pending implementation of an updated remedy for SHL.
- During the discussion on DEP's concern regarding characterization of the eastern edge of the plume at Nonacoicus, Army stated that they planned to install a new transect near 10-08 to resolve this concern
 - <u>Response</u>: Such changes or enhancements to the current groundwater LTM network will be performed pending implementation of an updated remedy for SHL.
- 9. During the discussion on LTM, Army stated that they were having Sovereign look at what updates needed to be done and to address some short term needs.
 - <u>Response</u>: Such changes or enhancements to the current groundwater LTM network will be performed pending implementation of an updated remedy for SHL.
- 10. During the discussion on LTM, Sovereign stated that they planned to resample some of the SRI temporary wells this summer.
 - <u>Response</u>: Such changes or enhancements to the current groundwater LTM network will be performed pending implementation of an updated remedy for SHL.



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NOTICE

The United States Department of Defense, Department of Army, funded wholly or in part the preparation of this document and work described herein under Contract No. W912WJ-10-D-0003 and Delivery Order 0002. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

Shepley's Hill Landfill Supplemental Groundwater and Landfill Cap Assessment for Long-term Monitoring and Maintenance Addendum Report

FINAL VERSION

Devens, Massachusetts

August 2011

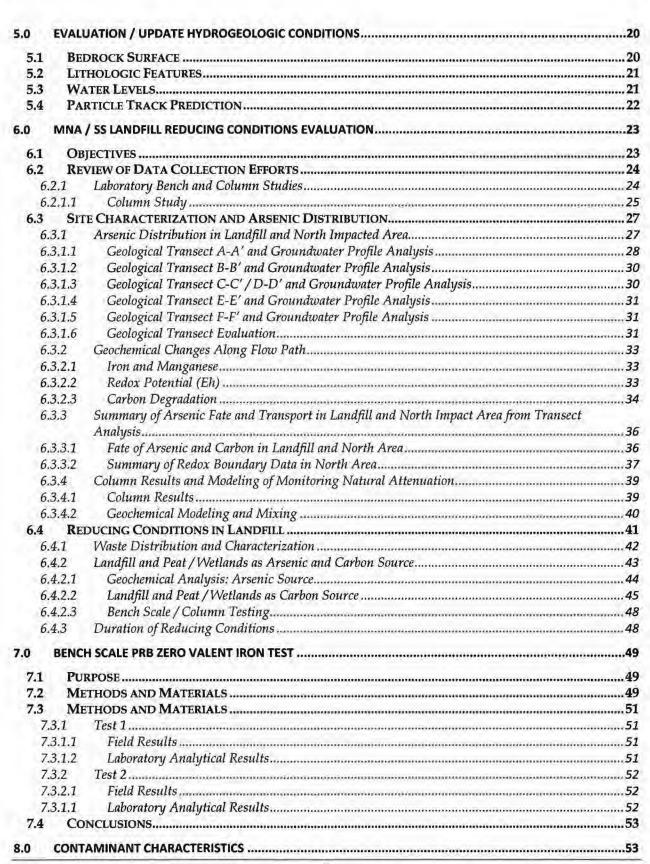
CERTIFICATION:

I hereby certify that the enclosed Report, shown and marked in this submittal, is that proposed to be incorporated with Contract Number W912WJ-10-D-0003 DO#0002. This Document was prepared in accordance with USACE Scope of Work and is hereby submitted for Government Approval.

Reviewed By:		
Sovereign Project Manager	Date	
Sovereign Quality Control Manager	Date	
Received By:		
USACE Project Manager	Date	

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Attachment B	Geophysical Applications Report
Attachment C	Groundwater Sampling Logs
Attachment D	Soil Laboratory Reports (Disk)
Attachment E	Groundwater Monitoring Well Laboratory Reports (Disk)
Attachment F	Groundwater Profiling Laboratory Reports (Disk)
Attachment G	Landfill Gas Evaluation Memo
Attachment H	Data Validation Reports (Disk)
Attachment I	PRIMA Environmental: Report of Findings, Shepley's Hill Landfill
Attachment J	PRB Treatment Test Results
Attachment K	EPA and MADEP Response to Comments
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ABBREVIATIONS, ACRONYMS, AND SYMBOLS

ADR Automatic Data Review

AMEC Earth and Environmental, Inc.

AOC Area of Concern AR Annual Report

ATP Arsenic Treatment Plant

AW Additional Work
BCT BRAC Cleanup Team
bgs below ground surface

BRAC Base Realignment and Closure

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act

COD Chemical Oxygen Demand CSM Conceptual Site Model

cys cubic yards

DIC Dissolved Inorganic Carbon

DO Dissolved Oxygen

DOC Dissolved Organic Carbon
DPT Direct Push Technology
DQO Data Quality Objective

ECC Environmental Chemical Corporation

FFS Focused Feasibility Study

FS Feasibility Study

FSSR Feasibility Study Screening Report

GPS Global Positioning System IDL Instrument Detection Limit

HERA Human and Ecological Risk Assessment

IC Institutional Control LTM Long Term Monitoring

MA Massachusetts

Massachusetts Department of Environmental Protection

MCL Maximum Contaminant Level MNA Monitored Natural Attenuation MNR Monitored Natural Recovery

MSL Mean Sea Level ND None Detectable NIA North Impact Area

ORP Oxidation-Reduction Potential

pH Standard potential of Hydrogen ion concentration

ppb parts per billion
ppm parts per million
PVC polyvinyl chloride
RI Remedial Investigation
ROD Record of Decision
REDOX Reduction and Oxidation

RSE Remediation System Evaluation

RTC Response to Comments
SAP Sampling and Analysis Plan

SAR Supplemental Assessment Report (AMEC 2009)

SC Specific Conductance SHL Shepley's Hill Landfill SOW Scope of Work

Sovereign Sovereign Consulting Inc.
TAL Target Analyte List
TDS Total Dissolved Solids

Temp Temperature

TOC Total Organic Carbon
TSS Total Suspended Solids

UFP-QAPP Unified Federal Policy – Quality Assurance Project Plan USACE-NAE U.S. Army Corps of Engineers – New England District

USEPA U.S. Environmental Protection Agency

USGS U.S. Geological Survey

Workplan SHL Supplemental Investigation Workplan Addendum data May 2010

EXECUTIVE SUMMARY

The Shepley's Hill Landfill encompasses approximately 84 acres in the northeast corner of the main post of the former Fort Devens. The landfill was reportedly operating by the early 1940s, and evidence from test pits within the landfill suggests earlier usage, possibly as early as the mid-nineteenth century. The landfill contains a variety of waste materials, including incinerator ash, demolition debris, asbestos, sanitary wastes, spent shell casings, glass, and other wastes. As described previously (Harding ESE 2002), the maximum depth of the refuse occurs in the central portion of the landfill and is estimated to be about 40 feet bgs. The volume of waste in the landfill has been estimated at over 1,500,000 cys, of which approximately 160,000 cys (11%) is below the water table. The landfill was closed in five phases between 1987 and 1992-93

Since landfill closure, numerous studies have been conducted to evaluate contaminant conditions at the landfill. Data gaps identified by these investigations are outlined within **Table** 1. Because of the complex nature of the site conditions, the following areas were identified for further evaluation as documented in this addendum report:

- Delineation & Monitoring for North Impacted Area Determine if arsenic impact in groundwater extends beyond the installed locations (SHM-10-01 through SHM-10-04, SHM-10-05A, and SHM-10-08 through SHM-10-10).
- North Impact Capture Determine if the existing treatment system is capturing the arsenic, and that natural attenuation is an effective alternative;
- Landfill Gas Impact Determine if methane intrusion into surrounding buildings is a concern or issue;
- East Impact Delineation and Capture Obtain additional information on the migration of arsenic towards Plow Shop Pond; and
- Arsenic Source Strength Obtain information to evaluate the strength and duration of the
 dissolved arsenic conditions. This assessment will be conducted by evaluating arsenic
 stability, redox boundary, the impact of the existing treatment system, and evaluate the
 arsenic impact via a fate and transport evaluation.

To facilitate this investigation, the following scope of work was implemented:

• Advancement of 21 borings using DPT and 7 borings using Rotosonic drilling methodologies. Temporary groundwater monitoring wells were constructed within 16 of 29 boreholes. During drilling operations, groundwater profile samples were collected at 10-foot sampling increments for field screening with an arsenic test kit and laboratory analysis. All groundwater samples were collected in accordance with the January 2010 USEPA Region I Low-Stress / Low-Flow groundwater sampling guidance document. During sampling collection, the purge water was monitored using a properly calibrated YSI meter and screened for DO, pH, Temp, Specific Conductivity, ORP, and color;

- Completion of a geophysical survey to identify bedrock surface elevations within the North Delineation and Monitoring Area along three transect lines;
- Analysis of designated soil, groundwater, and groundwater profiling samples for metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and/or zinc), hardness, alkalinity, TSS, ammonia, nitrite, nitrate, COD, chloride, DIC, DOC, TOC, sulfide, and/or sulfate;
- Completion of an evaluation to determine whether dissolved methane gas in groundwater from the landfill presents a potentially unacceptable hazard to nearby structures;
- Completion of treatability bench testing on water samples obtained from monitoring wells SHM-10-14 and SHM-10-15;
- Running of column studies on soil and waste samples obtained at the site in order to
 evaluate arsenic source strength and reducing conditions at the landfill.

The findings of this investigation as summarized as follows:

- Delineation & Monitoring for North Impacted Area The investigation included the advancement of soil borings, completion of groundwater vertical profiling, and construction and sampling of monitoring wells on the northern and southern side of Nonacoicus Brook. These boring and well locations are identified as SHM-10-01, SHM-10-02, SHM-10-03, SHM-10-04, SHM-10-05 (no well installed), SHM-10-05A, SHM-10-08, SHM-10-09 (no well installed), and SHM-10-10. Groundwater profiling conducted during the drilling program recorded dissolved arsenic concentrations varying from non-detect to 112-ug/1. Sampling and analysis of groundwater samples obtained from the monitoring wells reported concentrations of dissolved arsenic varying between 0.43 and 7.87-ug/1. Lastly, the geophysical survey indicated that bedrock slopes upward, thereby restricting the migration of the release. The results of this data define the down-gradient extent of the arsenic impact below the southern bank of Nonacoicus Brook, Groundwater flow from the north and northeast of the Brook flows and mixes with groundwater advancing north and northwest from the landfill area creates an oxidation/reduction front that effectively limits the northern extent of the arsenic at the mixing front.
- North Impacted Capture Points SHM-10-06 and SHM-10-06A were installed to evaluate the capture and confinement of the arsenic plume on the north and northeastern side of the existing arsenic treatment plant. Groundwater profiling indicated evidence of dissolved arsenic ranging from 10 to 2,540-ug/l in well SHM-10-06, while decreased concentrations were detected in SHM-10-06A at concentrations of non-detect to 106-ug/l. Sampling and analysis of groundwater from the monitoring wells document concentrations decreasing between the two wells from 2,710 to 60.1-ug/l. This data was included in refined particle tracking modeling that indicates that the treatment system is reducing arsenic mass and capturing the bulk of arsenic mass on the northern and

northeastern side of the treatment plant and that the impacts are bounded between monitoring points SHM-10-06 and SHM-10-06A. Drilling operations indicated a shallower than previously extrapolated bedrock surface in this area. The shallower rock elevations were plotted and included in the refined particle track models that document a bedrock trough trending northward through the landfill and that the shallower rock ridge along the east side of the landfill appears to restrict arsenic migration in a northerly direction. These observations will be refined through long term monitoring.

- Landfill Gas Assessment Modeling was conducted to determine if methane gas intrusion
 into an occupied building or structure was a concern. The results of this modeling using a
 dissolved methane concentration of 10-mg/l in the groundwater determined that this
 concentration would not pose an explosive hazard.
- East Plume Delineation and Capture For this part of the investigation, a temporary monitoring well was advanced at the location identified as SHM-10-07. Groundwater profiling recorded dissolved arsenic concentrations varied between 58 and 1,350-ug/l, while groundwater sampling of this monitoring well confirmed dissolved arsenic concentrations of 818 and 918-ug/l. Drilling operations indicated a shallower than previously extrapolated bedrock surface in this area. The shallower rock elevations were plotted and included in the refined particle track model that document a bedrock trough trending northward through the landfill and that the shallower rock ridge along the east side of the landfill appears to restrict arsenic migration to a northerly direction.
- Arsenic Natural Attenuation/Source Strength and Reducing Environmental Evaluation –
 An evaluation of the collected information determined the following;
 - Presently the primary source of arsenic in groundwater appears to be aquifer sands rich in amorphous iron hydroxide solids, usually coated on sand grains as documented through microscopy. Other sources of arsenic include landfill waste, peat, and bedrock/till. The contribution of landfill waste has been reduced due to depletion of easily degradable carbon and recent capping of the landfill. While peat in some instances was found to contain arsenic, it is not clear if the peat contained the arsenic originally or whether arsenic accumulated in the peat by leaching of arsenic from overlying waste. Arsenic solubility is controlled by desorption from the iron solids and by reductive dissolution of the iron (III) solids created by biodegradation of peat and waste. A site specific distribution coefficient (Kd) was derived from the aquifer solids content and aqueous arsenic in contact with the solids, as 7.6. The distribution is useful for predicting ranges of arsenic concentrations that could be expected in local groundwater. This process does not however include dissolution of the iron solid, a process that could lead to higher arsenic concentrations.

- Arsenic groundwater distribution has been improved via a number of transects and depth profiles. The distribution of arsenic can be considered as (1) increasing with depth to just above the glacial till layer, (2) highest in the center of the landfill near SHM-10-14 and SHM-10-15, (3) slowly decreasing in concentration to the north of the landfill to the south side of the Nonacoicus Brook and wetlands, and (4) controlled in large degree by the bedrock surface as far as flow direction is concerned.
- A redox boundary appears to be located in the vicinity of SHM-10-10. The boundary consists of three features: (1) a bedrock surface that controls the flow of landfill impacted water to the Brook but also brings groundwater from the north and northeast of the Brook that mixes or dilutes the landfill flow from the south, (2) intrusion of non-impacted, more oxidized groundwater from the north side of the landfill, and (3) mixing of non-impacted with landfill water resulting in precipitation of arsenic that should not impact the water quality in the Brook or wetlands.
- Carbon inputs to the groundwater from biodegradation of waste or peat indicates that peat is probably a more important carbon source for maintaining reducing conditions than landfill waste at this time. The reducing conditions created by the peat preceded the landfill, but were exacerbated by the additional carbon source from the landfill waste. Peat formation is a result of reducing conditions, but also maintains reducing conditions by biodegradation and release of short chain carboxylic acids and methylated amines that will drive iron oxy hydroxide reduction and ammonia production (Bergmann et al, 1999) both byproducts that are widespread at the site.
- The time it takes to flush groundwater arsenic from beneath the landfill has been simulated from two column experiments. The studies suggest that soluble arsenic is removed (concentration less than laboratory detection methods) within 13 to 14 pore volumes of clean water. However, reducing conditions and soluble carbon still remain indicating reserve (non-soluble) arsenic that may be resolubilized. The time frame describing removal of soluble arsenic from the landfill aquifer and north impacted area is approximately 270 years based on this data assuming a flow velocity of 0.5 ft/day and the site travel distance.

The conceptual site model advanced for Shepley's Hill Landfill by others has been updated to include the following new information.

• Waste within the landfill has been further characterized with the recent installation of 5 borings drilled through the landfill to bedrock. Waste analysis revealed that with the exception of lead, zinc and copper most trace elements were at typical background levels. Arsenic in the waste or peat did not exceed 60 mg/kg. Initial leaching tests indicate that landfill waste potentially could deliver up to 500 ug/L arsenic to underlying groundwater. This leaching test is a sequential extraction test that estimates the entire pool of available arsenic, not the amount in equilibrium with the waste. Placement of the cap has likely eliminated leaching of arsenic and any other constituents from landfill

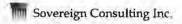
waste to underlying groundwater, although recent estimates suggest that only 11% of the landfill waste is in contact with groundwater or saturated.

- In comparison to the waste, underlying sands potentially leach up to 1,500 ug/L arsenic to
 groundwater. For example, if all of the arsenic entrained in the iron solids on the sand
 grains was release, then concentrations of 30,000 ug/L or higher of arsenic could be found
 in solution. Based on these results, underlying aquifer sands are the dominant source of
 arsenic at the landfill.
- The borings through the landfill revealed that thick peat layers are found underlying waste in the center of the landfill roughly bounded by SHL-99-29x, SHM-10-13, SHM-10-14, and SHM-10-15.
- The peat and the associated wetlands preceded the landfill based on historical mapping of the area. The peat is a significant source of carbon to the groundwater and caused locally reducing conditions prior to emplacement of waste. Therefore arsenic mobilization has been occurring historically prior to landfill development and will continue to occur as long as carbon degradation within the peat takes place.
- The north impacted area (NIA) also appears to have reducing conditions partially from the landfill influence and in part from naturally occurring wetlands occurring in the NIA.
- Arsenic in groundwater in the north impacted area appears to diminish substantially prior to discharge beneath the Brook and wetlands due to a partially observable and mapped redox boundary. The redox boundary occurs due to mixing or dilution with groundwater flow from the north side of the brook. Chemistry of water in DPT points close to the Brook show mixing with water from the north side indicating that the Brook is a discharge divide. Arsenic is not expected to impact the Brook and wetlands due to this redox boundary.
- Groundwater discharge at the north end appears to follow the particle track data
 presented by and refined by AMEC based on these investigations described herein.
 Arsenic impact to the MacPherson well is not anticipated based on the results of the
 investigation at the redox boundary.
- Newly acquired bedrock information indicated that bedrock is located at a shallower depth than originally projected within the area near Nonacoicus Brook. This information was incorporated within the hydrogeologic study and the particle track updated. The results indicated an increase in the groundwater flow velocity near the Brook, but continued to show that the system collected the arsenic impacted groundwater.
- An evaluation of methane determined that the dissolved concentration within groundwater does not present an explosive hazard.

• It is likely that reducing conditions prevalent in the landfill and peat have mobilized arsenic from the aquifer sands which is now entering the Cove via a different flow path than the predominant south-north flow pattern observed for most of the landfill. Similar to the arsenic flux north of the site, the impact to red cove likely preceded the placement of the landfill. The landfill and the corresponding additional dissolved carbon associated with the reducing conditions certainly would have exacerbated the flux prior to capping.

The results of the column and batch studies are complete and included:

- A column study to determine the time (estimated from pore volumes) for clean, oxidized water to restore the column to background conditions under conditions of moderate arsenic in pore water,
- A column study to determine the time for arsenic free, but reduced water to restore the column to background conditions under moderate arsenic pore water concentrations,
- A batch study to determine the rate at which organic carbon is degraded under anaerobic condition, and
- A column study to determine the rate of release of arsenic from aquifer sands under reducing conditions typical of the landfill environment.



1.0 INTRODUCTION

Information contained within this report is associated with the scope of work outlined under two separate contract proposals including:

- 15 April 2010 Supplemental Investigation Contract Proposal; and,
- 22 July 2010 Modification Proposal.

These work scopes were conducted to address data gaps outlined in the Shepley's Hill Landfill Supplemental Investigation Workplan Addendum dated May 2010, the Shepley's Hill Landfill Supplemental Investigation Workplan Addendum for Evaluation of the North Plume Monitored Natural Attenuation for the Impacted Area and Source Strength/Landfill Reducing Environmental Evaluation dated July 2010, and the Supplemental Groundwater and Landfill Cap Assessment for Long-term Monitoring and Maintenance dated June 2009. The location of the site is shown on Figure 1.

1.1 Purpose and Scope of Investigation

The purpose of this study is to address the following:

- Delineation and Monitoring of the North Impacted Area To delineate the north impacted
 area in all directions to depth in order to establish final delineated impact boundaries.
 Install additional monitoring wells to monitor arsenic impact migration and ensure that
 the arsenic impacts do not migrate further beyond the final delineated plume boundaries.
 The location of these monitoring points was outlined within the May 2010 Workplan
 Addendum;
- North Impact Capture To evaluate whether the existing treatment system is capturing
 arsenic, and evaluate and/or demonstrate that natural attenuation will be effective at
 remediating the North Impact Area within a timeframe that is reasonable given the
 groundwater chemistry of the site;
- 3. Landfill Gas Assessment To evaluate potential landfill gas impacts in the area of the North Impacted Area in accordance with the EPA Guidance for Evaluating Landfill Gas Emissions from Closed or Abandoned Facilities to ensure that methane emanating from the landfill will not cause unacceptable risks in nearby structures;
- East Impact Delineation and Capture Install a groundwater monitoring well to evaluate arsenic groundwater impact to Plow Shop Pond sediments;
- Arsenic Source Strength To estimate the arsenic source strength and duration, including
 the quantity of arsenic that may be mobilized and the strength and duration of the source
 of the reducing conditions.

6. Source Strength / Landfill Reducing Environmental Evaluation - To estimate the duration of the landfill's ability to maintain reducing/methanogenic conditions.

The technical objective and approach of the data collection program is summarized in **Table 1** of this report. To achieve these objectives, the following scope of services was conducted:

- 1. Advancement of 11 borings using DPT and 7 borings using Rotosonic drilling methodologies. The DPT locations are identified as SHM-10-01 through SHM-10-06, SHM-10-05A, SHM-10-06A, and SHM-10-08 through SHM-10-10. The Rotosonic locations are identified as SHM-10-07, and SHM-10-11 through SHM-10-16. Each of the boring locations are illustrated on Figure 2, with copies of the boring logs provided as Attachment A;
- 2. Advancement of an additional 10 DPT points to evaluate reduction and oxidation (REDOX) conditions both horizontally and vertically along the boundaries of the Nonacoicus Brook. Representative soil samples were not obtained during the completion of this phase of the evaluation program, rather a detailed investigation was conducted of the water chemistry between the groundwater and surface water interface. The location of these points are shown on Figure 3, and labeled as SHM-10-17 through SHM-10-27;
- Completion of a geophysical survey to identify bedrock surface elevations within the Northern Delineation and Monitoring Area along three transect lines. These transect lines are identified as A-A', B-B', and C-C' on Figure 4. A copy of the Seismic Refraction Survey Report prepared by Geophysical Applications, Inc. is included as Attachment B of this document;
- 4. Analysis of groundwater samples obtained during groundwater profiling for concentrations of total and/or dissolved metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and/or zinc) and screened using an Arsenic Field Testing Kit. The samples were also analyzed for hardness, alkalinity, TSS, ammonia, nitrite, nitrate, COD, chloride, DIC, DOC, sulfide, and sulfate. During sampling, purged water was field screened for DO, pH, Temp, Specific Conductivity, ORP, and color. A tabulated summary of the groundwater profiling results is provided in Table 2;
- 5. Construction of temporary groundwater monitoring wells within 16 of the 29 completed boreholes. The well screening depth was based on the arsenic groundwater profiling and laboratory results. No temporary monitoring well was constructed within the point identified as SHM-10-09, since concentrations of arsenic were not present within the profile samples. However, an additional well, SHM-10-06A, was installed to better define the arsenic plume in the north capture zone area. In addition, monitoring wells were not installed within the points identified as SHM-10-17 through SHM-10-27 since they were being used for profiling of the redox conditions along the Nonacoicus Brook only;

- 6. Analysis of groundwater samples obtained from the temporary monitoring wells for total and/or dissolved metal (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and/or zinc), hardness, alkalinity, TDS, TSS, ammonia, nitrite, nitrate, COD, TOC, chloride, sulfide, and sulfate. During sampling collection, water was field screened for DO, pH, Temp, Specific Conductivity, ORP, and color. A tabulated summary of the groundwater results is provided in Table 3;
- 7. Analysis of soil samples from the landfill borings (SHM-10-07, and SHM-10-11 through SHM-10-16) for concentrations of TAL Metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and/or zinc) and TOC. A tabulated summary of the soil results is provided in Table 4.
- 8. Completion of a treatability bench testing on water samples obtained from monitoring wells SHM-10-14 and SHM-10-15. Water collected from the site was run through a column containing iron with the effluent water analyzed for residual arsenic concentrations. Further information on this study is provided in Section 6.2.3.2 of this report.
- Running of column study on samples obtained at the site. These column studies were conducted to evaluate Arsenic Source Strength and Reducing conditions.

1.2 Goals of Investigation

The goals of this investigation are to address the summarized data gaps noted on **Table 1** of this report. These goals include:

- Delineation and Monitoring of the North Impacted Area Confirm that arsenic does not extend beyond the installed locations;
- North Impact Capture Confirm that the existing treatment system is capturing arsenic, and that natural attenuation is an effective alternative;
- 3. Landfill Gas Assessment Confirm that methane intrusion into surrounding buildings is not a concern or issue;
- 4. East Impact Delineation and Capture Obtain additional information on the migration of arsenic towards Plow Shop Pond;
- 5. Arsenic Source Strength Obtain information to evaluate the strength and duration of the dissolved arsenic conditions. This assessment will be conducted by evaluating the plume stability, redox boundary, the impact of the existing treatment system, and evaluate the arsenic plume via a fate and transport evaluation.

2.0 SITE HISTORY AND BACKGROUND

Shepley's Hill Landfill encompasses approximately 84 acres in the northeast corner of the main post of the former Fort Devens. The landfill is bordered to the northeast by Plow Shop Pond, to the west by Shepley's Hill, to the south by recent commercial development, and to the east by land formerly containing a railroad roundhouse. Nonacoicus Brook, which drains the pond, lies to the north of the landfill, The landfill includes three Areas of Contamination (AOCs) investigated under CERCLA: AOC 4, the sanitary landfill incinerator; AOC 5, sanitary landfill No. 1; and AOC 18, the asbestos cell. The landfill was reportedly operating by the early 1940s, and evidence from test pits within the landfill suggests earlier usage, possibly as early as the mid-nineteenth century. The landfill contains a variety of waste materials, including incinerator ash, demolition debris, asbestos, sanitary wastes, spent shell casings, glass, and other wastes. As described previously (Harding ESE, 2002), the maximum depth of the refuse occurs in the central portion of the landfill and is estimated to be about 40 feet below ground surface (bgs). The volume of waste in the landfill has been estimated at over 1.5 x 106 cys, of which approximately 1.6 x 105 cys (11%) is below the water table. The saturated wastes may be emplaced in a wetland reducing environment; at least two areas previously mapped as wetlands appear to have been filled (Harding ESE, 2002).

Subsequent to closure of the landfill (1987-1993), remedial investigations (RIs) completed under CERCLA evaluated soil, sediment, surface water, and groundwater conditions at and in the immediate vicinity of the landfill. The results confirmed the presence of various contaminants, particularly certain inorganics and volatile organic compounds (VOCs), in groundwater, sediments, and surface water at or adjacent to Shepley's Hill Landfill. A Feasibility Study (FS) and Record of Decision (ROD) resulted in a remedy that required long term monitoring and maintenance of the existing landfill cap and groundwater monitoring. The ROD (USEPA, 1995) included a contingency provision, which required that a groundwater extraction system be installed if groundwater contaminant concentrations, primarily arsenic, did not meet risk-based performance standards over time. Due to continued elevated contaminant concentrations, the Army installed and started full time operation of a groundwater extraction and treatment system in March 2006 to address groundwater contamination emanating from the northern portion of the landfill.

2.1 Regulatory Context

Fort Devens was placed on the National Priorities List (NPL) in November 1989 due to contamination of groundwater with arsenic (As), cadmium (Cd), chromium (Cr), lead (Pb), and mercury (Hg). The EPA and Army signed a Federal Facilities Agreement (FFA) on May 13, 1991 (amended March 26, 1996). The ROD outlined the remediation objectives for the Shepley Hill Landfill (USEPA, 1995). It requires the Army to monitor groundwater, maintain the landfill, and prepare annual reports. It also requires that the Army review the effectiveness of the remedy every five years. The goal of that remedy, which relied heavily on the previously installed landfill cap, was to attain groundwater clean-up goals by 2008 thereby reducing exposure risks. In addition, the ROD states that if the landfill cap was found not to meet the prescribed risk reduction performance criteria, the Army was to use a contingency remedy that consisted of groundwater extraction and treatment. That remedy has been constructed and



began operation in September 2005, and has operated full time since March 2006. The table below summarizes remediation target levels for Shepley's Hill Landfill Operable Unit groundwater, as defined in the ROD.

Chemical of Concern	Remediation Target Level (ug/l)	Selection Basis
Arsenic	10*	MCL
Chromium	100	MCL
1,2-Dichlorobenzene	600	MCL
1,4-Dichlorobenzene	5	MMCL
1,2-Dichloroethane	5	MCL
Lead	15	Treatment Technology Action Level
Manganese	291	Background**
Nickel	100	MCL
Sodium	20,000	Health Advisory
Aluminum	6,870	Background**
Iron	9,100	Background**

ug/l - micrograms per liter, approximately equivalent to parts per billion (ppb)

MCL - Maximum Contaminant Level; MMCL - Massachusetts MCL

The ROD grouped monitoring wells at Shepley's Hill Landfill into two groups. Well Group 1 consists of wells, primarily at the north end of the landfill, where cleanup levels have been attained historically. Well Group 2 consists of wells where historically cleanup levels have not been attained. However, as discussed further in the next section, the Group 1 and 2 well designations were determined to no longer be relevant for the combined capped landfill and Contingency Remedy in 2007.

2.2 Remedial Actions to Date

The landfill was closed in five phases between 1987 and 1992-93 in accordance with Massachusetts regulations set forth in 310 CMR 19.000. The Massachusetts Department of Environmental Protection (MassDEP) approved the closure plan in 1985. Closure consisted of installing a 30-mil polyvinyl chloride (PVC) membrane cap, covered with soil and vegetation and incorporating gas vents. Closure also included installation of monitoring wells to evaluate groundwater quality around the landfill and construction of drainage swales to control surface water runoff. MassDEP issued a Landfill Capping Compliance Letter approving the closure in February 1996.

The Army maintains and monitors the landfill. Activities include:

- · mowing the vegetation;
- · monitoring emissions from gas vents;
- · monitoring vapor levels in soil gas probes;
- · operating a pump and treat system; and
- monitoring of groundwater.

^{*}Note - The MCL for arsenic prior to January 23, 2006 was 50-ug/l. The EDS (CH2M Hill 2005) indicated "It is expected that they (ROD cleanup goals) will change to be responsive to this new (10-ug/l) Standard."

^{**} The estimation of background concentration is presented in Section 4 of the RI Addendum Report (ABB-ES, 1993).

3.0 FIELD INVESTIGATION

The following services were conducted to evaluate conditions associated with the North Impact Area Delineation, North Plume Capture, East Plume, and to provide information of the Arsenic Source Strength and Reducing Conditions.

3.1 Access Arrangements and Conservation Commission

Upon finalizing the proposed exploration locations with the USACE and input from stakeholders, Sovereign personnel obtained contact information of each of the property owners. The prepared letters were submitted to the USACE who assigned a representative to obtain approval from each owner prior to accessing each property. Work was not completed at a proposed exploration point until approval was received from the property owner.

Sovereign then performed a wetland delineation that included routine assessments of vegetation, hydrology, and soil conditions along previously defined geophysical survey transects (A-A', B-B', and C-C') in the area north of Nonacoicus Brook proposed monitoring well locations, and proposed access points to work areas (Figure 4). Sovereign also completed a riverfront (Nonacoicus Brook) delineation which included field identification and flagging of the 'top of bank' for riverfront areas, where applicable, to locate the inner and outer riverfront areas/riparian corridors. Wetland delineation procedures followed the "routine method" outlined in the Corps 1987 Wetlands Delineation Manual, as modified by U.S. Army Corps of Engineers Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: North-central and Northeast Region (2009). As discussed in the North-central and Northeast Regional Supplement, Ayer, Massachusetts is located in the Land Resource Region - R, Northeastern Forests. The standards and regulations established in the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00) were reviewed prior to the site delineation. The methodologies described within the Massachusetts Wetland Protection Act differ slightly from the USACE methodology. As such, the procedure for wetland delineation described in the Massachusetts document Delineating Bordering Vegetated Wetlands also was utilized during the May 2010 field investigation. Both the USACE and Massachusetts method delineations established the same wetland line (i.e. the USACE and Massachusetts lines did not diverge); therefore, it was not necessary to flag/delineate two separate wetland lines. The results of this evaluation were issued in a report titled "Wetland Delineation Report" dated 13 An updated boring location plan was provided to the Ayer Conservation May 2010. Commission to detail the location of additional exploration points which were proposed as a result of a modification to the original scope of work. This 30 July 2010 letter report and plan were provided to the Conservation Commission on 5 August 2010.

3.2 Geophysical Survey

Bedrock can have a strong influence on groundwater flow patterns and in aquifers with contaminants at depth in the saturated overburden, the flow changes that occur near depth to the bedrock surface can influence the direction of contaminant migration. Further, variations in bedrock topography (i.e. the presence of troughs and ridges that expand or contract over a distance), can affect the localized groundwater flow velocity in the overlying overburden aquifer as a unit of saturated aquifer migrates across and through those topographical changes. Therefore, a geophysical survey to map the bedrock surface within the North Impact Area Delineation area was conducted to document depth to bedrock within this area and determine if additional information could be gathered pertaining to the mechanisms controlling groundwater flow patterns. The principal objective of the geophysical survey was to determine the depth to and the elevation of the bedrock surface in the vicinity of Nonacoicus Brook, downgradient of the landfill. Available information suggests the presence of a bedrock trough beneath the northern toe of the landfill and Nonacoicus Brook. The trough is oriented north to south beneath the landfill toe, and gradually turns west until generally aligned east to west beneath Nonacoicus Brook. The geophysical survey included seismic refraction imaging along lines designated A-A', B-B', and C-C' as depicted on Figure 4.

As part of this investigation, the May 2010 Workplan Addendum outlined the placement of three transect lines to be located and used to conduct a seismic refraction geophysical bedrock elevation survey (Lines A-A', B-B', and C-C'). To conduct this assessment, the GPS coordinates of SHM-10-02, SHM-10-03, SHM-10-04, SHM-10-08, and points near the end of each transect line were determined, and the point located and marked in the field with wooden stakes. Each of the transect lines was surveyed, with grubbing operations conducted for survey line-of-sight and to implement the geophysical survey. In several locations, the transect lines and exploration point were offset or adjusted because of adverse conditions (wet soils or standing water).

The geophysical survey along each traverse was conducted in 250-feet long segments, with geophones placed at 10-foot increments. A Betsy Gun or 450-pound accelerated weight-drop device was used as the energy source. A copy of the Seismic Refraction Survey Report prepared by Geophysical Applications, Inc. is included as **Attachment B** of this document. The results of the survey indicate that bedrock undulates between elevations 145-feet to 167-feet along transaction A-A', 113-feet to 180-feet along transaction B-B', and 142-feet to 176-feet along transaction C-C'.

3.3 Subsurface Exploration

The drilling services outlined under this section of the report were conducted in two separate phases. These services were conducted to evaluate conditions within the North Impact Area Delineation, North Capture, and the East Plume Delineation Areas. The drilling procedures used for each of these two areas are outlined in the following subsections. All drilling and sampling management was conducted as required by the site specific documents which include the HASP, DAP, FSP, and QAPP.



The borings completed under this investigation are shown on Figure 2 and Figure 3. The locations of the proposed exploration points were used to evaluate the following:

- SHM-10-01 is located to evaluate the western limit of the plume in the area of West Main Street;
- 2. SHM-10-02 and -03 are located to evaluate the western limit of the plume in the area of Nonacoicus Brook and the bedrock valley;
- 3. SHM-10-04 is located to evaluate the northern limit of the plume in the area of Nonacoicus Brook;
- SHM-10-05A (and 05) is located to evaluate the eastern limit of the plume in the area of West Main Street;
- 5. SHM-10-06 and SHM-10-06A were used to evaluate contaminant capture of the treatment system;
- 6. SHM-10-07 was used to evaluate the limits of the plume in the area of Red Cove;
- SHM-10-08 through -10 were used to evaluate the limit of the plume in the area of Nonacoicus Brook;
- 8. SHM-10-11 through -15 were used to evaluate contaminant conditions and characterize groundwater chemistry within the landfill;
- 9. SHM-10-16 was used to evaluate contaminant conditions downgradient of the landfill;
- SHM-10-17 through SHM-10-27 were used to evaluate Redox conditions along the southern side of Nonacoicus Brook.

Copies of the test boring logs/monitoring well construction reports are attached as **Attachment A**. No logs were prepared for the points identified as SHM-10-17 through SHM-10-27 since these points were used to evaluate groundwater Redox conditions, and soil samples were not collected as part of the drilling procedures.

3.3.1 Direct Push Technology (DPT)

A DPT drilling method was used to advance the proposed exploration points located within the North Impact Area Delineation and the North Plume Capture Areas. During this phase of the investigation the DPT investigation was conducted in two separate mobilizations. The initial phase involved advancing DPT groundwater sampling rods continuously, with vertical groundwater sampling conducted at 10 feet intervals to assess groundwater chemistry and arsenic concentrations within the overburden aquifer as discussed in Section 3.6.3.2 of this report. The second phase of the DPT investigation included continuous soil sampling to evaluate the subsurface soil geology (no soil samples were saved or analyzed), and to allow for the construction of temporary 1.5" Poly Vinyl Chloride (PVC) monitoring wells within select locations. In general, soil conditions consisted of fine to coarse grained sand deposits overlying a varying layer of glacial till within each location, with each location terminated at a refusal conditions (bedrock or presumed bedrock). The exploration points conducted using this drilling method include SHM-10-01 through SHM-10-06, SHM-10-05A, SHM-10-06, and SHM-10-08 through SHM-10-10. These points were used to characterize groundwater chemistry at downgradient points from the landfill.



3.3.2 Rotosonic Drilling Method

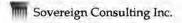
Rotosonic drilling methods were used to conduct drilling operations at the exploration points identified as SHM-10-07, and SHM-10-11 through SHM-10-16 within the East Plume Area and Landfill. Continuous soil samples were collected at each location, with select samples obtained during the drilling operations submitted for laboratory analysis or used for the column study analysis. Groundwater profiling was also conducted during the drilling program, with samples obtained at 10-foot sampling increments upon reaching the groundwater table and extending vertically to the bedrock interface. A five to ten foot sample of the underlying bedrock was obtained at each of the completed borings. To complete each location, a 2-inch diameter temporary monitoring well was constructed within the completed borehole. information on the sampling analyses is provided in Section 3.6 of the report. Point SHM-10-07 was used to evaluate groundwater chemistry near Red Cove, while the other points were used to evaluate landfill MNA and SS conditions. In general, soil conditions consisted of sand with varying percentages of silt, gravel, and rock fragments, with areas of waste materials and peat. Refusal conditions were encountered, presumably at bedrock or presumed bedrock, at each of the completed boreholes, with glacial till encountered above the refusal conditions in several locations. Prior to drilling the locations situated within the landfill, the overlying soils were excavated to expose the landfill liner, the liner was cut and air monitoring conducted in accordance with the SOP attached to the FSP.

3.3.3 Redox Evaluation

During the Redox evaluation program, a DPT drilling method was used to advance the proposed exploration points located to the south side of Nonacoicus Brook. To conduct this evaluation program, a DPT groundwater sampling rod was advanced through the underlying soils, with vertical groundwater samples collected at 10 feet intervals to assess groundwater chemistry and arsenic concentrations within the overburden aquifer as discussed in a later section of this report. Soil samples were not collected during drilling operations, or groundwater monitoring wells constructed, since this was not part of the goal of the drilling program. The primary purpose of this drilling program was to evaluate groundwater redox conditions and the potential limits of the release along and near Nonacoicus Brook. Each of these points was terminated at refusal conditions. The exploration points conducted under this phase of the program were identified as SHM-10-17 through SHM-10-27.

3.4 Temporary Monitoring Well Installation

As described in the previous section, temporary monitoring wells (Refer to Figure 2 and Figure 3) were installed to evaluate groundwater chemistry within the North Impact Area, Delineation area, North Plume Capture area, East Plume near Red Cove, and Landfill MNA/SS Conditions. The locations of these points were plotted and mapped based on Global Positioning System coordinates. Vertical profiling of arsenic concentrations and field parameters for groundwater was conducted during drilling operations at each of the points to determine the construction screening depth for the temporary monitoring wells. Temporary groundwater monitoring wells were constructed within each of the completed boreholes, with the exception of SHM-10-09, and SHM-10-17 through SHM-10-27. The construction of a well at location SHM-10-09 was



eliminated since no evidence of arsenic was detected within the groundwater profiling samples. Additionally, monitoring wells were not constructed within SHM-10-17 through SHM-10-27 since these points were used to profile redox conditions along Nonacoicus Brook.

At each well location, the well point screening depth was based upon the arsenic profiling results (see Table 5). In general, each well was constructed with a 10-foot to 20-foot long PVC screen located at the maximum depth explored or at a depth corresponding with the maximum arsenic concentration. Filter sand was placed around the PVC screen and extended 2 to 3 feet above the well point screen. Next, a two foot thick bentonite seal was installed, followed by grouting the remainder of the void to within two feet of grade. At ground surface a protective casing (stand pipe or flush mounted gate box) was installed to complete each location. With the exception of well SHM-10-07, and SHM-10-11 through SHM-10-16 (2-inch PVC material), each was constructed using 1.5 inch diameter PVC material. A summary of the temporary monitoring well construction information is summarized on the boring logs which are attached as Attachment A to this report. Sovereign personnel developed each of the wells several days after construction in accordance with EPA Well Development procedures.

3.5 Media Sampling

During this investigation select groundwater and/or soil samples were collected and submitted for laboratory analysis. The limits of the testing or field screening program are outlined under the following sub-sections. Refer to **Tables 2** through **Table 5** for soil, groundwater profiling, and groundwater monitoring results. The locations of these sampling points are outlined within **Figures 2** through **Figure 5** of this document. All sampling operations were completed using the protocols and procedures outlined within the FSP, DAP, and USP-QAPP.

3.5.1 Field Screening

Groundwater samples obtained during the sampling operations were field screened or analyzed as detailed in the subsections below:

3.5.1.1 Arsenic Test Kit

Upon reaching the groundwater table, profiling samples were obtained at 10-foot sampling increments at both DPT and rotosonic drilling locations. At each profiling interval, groundwater was purged using either a stainless steel bladder pump or a peristaltic/inertial pump and select monitoring parameters recorded (Section 3.6.1.2). Next, representative samples were obtained and screened using an Industrial Test Systems Quick As - arsenic field test kit. These field testing results were used to provide preliminary information on the concentration of arsenic within the groundwater samples, and assist in the placement of the monitoring well screening depth. To confirm and obtain accurate information of the actual arsenic concentrations, a split sample was submitted for laboratory analysis. A comparison of the field testing results is detailed in Table 5. The field arsenic testing was conducted on the dissolved samples only. Prior to conducting the drilling program, a correlation study was conducted on several of the onsite monitoring wells RSK-12, RSK-24A, RSK-27, and RSK-32. The results of the testing program indicated the following:

Location	Laboratory Concentration	Arsenic Test Kit
RSK-12	736-ug/1	> 500-ug/1
RSK-27	425-ug/1	Approx 500-ug/1
RSK-32	285-ug/1	250 to 300-ug/1
RSK-24A	0.79-ug/1	5-ug/1

3.5.1.2 Sampling Parameters

During groundwater profiling and monitoring well sampling, the samples were passed through a YSI meter with a flow-through cell, which was properly calibrated at the beginning of each day and post-calibrated at the end of the day. The YSI was used to monitor, dissolved oxygen, pH, temperature, specific conductivity, and oxygen reduction potential. A separate turbidity meter was used to monitor turbidity. Samples were collected upon achievement of field parameter stability, if the event field parameters did not stabilize within 2 hours, samples were collected at the 2 hour time mark. Summaries of the results are provided in Table 2 and Table 3, and the sampling monitoring logs are attached as Attachment C.

3.5.2 Soil Sampling

During the rotosonic and DPT drilling programs, representative soil samples were collected using a continuous sampling approach. Each sample was reviewed, classified and logged by the site geologist. Only soil samples collected during the rotosonic drilling events were stored, with representative soil samples designated for laboratory analysis or the column study. In general, the underlying soils consisted of sand with varying percentages of silt, gravel, and rock fragments. Refusal conditions were encountered, presumably at bedrock at each of the completed boreholes, with glacial till encountered above the refusal conditions in several locations. A detailed summary of the soil conditions is provided on the Boring Logs which are attached as **Attachment A** to this report.

Three soil samples obtained from SHM-10-07 at sampling depths of 29-feet, 41-feet, and 53-feet were analyzed for TAL Metals and TOC. In addition, 86 soil samples obtained from SHM-10-11 through SHM-10-16 were analyzed for concentrations of TAL Metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, thallium, vanadium, and zinc) and TOC. Each soil sample was analyzed following the appropriate analytical methods listed in worksheets 15-3 and 15-4 of the approved UFP-QAPP. As part of this sampling program, QA/QC procedures included the use of duplicate samples, matrix spikes, matrix spike duplicates, and rinsate blanks. The orientation and results of the testing is summarized in Table 4, with the laboratory report attached as Attachment D. None of the soil samples obtained during the DPT drilling were submitted for laboratory analysis. No soil samples were collected during the completion of the redox profiling sampling program (SHM-10-17 through SHM-10-27).

Soil cores from borings SHM-10-07 and SHM-10-11 through SHM-10-15 were also sampled to obtain representative strata within each boring to aid in the MNA/SS evaluation. The focus of the sampling was to profile TOC, DOC, DIC, Eh, pH, Conductivity, Turbidity, Total and Dissolved arsenic and iron in the landfill since arsenic mobilization is primarily due to enhanced reducing conditions from the landfill. As long as strongly reducing conditions exist, arsenic will continue to enter groundwater. The samples collected from the borings were selected for analysis via the following methodology:

- 1.) Collection of discrete samples from the waste, peat, and wetlands deposits that constitutes the likely layers in the landfill profile,
- 2.) Collection of aquifer sands overlying bedrock based on recognizable strata,
- 3.) Collection of the upper 5 ft of weathered and/or bedrock, and
- All cores were logged in the field. Based on core logging, samples from each important strata were collected

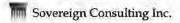
Where soil cores encountered landfill waste and/or bedrock, waste samples were analyzed for:

- Total metal(loid)s (TAL)
- TOC
- X-ray Diffraction (XRD) for common mineralogy
- · Sequential Chemical Extraction to identify major solid phase partitioning of arsenic, and
- Thin-section/scanning electron microscopy for identification of arsenic and metal bearing phases.

3.5.3 Groundwater Sampling

Groundwater samples were obtained during the profiling operations and monitoring well sampling program (2 events spaced approximately 2-3 months apart) were used to evaluate groundwater contaminant and chemistry conditions. The results of the testing program are summarized within Tables 2 and Table 3, with the laboratory reports attached as Attachment E and Attachment F to this report. Copies of the field sampling logs are attached as Attachment C. The locations of each sampling point are detailed in Figures 2 and Figure 3. As part of this sampling program, QA/QC procedures included the use of duplicate samples, matrix spikes, matrix spike duplicates, and rinsate blanks. All groundwater samples were collected in accordance with the January 2010 USEPA Region I Low-Stress / Low-Flow groundwater sampling guidance document.

New wells and select existing wells were also sampled to provide at least 6 transects for geochemical analysis. The data was analyzed to identify major geochemical changes in the north end of plume and along several transects emanating from beneath the landfill and extending into the north end of the plume. For the flow path analysis, the following well transects were analyzed (Figure 2 and Figure 3):



- a. <u>Transect A-A'</u>; Landfill South to North: SHM-10-11, SHM-10-12, SHM-10-14, SHM-10-15, SHM-10-16, SHM-10-18, and SHM-10-24
- b. Transect B-B': East of center of landfill South to North: SHM-10-11, SHM-10-07, SHM-10-06A, SHM-10-16, SHM-10-18, and SHM-10-24
- c. <u>Transect C-C'</u>: West to East at Wetland Boundary, Wells SHM-10-22, SHM-10-10, SHM-10-19, SHM-10-17, SHM-10-23, SHM-10-25, and SHM-10-27
- d. Transect D-D': West to East at Wetland Boundary, Wells SHM-10-22, SHM-10-10, SHM-10-19, SHM-10-18, SHM-10-24, and SHM-10-25
- e. <u>Transect E-E'</u>: West to East on North side of Brook Wells SHM-10-08, SHM-10-02, SHM-10-03, and SHM-10-04.
- f. <u>Transect F-F'</u>: South to North across Wetland, Wells SHM-10-08, SHM-10-02, SHM-10-03, and SHM-10-04

3.5.3.1 Groundwater Profiling

Upon reaching the groundwater table, profiling samples were obtained at 10-foot sampling increments. At each profiling interval, water was purged through a YSI flow through cell and monitored for DO, pH, temp, specific conductivity, and ORP. Turbidity was monitored with a separate instrument. Next, representative samples were obtained and screened using an arsenic field test kit. A summary of the monitoring parameters and arsenic test kit results is provided in **Table 5**. In addition split samples at each sampling interval were laboratory analyzed for total and/or dissolved metals (arsenic, calcium, iron, magnesium, manganese, potassium, and/or sodium), alkalinity, ammonia, nitrite, COD, chloride, nitrate, and sulfate following the appropriate analytical methods listed in worksheets 15-1 and 15-2 of the approved UFP-QAPP. The groundwater samples were collected in accordance with the January 2010 USEPA Region I Low-Stress / Low-Flow groundwater sampling guidance document. A tabulation of the results is detailed in **Table 2**, while copies of the laboratory reports are provided as **Attachment F**.

3.5.3.2 Temporary Monitoring Well Sampling

Temporary groundwater monitoring wells were constructed within SHM-10-01 through SHM-10-04, SHM-10-05A, SHM-10-06, SHM-10-06A, SHM-10-07, SHM-10-08, and SHM-10-10 through SHM-10-16. At each of these points, the construction depth of the well point screening was based upon the arsenic profiling results. Several days after installation, each monitoring well was purged and developed in preparation for the initial groundwater sampling event. During the two groundwater sampling events (separated by 2-3 months), the purge water was monitored for DO, pH, temp, specific conductivity, and ORP using a properly calibrated YSI meter. Turbidity was monitored with a separate instrument. Samples were collected after the field parameters stabilized or after 2-hours of purge if stabilization was not encountered. The collected samples were placed in the appropriate container, logged on a chain-of-custody, and analyzed for total and/or dissolved metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, thallium, vanadium, and/or zinc), hardness, alkalinity, TDS, TSS, ammonia, nitrite, nitrate, DIC, DOC, COD, TOC, chloride, sulfide, and/or sulfate following the appropriate analytical methods listed in worksheet 15-1 and 15-2 of the approved



UFP-QAPP. The groundwater samples were collected in accordance with the January 2010 USEPA Region I Low-Stress / Low-Flow groundwater sampling guidance document [EQASOP-GW001, Revision Number 3]. A tabulation of the laboratory results is detailed in **Table 3**, the field sampling parameters in **Table 5**, and the laboratory reports are provided as **Attachment E**.

3.6 Quality Assurance / Quality Control Procedures

Field QC samples that were prepared and submitted to the laboratory for analyses during performance of this field effort consisted of equipment blanks (for all analyses), duplicate samples (for all analyses), and matrix spike/matrix spike duplicate samples (for all analyses). A summary of the QC samples is presented in **Table 2** through **Table 5**. The frequency and method of collection of field QC samples are described in the UFP-QAPP.

Decontamination of equipment used during the investigation program was conducted as follows:

- All down-hole drilling equipment was decontaminated prior to initial use and between each borehole. Non-dedicated groundwater sampling devices (i.e., pumps, etc.) were decontaminated prior to initial use and between collection of each sample to prevent the possible introduction of contaminants into successive samples. Equipment was decontaminated at the sample location, or at a pre-designated, controlled location. All equipment was decontaminated before leaving the site.
- Decontamination of drilling equipment included drill bits, drill-string tools, drill rods, tremie pipes, clamps, hand tools, steel cable, along with pump drop-lines and pumps. These items were cleaned, by the subcontractor, using a steam pressure washer.
- Equipment decontaminated included the water level and water quality meters, pumps and pump equipment, and miscellaneous tools. All items were cleaned using the method detailed within the Sampling Equipment Decontamination SOP which is part of the FSP.
- Heavily soiled equipment was washed a second time using an aqueous non-phosphate detergent solution and using a portable, high presser steam cleaning equipment.
- All non-dedicated equipment was decontaminated in accordance with the procedures presented in the Sampling Equipment Decontamination SOP which are part of the FSP.

4.0 SCREENING AND LABORATORY SAMPLING RESULTS

The results of the field sampling and analysis are outlined within the following sub-sections. A discussion and evaluation of these results are covered under later section of this report. Tables 2 through Table 5 provide a summary of the results, and Figure 2 through Figure 3 for the location of the sampling points.



4.1 Field Screening

4.1.1 Arsenic Test Kit

As stated previously, an Industrial Test Systems Quick As – arsenic test kit was employed to field screen the collected groundwater profiling samples for concentrations of arsenic. In addition, a split sample was submitted to the analytical laboratory for arsenic testing. The arsenic field test kit was confined to a calibration range of less than 5-ug/l to a maximum of 500-ug/l. In general, a review of the results noted that the test kits provide a slight overestimate of the arsenic concentration. In some cases, sample dilution was used to evaluate concentrations over the 500-ug/l. A review of the results confirms that the temporary well screen construction depths were situated in zones of maximum arsenic impact. A tabulation of the arsenic test kit results against the laboratory results is provided in **Table 5** to this report.

4.1.2 Sampling Parameters

During groundwater sampling (profiling and monitoring well), the purge water was monitored for turbidity, dissolved oxygen, pH, temperature, specific conductivity, and oxygen reduction potential using properly calibrated field equipment. A summary of the results at the collection of the samples is detailed in Table 2 and Table 3, while a copy of the monitoring log is attached as Attachment C.

4.2 Soil Sample Analytical Results

To characterize subsurface soil samples obtained during the exploration program, representative samples were collected and submitted for laboratory analysis. These samples were prepared in accordance with the testing methodology and analyzed for TAL Metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, thallium, vanadium, and zinc) and TOC. A summary of the concentrations ranges is recorded as follows:

Compound	Concentration	in mg/Kg		Concentration in mg/Kg	
	Min	Max	Compound	Min	Max
Aluminum	1,400	30,000	Antimony	ND (< 0.17)	11
Arsenic	1	62	Barium	5	200
Beryllium	< 0.09	2	Cadmium	ND (< 0.03)	220
Calcium	250	25,000	Chromium	2	69
Cobalt	1	21	Copper	1	310
Iron	950	140,000	Lead	2	1,200
Magnesium	430	21,000	Manganese	22	3,000
Mercury	< 0.002	2	Nickel	3	101
Potassium	160	11,000	Selenium	ND (< 0.11)	3
Silver	< 0.03	14	Sodium	< 22	3,200
Thallium	< 0.23	< 2.19	Vanadium	2	49
Zinc	8	13,000	TOC	< 0.01 %	25%

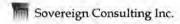
Copies of the laboratory reports are attached as Attachment D and a complete summary of the soil testing results are tabulated in Table 4. Figure 2 and Figure 3 provide a depiction of the location of the sampling points.

4.3 Groundwater Sample Results

4.3.1 Temporary Monitoring Wells

Following the construction and purging of the groundwater monitoring wells, two separate groundwater sampling and analytical events were conducted on the date and at the locations detailed on Table 3. Groundwater samples were collected from the wells using the procedures outlined in the FSP and USF-QAPP, and analyzed for total and/or dissolved metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, thallium, vanadium, and/or zinc), hardness, alkalinity, TDS, TSS, ammonia, nitrite, nitrate, DIC, DOC, COD, TOC, chloride, sulfide, and/or sulfate following the appropriate analytical methods listed in worksheet 15-1 and 15-2 of the approved UFP-QAPP. In general, concentration ranges were noted as follows and represent conditions at each of the well point screening depths of the analyzed monitoring wells:

0 1	Total Analysis	(ug/L)	Dissolved Analysis (ug/L)		
Compound	Min	Max	Min	Max	
Aluminum	27.6	3,870	< 3.82	35,8	
Antimony	0.19	1.93	0.17	2.99	
Arsenic	0.59	7,930	0.14	8,110	
Barium	40.3	160	36.5	154	
Beryllium	< 0.118	0.07	0.07	< 0.59	
Cadmium	< 0.236	< 0.59	< 0.236	< 0.59	
Calcium	14,200	182,000	2.230	195,000	
Chromium	0.38	15.9	< 0.186	0.73	
Cobalt	0.84	28.6	0.73	29.3	
Copper	0.64	6.88	0.34	2.06	
Iron	508	149,000	16.9	145,000	
Lead	0.07	4.72	ND (< 0.05)	2.08	
Magnesium	1,660	23,600	163	127,000	
Manganese	9.54	27,400	6.78	25,800	
Mercury	< 0.012	0.1218	< 0.012	0.1268	
Nickel	1.16	23.5	0.27	22.2	
Potassium	1,770	18,800	841	101,000	
Selenium	0.54	0.74	< 0.406	0.7	
Silver	< 0.085	< 0.85	< 0.085	< 0.85	
Sodium	7,090	536,000	1,400	536,000	
Thallium	0.05	< 0.31	0.05	< 0.31	
Vanadium	0.31	1.85	0.08	0.22	
Zinc	3.49	54.6	3.91	37.7	



C	Concentration	in mg/L	Commona	Concentration in mg/L	
Compound	Min	Max	Compound	Min	Max
Hardness	41	490	Alkalinity	4.3*	500*
TDS	110	1,900	TSS	ND (< 5)	640
Ammonia	ND (< 0.017)	9.7	Nitrite	ND (< 0.002)	0.5
COD	ND (< 7)	62	Chloride	1.3	1,100
Nitrate	0.008	3.8	Sulfate	< 0.12	87
Sulfide	ND (< 0.1)	ND (< 0.1)	TOC	0.64	4.8
DOC	<1	62	DIC	< 8	150
* Alkalinity unit	s are mg CaCO3/L				

Copies of the laboratory reports are attached as **Attachment** E and a complete summary of the testing results are provided in **Table 3**. The locations of the sampling points are shown in **Figure 2** and **Figure 3**.

4.3.2 Profiling

Samples obtained during groundwater profiling were prepared in the appropriate laboratory container, logged on a chain-of-custody, and analyzed for total and/or dissolved metals (arsenic, calcium, iron, magnesium, manganese, potassium, sodium), alkalinity, ammonia, nitrite, COD, chloride, nitrate, and sulfate following the appropriate analytical methods listed in worksheets 15-1 and 15-2 of the approved UFP-QAPP. The concentration ranges were noted as follows:

	0 1	Concentrations in ug/L						
Compound	Sampling	Test Kit [D	issolved]	Dissolved		Total		
	Point	Min	Max	Min	Max	Min	Max	
Arsenic	GP-10-01	ND (< 5)	5	0.3	0.97	0.48	18.9	
	GP-10-02	ND (< 5)	5	ND (< 0.226)	8.68	0.41	84.6	
	GP-10-03	ND (< 5)	ND (< 5)	ND (< 0.452)	3.85	0.89	42.1	
	GP-10-04	ND (< 5)	20	0.15	15.1	1.22	214	
	GP-10-05	ND (< 5)	150	0.31	112	1.02	130	
	GP-10-05A	ND (< 5)	ND (< 5)	0.33	5.09	0.93	911	
	GP-10-06	5	> 500	10	2,540	17.2	2,660	
	GP-10-06A	ND (< 5)	60	ND (< 1.13)	106	0.59	1,090	
	GP-10-07	ND (< 5)	> 500	58	1,350	283	1,240	
	GP-10-08	ND (< 5)	ND (< 5)	0.31	1.06	2.07	19.8	
	GP-10-09	ND (< 5)	ND (< 5)	0.15	0.94	0.45	183	
	GP-10-10	ND (< 5)	ND (< 5)	0.27	2.47	0.34	13.7	
	GP-10-11	< 5	150	19.8	396	230	760	
	GP-10-12	30	> 500	38.9	3,880	-	4320	
	GP-10-13	< 5	> 500	12.2	1,060	120	176	

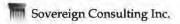


	0 1	Concentrations in ug/L							
Compound	Sampling Point	Test Kit [Dissolved]		Dissol	ved	Total			
	Polit	Min	Max	Min	Max	Min	Max		
Arsenic	GP-10-14	5	> 500	14.4	15,100	39.1	17,300		
	GP-10-15	70	> 500	278	16,600	-	17,200		
	GP-10-16	< 5	100	1.89	445	19.3	333		
	GP-10-17	< 5	500	0.25	1,860	0.58	1,950		
	GP-10-18	< 5	80	0.73	390	0.93	373		
	GP-10-19	< 5	100	0.35	810	0.53	886		
	GP-10-20	< 5	50	0.066	429	1.6	446		
	GP-10-21	< 5	60	0.31	349	1.48	322		
	GP-10-22	< 5	< 5	0.37	14.5	0.51	15.8		
	GP-10-23	< 5	> 500	0.38	1,100	0.52	1,160		
	GP-10-24	< 5	250	0.39	615	1.52	629		
	GP-10-25	< 5	5	0.4	34.9	10.9	44		
	GP-10-26	< 5	< 5	0.18	1.96	0.6	6.48		
	GP-10-27	< 5	> 500	0.38	1,040	1.11	1,100		

The GP and SHM notation refer to the same locations. Refer to Figure 2 and Figure 3 for the location of these points using the SHM notation.

Dissolved	Concentration	n in ug/L	Dissolved	Concentrat	ion in ug/L
Compound	Min	Max	Compound	Min	Max
Aluminum	4.17	345	Antimony	< 0.12	2.39
Barium	5.73	244	Beryllium	< 0.059	< 0.295
Cadmium	0.08	< 0.59	Calcium	2,100	288,000
Chromium	0.2	2.66	Cobalt	0.31	45.2
Copper	0.25	4.32	Iron	57.9	122,000
Lead	< 0.01	0.59	Magnesium	218	38,700
Manganese	21.1	30,700	Mercury	< 0.012	0.1389
Nickel	1.34	25	Potassium	422	25,400
Selenium	< 0.406	0.79	Silver	< 0.085	< 0.34
Sodium	639	598,000	Thallium	< 0.031	0.21
Vanadium	0.1	2.23	Zinc	1.81	44.4
Hardness	210	210	Alkalinity	9	530
V-00-00-00-00-00-00-00-00-00-00-00-00-00				mg CaCO3/L	mg CaCO3/L
TSS	< 5	55,000	Chloride	0.43	1,200
Ammonia	0.0166	17.3	Nitrite	ND (< 0.002)	0.025
Nitrate	0.009	5.8	Sulfide	< 0.1	< 0.1
Sulfate	ND (< 0.12)	97	COD	ND (< 7)	170
DOC	<1	15	DIC	6.4	170

Copies of the laboratory reports are attached as Attachment F and a complete summary of the testing results are provided in Table 2. The locations of the sampling points are shown in Figure 2 and Figure 3. Geological profiles depicting the concentration gradients of the results are attached as Figures 6 through Figure 28. These profiles show the vertical groundwater profiling results of dissolved arsenic, dissolved iron, dissolved manganese, oxidation reduction



potential (Eh), and dissolved organic carbon. An evaluation of these profiles is presented in **Section 6.0** of this report.

4.4 Landfill Gas Evaluation

For this evaluation, AMEC evaluated whether dissolved methane gas in groundwater from the landfill presents a potentially unacceptable hazard to nearby structures. Methane is not toxic at concentrations up to the lower explosive limit (LEL) and is an asphyxiant at higher concentrations. The primary concern is thus the possibility of methane gas explosion within structures. The results of this investigation determined dissolved methane conditions did not pose an explosive hazard within 10-feet of a building using a dissolved methane concentration of 10-mg/l. A copy of the Landfill Gas Evaluation Report prepared by AMEC is attached as Attachment G.

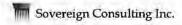
4.5 Data Validation

Sovereign contracted AMEC to conduct a data validation of analytical data collected during the field investigation program. AMEC's data validation and data quality review methodology complied with the validation procedures specified in the QAPP. In accordance with the specifications of QAPP Worksheet #35, all laboratory data was processed through the ADR software and the ADR reports were reviewed by an AMEC chemist. A Data Validation Report was prepared for each laboratory sample delivery group indicating any data limitations.

The review of soil and ground water sampling results were evaluated for the usability of the data and to determine any limitations on their use in drawing conclusions about the extent of contamination at the Shepley's Hill Landfill. Based on the data validation and data quality assessment, the analytical data set completeness was calculated as 100 percent. No data was rejected.

A number of analytical and/or sampling biases were applied to the data set. These were the result of imprecision between laboratory and field duplicates, low and high matrix spike recoveries, low or high post digestion spike recoveries, high serial dilution relative percent differences, exceeded holding times, and results reported between the LOQ and LOD. Overall, results were qualified as estimated (J or UJ). These data are considered usable and of acceptable quality. Additional biases were applied due to detections in associated method, calibration and equipment results. Results that had concentrations less than 10-times the blank concentrations were U qualified because of potential contamination.

Overall, the data set satisfies completeness and quality objectives and data can be used for their intended purposes with confidence. Copies of the Data Validation package are provided as **Attachment H** to this report.



5.0 EVALUATION/UPDATE HYDROGEOLOGIC CONDITIONS

This hydrogeologic assessment integrates data collected during 2010 including geophysical survey transects in the Nonacoicus Brook area, lithologic logs and refusal depths from borings constructed within and downgradient of the landfill footprint, and water levels collected from both existing and new monitoring wells.

5.1 Bedrock Surface

Based largely on the results of the geophysical survey, it is evident that the buried bedrock surface, and consequently the saturated thickness of the permeable overburden aquifer, is considerably shallower than previously interpreted in the Nonacoicus Brook area (see Figure 29) by as much as 50%. Boring refusal depths around Nonacoicus Brook confirm these results. It should be noted that there are some discrepancies with the presumed bedrock depths encountered during DPT investigations due to the two-step process of the DPT work. In many cases, the initial vertical profiling DPT work was completed with narrow diameter drilling tools which may be able to penetrate into glacial till and/or saprolitic rock. Secondary DPT work to install the temporary wells was completed using larger diameter tools necessary to install the wells. In some instances, the depth to refusal for the second phase of drilling was shallower than the first. In general, refusal and presumed bedrock depth evidence is weighted to the depths noted by the smaller diameter vertical profiling results. Further, the broad east-west trending bedrock 'trough' thought to be present under the brook corridor instead consists of both a narrow east-west trending 'tributary' directly under the brook axis and a northnorthwest trending tributary which extends north of the brook. The reduction in overall saturated thickness due to this structure requires that horizontal groundwater velocities are higher than previously interpreted and modeled in this area as there is substantially less aquifer through which it can flow. Based on the assessment of hydraulic gradients discussed below, it is most likely the deep arsenic plume is confined to the east-west trending trough directly under the brook axis and not the north-northwest trending trough. This is also supported by the absence of arsenic in SHM-10-04 located directly within this trough.

Within and around the landfill, boring refusal depths are both shallower and deeper, however, they generally confirm the prior interpretation of a north-south trending bedrock trough just east of Shepley's Hill. Immediately west of Red Cove at SHM-10-07 and in the area east of the extraction wells at SHM-10-06, bedrock was shallower than previously understood, further confirming the presence of a north-south trending ridge generally coinciding with the eastern edge of the landfill cap.

As groundwater flow patterns at the site are strongly influenced by variations in saturated thickness, these data have significant implications with respect to preferential pathways within the overburden aquifer. Consequently, this information has been integrated into the latest groundwater model variants to provide updated predictions of contaminant flow paths as discussed below.



5.2 Lithologic Features

In terms of lithologic variations within the overburden that might also define preferential pathways, the new borings are consistent with previous observations that local overburden is dominantly well sorted sands with little stratification. Gravelly zones were present in a few of the borings in and around Nonacoicus Brook (SHM-10-01, SHM-10-03, SHM-10-09, and SHM-10-10), consistent with where gradients decrease and hydraulic conductivity is hypothesized to increase. The sole occurrence of a silt lens was in SHM-10-02 midway within the 60' of overburden. Within the landfill footprint fairly thick occurrences of peat were found in SHM-10-13 and SHM-10-14, consistent with their location in the historic wetland. This unit may have hydraulic implications and potentially could result in perched or semi-confined conditions locally. Lastly, the basal till unit is further confirmed to vary widely in terms of its thickness and is in places laterally discontinuous.

5.3 Water Levels

Static water levels were collected from all new monitoring wells between July and October. These data were integrated with the regularly scheduled fall synoptic survey of existing wells conducted under the Long Term Maintenance and Monitoring Plan (LTMMP) to produce a current water table elevation map (Figure 30) extending to the Nonacoicus Brook area. While this may not represent a true synoptic snapshot of the water table, it is evident that Fall 2010 water levels are uniformly lower than for Fall 2009 (and long term averages) particularly around the extraction wells, a condition likely related to the late summer drought experienced across the region. As a consequence, horizontal hydraulic gradients are generally 'flatter' or lower than under more typical seasonal conditions, ranging from 0.003 to 0.012 ft/ft over the majority of the landfill (corresponding to groundwater transport velocities of 0.15 to 1.7 ft/day). In contrast, the gradient along Nonacoicus Brook is considerably flatter, on the order 0.0015 ft/ft. Within the northern half of the landfill groundwater flow direction, as inferred from water table contours, is predominantly northward, while in the southern half flow direction is more north-northeast. It should be noted that water levels in the N5 cluster are higher than those in the three new wells immediately surrounding it (and existing well SHP-99-29X) though water levels in those wells appear internally consistent.

A number of vertical well pairs in the area downgradient of the extraction wells exhibit water level differences of 1 to 3 feet including SHM-99-31, SHM-05-34, SHM-05-39, SHM-05-49, and the N1 cluster. This difference is presumably related to the 'deflated' water table resulting from drought conditions. These strong downward gradients are interpreted to reflect increased recharge to the shallow aquifer from the pond, and the portion of Nonacoicus Brook nearest the pond, relative to typical seasonal conditions.

Water levels from new wells both south and north of Nonacoicus Brook suggest the horizontal gradient, though not very steep, is uniformly westward. Consequently, the projected arsenic plume trajectory based on field data alone is along the axis of the brook, consistent with previous groundwater flow path modeling predictions.



5.4 Particle Track Prediction

In order to update the numerical groundwater flow model and flow path predictions using the particle tracking technique, the revised bedrock surface interpretation shown in Figure 29 was incorporated into the current model (SHL007). The groundwater flow model was revised subsequent to the 2010 Supplemental Investigations, principally through adjustment of the interpreted bedrock surface. The development, calibration and refinement of the revised model (SHL008) was reported in the AOC 72 Remedial Investigation Report (AMEC, 2011) and the 2009 Annual Report (ECC, 2010). The latest revisions were focused on the bedrock surface, integrating data from drive points, borings, and geophysical studies undertaken as part of the SAR. This revised model is used to explore a range of hydraulic control remedial alternatives in The model in its present state is considered adequate to support early-stage this FFS. comparison of remedial alternatives for the FFS, but will be further refined to support the Remedial Design. Subsequently, the impact of this structural change on calibration of the model was evaluated. It can be shown that not only does this new variant adequately match long-term average water levels (see Table 6 and, Figure 31) but calibration was slightly improved relative to preexisting data.

Using the revised model (SHL008), forward particle tracking was conducted to both update the prediction of current captures zones (Figure 32) and simulate the trajectory of current Arsenic exceedances in the aquifer, including those in new wells constructed in 2010 (Figure 33). Relative to the previous model predictions documented in the 2009 Annual Report (ECC, 2010) the capture zone under peak operating rate (49 gpm) is slightly larger, extending father east some 50-60 feet closer to the landfill boundary. This is likely the direct consequence of the reduction in average saturated thickness due to bedrock being shallower than previously interpreted.

As depicted in Figure 33, patterns of flow and velocity relationships have changed somewhat relative to previous predictions. Predicted groundwater transport velocities within the landfill average just over 0.6 feet/day and are largely identical to the preceding SHL007 model. In the area immediately downgradient of the landfill toe, velocities average just under 0.5 feet/day, as the magnitude of horizontal hydraulic gradient declines slightly. Within the Nonacoicus Brook corridor, gradient is much flatter and consequently velocities rapidly decline to less than 0.1 feet/day as the deeper groundwater flow becomes entrained with the westward flowing stream. The most significant difference between previous predictions and the new SHL008 model is that particle tracks representing detections all discharge upgradient of the 'bend' in the brook, and no longer travel farther west before discharging into Nonacoicus Brook or the Nashua River. This again is a direct consequence of the reduction in average saturated thickness due to bedrock being significantly shallower than previously interpreted. Further, the quantity of water predicted to discharge along the brook is increased, as would be expected with less aquifer available through which to flow horizontally.



6.0 MNA/SS LANDFILL REDUCING CONDITIONS EVALUATION

The purpose of this section is to present collected data and to summarize the technical findings concerning (1) Shepley's Hill Landfill groundwater characterization, (2) the landfill source strength (SS) and reducing conditions, and (3) effectiveness of monitored natural attenuation (MNA). This section also addresses data gaps as outlined in the AMEC 2010 Supplemental Groundwater Investigation Workplan Volumes 1 and 2, Sovereign 2010 Supplemental Investigation Workplan Volume 1 and 2, and the AMEC 2009 Supplemental Groundwater and Landfill Cap Assessment. The data and data interpretation presented here also serves to supplement information required for the Sovereign 2010 Focused Feasibility Study.

While source strength/landfill reducing conditions, site characterization, and evaluation of data for possible remedial alternatives appear as separate topics, they are linked in the overall conceptual site model and development of criteria for selecting an appropriate remedy for the landfill.

6.1 Objectives

The specific objectives are identified in Table 1 of the Sovereign Workplan (May 2010) and include:

- Objective 1 Natural Attenuation for the North Impacted Area Once capture (hydraulic control from the ATP) is demonstrated, establish that natural attenuation will be effective at remediating the North Impacted Area) within a timeframe that is reasonable given the circumstances of the site.
- Objective 2 Source Strength/Landfill Reducing Environment Evaluation Estimate the duration of the landfill's ability to maintain reducing/methanogenic conditions.

The results presented here are used to determine if attenuation is effective for remediation of the arsenic plume north of the arsenic treatment plant (ATP) capture zone within a timeframe that is reasonable given the complexities of the site due to the landfill induced reducing conditions. Evaluation of attenuation involves identifying the current distribution of arsenic in local groundwater and identifying the fate of arsenic as it moves from the landfill along the identified flow paths to its ultimate fate some distance from the landfill. In the present case this requires evaluation of the arsenic in the flow path as it approaches the Nonacoicus Brook and associated wetlands to the north of the landfill.

The study also addressed data collected to date that is required to determine the time it will take for the aquifer to return to normal (pre-landfill) if reducing and/or anaerobic conditions created by the landfill and underlying peat and wetlands were to cease. Pre-landfill in this context simply suggests the condition of the aquifer prior to landfill emplacement. While the landfill presumably leached arsenic and created its own reducing conditions, some degree of anaerobic conditions existed prior to the landfill due to the existence of the wetlands and peat over which the landfill was placed. The attempt to determine the pre-landfill conditions and the time it takes for restoration to occur to bring these conditions back is referred to as Source



Strength/Landfill Reducing Environment Evaluation. The landfill evaluation was approached by recognizing that arsenic release from beneath the landfill is linked to conditions within the landfill that add to reducing and methanogenic conditions including the presence of a peat layer within the former wetlands. Both arsenic and carbon cycling was evaluated in order to determine the landfill impact and the length of time required for arsenic or carbon depletion to occur.

In the present case, the landfill impact to reducing conditions and subsequent mobilization of arsenic is confounded by the presence of underlying wetlands and peat layers existing beneath and within the landfill footprint. The data collected as part of this study demonstrated that the underlying wetlands and peat layers generate their own reducing conditions with or without the landfill.

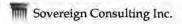
6.2 Review of Data Collection Efforts

In the summer of 2010 the following field work and types of samples were collected. A description of the data gaps, use of samples and resulting data is described in the 2010 Workplan Addendum and summarized below:

Data Gap	Data Collection Objectives	Type(s) of Samples Collected
Arsenic Distribution in Landfill and North Impacted Area	Fate and Transport Transect Analysis	2 rounds of groundwater sampling Landfill groundwater profiles DPT samples
Redox Boundary/MNA	Comparative water geochemistry	DPT samples North placed wells and water samples
Landfill Profiling: Solids and Water profiles	Landfill borings for solids and water	5 new borings and landfill wells
Arsenic Source and Fate	Solids and water geochemistry Column studies	Core samples from 6 borings Water profiles from new borings Select core for flushing and release studies
Carbon Source and Fate	Solids and water geochemistry Column studies	Core samples from 6 borings Water profiles from new borings Select core samples for flushing and release studies
Waste Distribution and Characterization	Landfill borings for solids	Core samples by lithology for 6 new borings

6.2.1 Laboratory Bench and Column Studies

Several bench and column studies were initially proposed and are listed below. These studies include:



- A column study to determine the time (estimated from pore volumes) for clean water to restore the column to background conditions under conditions of high arsenic in pore water,
- A column study to determine the time for clean water to restore the column to background conditions under moderate arsenic pore water concentrations,
- A batch study to determine the rate at which organic carbon is degraded under anaerobic conditions
- A batch study to determine the distribution coefficient (Kd) of arsenic sorption to native aquifer sands, and
- A column study to determine the rate of release of arsenic from aquifer sands under reducing conditions typical of the landfill environment.

The initial list of bench studies was altered during the course of the investigation based on the data collected and were amended to the studies described below:

- Two column studies were conducted. The first was designed to test the number of pore volumes required to flush arsenic free from the sand under the influence of oxidized water infiltration.
- A second column study was conducted that also examined the number of pore volumes required to flush arsenic from a core sample but under reducing conditions instead. The same column was then allowed to run with more infiltration of reducing water in order to determine how much arsenic would be re-mobilized from the sand under continued reducing conditions. This study is essentially similar to the one designed to look at rate of release of arsenic under reducing conditions.
- The initial results and usefulness of the carbon degradation study is in question since only
 minute amounts of gas have been collected to date. This lack of degradation is now
 thought to be due to the negative effect of freezing on the microbial population. Therefore,
 the study was terminated since it would not provide any further information concerning
 carbon degradation rates.
- The Kd study was not done since the discussion with BCT and USACE indicated that a Kd developed from one site sample was probably insufficient to provide any meaningful data.
- All laboratory data can be found in Attachment I (Report of Findings, PRIMA Environmental).

6.2.1.1 Column Study

The high TOC arsenic flushing test under oxidizing conditions is described here along with the flushing of arsenic and remobilization column study under reducing conditions. (Refer to the PRIMA Environmental: Report of Findings, Shepley's Hill Landfill 2011, **Attachment I** for all column data).

The high arsenic column flushing test was conducted in duplicate using 2 inch diameter clear PVC pipe approximately 24 inches long. The columns were filled with approximately 3 kg of landfill soil from a moderate to relatively high (about 1,200 ug/L) arsenic containing portion of the landfill area and packed to a density similar to the native field density (see Attachment I for details). Next synthetic water (water that was made in the laboratory and based on composites of non-impacted well water from the site, refer to Attachment I for the composition) similar to up-gradient native groundwater was passed through the column in an up flow direction at a rate of about 1 pore volume per day. Effluent was collected in Tedlar bags in 12 hour increments (for example, 0-12 hours, 12-24 hrs, etc) for the first 3 pore volumes, after which it was collected in 24 hour increments. Influent water and effluent samples for the first 2.5 pore volumes, were analyzed for arsenic (total dissolved), total dissolved iron, DO, DOC, ORP, and pH. Additional samples in additional pore volumes were analyzed for the same constituents.

The study design is very similar to that conducted by the USGS at the Saco Landfill in Maine. The column parameters are summarized in **Attachment I**.

The second column test was conducted in exactly the same manner as above with a few important differences:

- The column was pre-flushed with reducing water made by passing tap water through zero-valent iron and then into the column.
- The reduced water was allowed to flush pore water arsenic out of the column until <5
 ug/L As could be detected.
- At this point reducing water was allowed to flow through the column at about a rate of 0.3 ft/day. Samples were collected every 3 to 4 days to examine the rate at which arsenic could be re-released or mobilized from the solids entrained in the sands.

Modeling of the column data and some of the transect data was also completed to understand the significance of geochemical changes due to the landfill conditions and at the redox boundary at the north end of the impacted area. Chemical analysis and speciation in the transects following groundwater flow was modeled using MINTEQA2 (USEPA), Geochemist's Workbench and PHREEQC2 which allowed a well by well comparison of key geochemical changes such as iron and arsenic solubility and precipitation as well as changes in dissolved oxygen, sulfate and Eh. Column data was analyzed using PHREEQC2 (USGS, 1999) which can be used to assess the changes in arsenic concentration due to geochemical conditions versus those due only to advection-dispersion. In this exercise, the flushing results were compared to model results where only advection and dispersion were considered since arsenic was removed not by adsorption or attenuation but by displacement with water containing no arsenic. The modeling input and output is also presented in **Attachment I**.



6.3 Site Characterization and Arsenic Distribution

Historic and recent data collected for examining arsenic distribution at the landfill includes water samples from numerous wells located adjacent to and down-gradient from the landfill, cores collected from borings, sediment samples and surface water samples. What is known presently and confirmed by the results of the newest work is presented herein:

- The landfill and underlying peat increase arsenic solubility due to biodegradation of carbonaceous material, oxygen depletion, creation of reducing conditions, and the reductive dissolution of arsenic containing iron solids;
- The landfill is <u>not</u> the main source of arsenic or dissolved organic carbon. Most arsenic
 appears to be associated with iron coated sands below the waste;
- The landfill cap is effectively decreasing the interaction of meteoric water with landfill waste;
- Only a portion of the waste is in contact with groundwater. Based on new estimates (Sovereign 2010) approximately 11% of the waste is thought to be saturated;
- Groundwater beneath the landfill has been characterized in terms of flow direction and velocity. Groundwater flow and direction has been modeled. In addition dissolved and suspended analytes in the groundwater flow path have been identified and quantified;
- Arsenic is likely precipitating beneath the wetlands at Nonacoicus Brook. The Brook
 appears to represent the northern most edge of the contaminated groundwater plume
 from the landfill. This area is also the primary redox boundary which occurs near or at the
 Brook/wetlands area north of the landfill; and,
- The redox boundary has been generally identified and the fate of arsenic at the Brook/wetlands investigated.

6.3.1 Arsenic Distribution in Landfill and North Impacted Area

The vertical and horizontal distribution of arsenic and other analytes within and north of the landfill in the north impacted area are presented as a series of geological transects constructed using the water chemistry profiles compiled from Sovereign temporary well installation and groundwater profiling conducted in 2010 and described below.

The transect locations are depicted in Figure 2 and Figure 3 and the arsenic distribution in each transect in Figure 6 to Figure 11. Other analytes in the same transects are shown in Figure 12 to Figure 28. Please note that only wells with depth profiles are shown in this exercise. Each transect is discussed below.



6.3.1.1 Geological Transect A-A' and Groundwater Profile Analysis

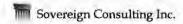
This transect is a south to north view of arsenic with depth from the south end of the landfill (SHM-10-11), through the center of the landfill (SHM-10-12,, SHM-10-14 and SHM-10-15) and then north to the Brook and wetlands (SHM-10-16, and SHM-10-18 and SHM-10-24) (Figure 2, Figure 3, Figure 12, Figure 17, Figure 21 and Figure 26 show other analytes along this transect). The transect represents a two dimensional slice through the apparent center of the highest arsenic area and then follows arsenic north as the concentrations gradually diminish. The highest arsenic concentrations are found in groundwater beneath wells SHM-10-14 and SHM-10-15 where arsenic exceeds 14,000-ug/L. The arsenic follows the dipping bedrock surface to the north and arsenic in general is found to be highest at depth above the till layer, in all wells except SHM-10-12 where high arsenic is encountered at 44 ft bgs. Proceeding north, there is a thinner profile of high arsenic through SHM-10-16 (about 500 ug/L) and then much lower arsenic at the Brook/wetlands boundary (<400 ug/L). This north end distribution is discussed further in the C, D and E Transects.

The arsenic distribution along the transects is noteworthy for several reasons:

- The highest arsenic concentrations are frequently found at depth. This could be from a source of arsenic that is at the same depth of the arsenic found in the groundwater, or due to a source of arsenic in the underlying aquifer that is not associated with the landfill. While several theories have been hypothesized for the existing distribution of arsenic, the data presently cannot confirm or deny these depositional hypotheses. Presently, it has been estimated based on drilling observations and mass calculations that only 11% of the waste is in contact with groundwater. Therefore the landfill may not be a significant source of arsenic presently but may have been one earlier in its history. The distribution of arsenic at Shepley's Hill is also similar to that found at the Winthrop Landfill in Maine. Keimowitz et al. (2005). At that site, the authors point to several lines of evidence as to why the Winthrop Landfill was not a source of arsenic. These include lack of enrichment of arsenic in hot spots beneath the landfill and in soil immediately below the waste, the fact that capping the landfill has not reduced arsenic concentrations in groundwater to any observable degree, and the fact that waste was not enriched in arsenic relative to native soil or rock, similar to Shepley's Hill.
- Some locations in the center of the landfill have very high arsenic concentrations (>14,000 ug/L) at depth but then immediately above the glacial till layer, arsenic concentrations in groundwater decrease dramatically to less than 400-ug/L. This may be due to infiltrating non-impacted groundwater entering beneath the landfill as recharge. At SHM-10-12 and SHM-10-15, groundwater at about 60 ft was partially oxygenated (6-mg/L) and contained arsenic at about 300-ug/L. This could be the original infiltrating landfill leachate boundary or recharging groundwater. Given the high DO contents, the latter seems more plausible as dissolved organic carbon would likely have caused the original oxygen in this layer to be consumed. Recent work by Gannett Fleming (2011) indicates that this lower concentration of arsenic in bedrock and till originates from oxidation reactions in the surrounding bedrock which then feeds the aquifer sands a continuous source of arsenic.



- The bedrock and till do not appear to be a major source of arsenic. Under oxidizing conditions as noted above, arsenic solubility will likely be controlled by sulfide oxidation (eg pyrite) which could lead to arsenic concentrations up to 400-ug/L as noted in the USEPA well on Shepley's Hill. While the concentration from bedrock weathering reactions, this process may be the original source of arsenic responsible for the arsenic enrichment in the aquifer sands prior to reducing conditions.
- Also as discussed with the BCT, it is understood that establishing a background number for SHL groundwater arsenic will be determined based on a monitoring program that is instituted as part of the final remedy as well studies performed by others including but not limited to the USGS, EPA and MassDEP. The USGS (USGS Special Report 2011-5013), EPA and MassDEP have and are performing studies to determine the background arsenic concentration in the regional groundwater. These studies have demonstrated that arsenic concentrations vary depending on whether the groundwater is oxidizing or reducing. Under oxidizing conditions arsenic will typically be controlled by sorption to hydrous ferric oxide (HFO) and by the weathering of arsenic occluded within pyrite or true arsenopyrite minerals. Under these conditions typical groundwater concentrations may range from <10 ug/L (Appelo, 2006) to 1,500 ug/L (Vermooten and Gunnink, 2007) depending on pH and bicarbonate concentrations. Near SHL, an EPA well has been found to contain about 400 ug/L in the bedrock which contains arsenopyrite. Other numerous regional studies indicate that concentrations up 2,000 ug/L in groundwater is possible from bedrock arsenic mineral weathering (Peters and Blum, 2003, Gilpin and Ayotte, 2006, Peters, 2008, Ryan et al., 2011 (in press), Lipfert et al., 2006, and Lipfert et al., 2007).
- Under reducing conditions, dissolution of HFO containing arsenic appears to be the most important control on arsenic concentrations. Ultimately the amount of arsenic found in groundwater in aquifers of this type will depend on the total solid phase arsenic in HFO, the extent of reducing conditions and the amount of dissolved sulfide which can precipitate soluble arsenic as well. Dissolution of HFO containing arsenic can result in ppm (>1,000 ug/L) levels of arsenic in solution (Appelo, 2006). A recent USGS (2011) report for arsenic in wells in bedrock units of central Massachusetts indicates background arsenic concentrations exceeding 1,500 ug/L. Given these fluctuations in background groundwater arsenic concentrations, a determination of the background to be used in the areas outside of the SHL will be based on a monitoring program that is instituted as part of the final remedy, and as agreed upon with USEPA and MassDEP.
- Based on the above, it seems most probable that the arsenic distribution pattern is due to a
 native source of arsenic in the underlying sands and then infiltration of groundwater with
 lower arsenic concentrations emanating from and along the bedrock surface. This is
 similar to distributions speculated by Harding ESE in the 2002 Supplemental
 Groundwater Investigation.
- Any interpretation should be qualified to recognize that the cap placed on the landfill has and will prevent further meteoric water infiltration which may have altered the original arsenic distribution pattern.



 The effect of the ATP could also be altering the arsenic distribution by pulling in nonimpacted water.

6.3.1.2 Geological Transect B-B' and Groundwater Profile Analysis

This transect (Figure 7) begins at the south end of the landfill then proceeds east from transect A-A' before again converging at SHM-10-16 to the north and then to the Brook and wetlands (see also Figure 2, Figure 3, Figure 7, Figure 13, Figure 18, and Figure 22 for other analytes on this transect). This transect presents the conditions on the eastern side of the landfill in contrast to the A-A' transect. The arsenic concentration is 396 ug/L at SHM-10-11 at the south end of the landfill, and then increases to 1,200 ug/L at SHM-10-07. SHM-10-07 is roughly east of and cross-gradient from the SHM-10-13, SHM-10-14, and SHM-10-15 cluster in the elevated arsenic concentrations. Wells north of SHM-10-07 have lower arsenic concentrations ranging from about 100 ug/L to 700 ug/L. Placing the A-A' transect in context with this transect suggests that arsenic is relatively low at the south end of the landfill (<400 ug/L), increases in the 29X, N-5, SHM-10-14 and 15 cluster (>14,000 ug/L), thins rapidly to the east through SHM-10-13 and SHM-10-07 (<1,200 ug/L) and then proceeds in a somewhat narrow flow path to the north. As with transect A-A', arsenic concentrations are generally higher at depth and the distribution generally follows the bedrock contour. As before, bedrock and till do not appear to be reduced but rather well oxygenated (DO = 5 and 9 mg/L at SHM-10-15 and SHM-10-13, respectively).

6.3.1.3 Geological Transect C-C' / D-D' and Groundwater Profile Analysis

Transect C-C' is at the north end of the site at the Brook/wetlands boundary (Figure 2, Figure 3, Figure 8, Figure 14, Figure 19, Figure 23 and Figure 27). This transect is located at the edge of the partially observed redox boundary and should be discussed with transect D-D' for clarity. Transect C-C' includes, from east to west, wells SHM-10-18, SHM-10-20, SHM-10-26 and SHM-10-01. Transect D-D' (Figure 2, Figure 3, Figure 9, Figure 15, and Figure 28) is similar to C-C' but steps slightly south and includes wells, from east to west, SHM-10-27, SHM-10-25, SHM-10-23, SHM-10-24, SHM-10-17, SHM-10-21, and SHM-10-22. The two transects run roughly parallel to each other and allow a comparison of groundwater chemistry at the edge of the wetlands to chemistry further south in the landfill flow path.

In C-C' (from east to west) the arsenic concentration is < 500 ug/L at SHM-10-18 and SHM-10-20 and then decreases to non-detectable at SHM-10-26 and SHM-10-01. Therefore in DPT profiling points immediately on the perimeter of the brook and wetlands, arsenic is quite low, especially to the west of SHM-10-18.

Comparing the C-C' wells to those in D-D' which extends even further east than C-C' it can be seen that arsenic concentrations in wells SHM-10-17, SHM-10-23 and SHM-10-27 is much higher or between 1,000 and 2,000 ug/L. Moving to the west of these points, arsenic again diminishes to less than 400 ug/L. Thus a redox boundary appears to occur to the north and west of the landfill, but not necessarily to the east, although in general the concentrations observed in these northern DPT points are much less than in the landfill.



The other notable characteristic of the transect analysis is that the bedrock surface also appears to control arsenic distribution. As noted in the C-C' transect, the highest arsenic groundwater appears to be flowing through a structural bedrock topographical trough beneath the wetlands. The newest bedrock elevation map (Figure 29) from AMEC (December 2010) confirms this structural trough. The bedrock elevation data is discussed further below.

6.3.1.4 Geological Transect E-E' and Groundwater Profile Analysis

Transect E-E' shows the west to east configuration of wells SHM-10-08, SHM-10-02, SHM-10-03, SHM-10-04 on the north side of the Brook. As noted no elevated arsenic occurs on this north side of the Brook (Figure 3 and Figure 10).

6.3.1.5 Geological Transect F-F' and Groundwater Profile Analysis

Transect F-F' is a east to west view from well SHM-10-03 on the north side of the Brook to the wells on the southern edge of the Brook (Figure 3, Figure 11, Figure 16, and Figure 20) wells SHM-10-27, SHM-10-25, SHM-10-23, SHM-10-24, SHM-10-17, SHM-10-19 and SHM-10-10. We note that the transect does not consider any arsenic concentrations that might be found east of this transect. Based on Figure 30, this transect runs perpendicular to the groundwater contouring pattern. In transect, F-F', arsenic impact to wells on the north side of the Brook (see also E-E') does not occur. On the south side of the Brook, well SHM-10-10 has less than 5-ug/L while SHM-10-17 has soluble arsenic at depth approaching 1,900-ug/L. The transect illustrates the landfill impact up to SHM-10-17 and east, but arsenic diminishes north at SHM-10-18 and west at SHM-10-10. The key to understanding the arsenic distribution in this transect relies on three important considerations: (1) the bedrock contour and resulting groundwater flow direction, (2) the change in arsenic chemistry near the south side of the Brook, and (3) the change in cation/anion chemistry in the wells along the Brook and wetlands. Bedrock contours (AMEC, December 2010) are shown in Figure 29. This updated bedrock delineation map (Figure 29) assists in explaining the important features for water quality data observed at both the north and south sides of the Brook. The bedrock elevation is at a low in the middle to north end of the landfill (120 to 140 ft msl). Water flow is then confined to a resulting structural trough bounded on the east by increasing bedrock elevation of 140 to 160 msl and to the west by bedrock elevations of 160 msl or higher likely from the Shepley's Hill bedrock surface. Bedrock remains at about 140 msl up to and through the wetlands, but still rises to the east, confining groundwater flow to a north and west direction. At approximately the location of the Brook, bedrock rises again to the north to 140 to 160 ft msl, near the location of the SHM-10-08, SHM-10-02, SHM-10-03 and SHM-10-04 wells. Bedrock slopes to the west to a 120 ft msl contour.

6.3.1.6 Geological Transect Evaluation

The general elevation of the northern most wells indicates that the bedrock surface is about 20 ft higher on the north side of the wetlands (at the location of the wells) and Brook than the southern side which indicates that groundwater flow is counter to flow from the landfill. This groundwater flow from the north provides the redox barrier that both oxidizes and precipitates arsenic at SHM-10-18 as it discharges into/below the wetlands.

The bedrock figure shows that on the north side of the Brook, bedrock slopes downward to the Brook, and to the west. In addition there is another structural trough on the north side of the Brook where water would also enter counter to the flow from the south side of the Brook. Where new data were not available the previous interpretation of the bedrock surface was retained, as is the case with the areas east and west of the geophysical survey transects. It is noted that bedrock outcrops are plotted on the USGS bedrock map to the north of Nonacoicus Brook, just beyond the short segment of 220' contour. Further, the eastern extent of Transect B-B' supports this systematic shallowing of the bedrock surface in a northeasterly direction. These observations preclude the possibility of a deepening trough between the end of Transect B-B' and the mapped outcrops.

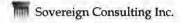
The water quality of the wells on the south side of the Brook (i.e. SHM-10-10 and other DPT locations) reveals an impact from water entering counter to the flow from the landfill. It is this water flow (from the north and east) that provides the redox boundary on the south side and west of the Brook. To examine the impact of non-landfill impacted water on water quality at the south side a comparison of well water chemistry from SHM-10-08, SHM-10-02, SHM-10-03, and SHM-10-04 can be made with SHM-10-10 and select DPT points.

Arsenic concentration decreases dramatically to the north of SHM-10-17 (1,800 ug/ \bar{L}) at SHM-10-18 (<400 ug/ \bar{L}) and west at SHM-10-19 (<800 ug/ \bar{L}) and SHM-10-10 (<5 ug/ \bar{L}). The decrease is presumed to be from mixing with water from the north side of the Brook and from the westerly flow of the Brook and wetlands. The zone of mixing is considered the redox zone or boundary, where more non-impacted water mixes with water from the landfill emanating through SHM-10-17 and SHM-10-18 resulting in iron oxidation and adsorption of arsenic. The zone exhibits reduced arsenic by 61% to 83% over a distance of about 20 meters. Arsenic in detectable quantities is therefore unlikely to ever occur in the wetlands or the Brook at this location.

To determine the extent of changes in the water chemistry from intrusion of oxidized, relatively arsenic-free water from the north, simple mixing calculations were performed to determine how much clean water is intruding and creating the redox boundary at the south side of the Brook and wetlands.

Cation and anion chemistry from the landfill may be characterized by SHM-10-14 or SHM-10-15. If this water is mixed with the water from the north side of the landfill, then predicted mixing scenarios are summarized in the following table (Data from sampling of screened wells in September 2010):

The table suggests that mixing ranges from 25 to 75% at the redox boundary depending on the analyte (conservative/non-conservative) used. Regardless of the percent mixing, it is clear that as landfill-impacted groundwater mixes with non-impacted groundwater, clear chemical changes are occurring.



Analyte	Landfill Well SHM-10- 14 (mg/L)	Ave of North Side Wells 08,02,03,04 (mg/L)	25:75 Mixing North Side Water/Landfill Water (mg/L)	50:50 Mixing (mg/L)	75:25 Mixing North Side Water/Landfill Water (mg/L)	Water Chemistry at SHM-10- 10 (Observed) (mg/L)
Ca	55	170	84	113	141	95
Mg	4	20	8	12	16	14
Na	15	40	21	28	34	26
K	17	5	14	11	8	4
Cl	6	100	30	53	77	20

6.3.2 Geochemical Changes Along Flow Path

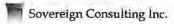
Other redox sensitive or redox-driven analytes can be compared to the arsenic distribution detailed above in order to illustrate the underlying geochemistry associated with arsenic mobility and fate at the site. This is also illustrated through a series of transects presented in Figures 6 through Figure 28. The transects are discussed per analyte and how each is distributed compared to arsenic.

6.3.2.1 Iron and Manganese

The iron and manganese (Figures 12 to Figure 19) concentrations in the groundwater profiles depicted in each transect are similar to the arsenic distribution (see Figures 6 through Figure 11) described above. In general, iron is found highest at depth (except at the top of the bedrock surface where it is very low (less than 0.5 mg/L)). Additionally, iron and manganese concentrations tend to diminish slightly with distance from the landfill. For example concentrations of dissolved iron range from 44 mg/L to 110 mg/L in the elevated arsenic area and decrease to 30 mg/L at the redox boundary. Manganese decline from north to south does not occur to the same extent as iron. This process has been noted in other landfill induced groundwater regimes presumably due to the ease with which manganese is reduced. Thus manganese will persist until very well oxidized conditions are again encountered.

6.3.2.2 Redox Potential (Eh)

The measured redox potential (Eh) does not always correlate to the presence of redox sensitive species such as iron, manganese, sulfate etc. However at the landfill Eh is a reasonable indicator of conditions where elevated iron, manganese or ammonia should exist and correlates reasonably with where these constituents should be found. The observed Eh does not however identify where the highest concentrations of redox sensitive species exist (see Figures 21 through Figure 25). It should be noted that ORP is not a particularly sensitive parameter. The electrode response to mixed redox couples is unknown. If redox was calculated from known redox chemistry in the borings a different result may have been obtained. As it is, most of the redox measurements appear to be buffered by the Fe (II)/Fe (III) couple and possibly the sulfate/sulfide couple.



6.3.2.3 Carbon Degradation

Carbon degradation species (ammonia, DOC, alkalinity). The distribution of carbon related species requires some background information as to their geochemical formation. Under anaerobic conditions such as observed at the landfill, carbon bearing molecules degrade in a very general sense via:

$$C_aH_bO_cN_dS_e + (a-b/4-c/2+3d/4+e/2) H_2O = (a/2+b/8+c/4+3d/8+e/4) CO_2 + dNH_3 + eH_2S + CH_4$$

This degradation scheme serves to show that under anaerobic conditions, ammonia, carbon dioxide and methane are produced, all detectable at the landfill. Further reactions proceed including:

- Carbonic acid formation: CO₂ + H₂O = H₂CO₃· = H* + HCO₃·
- Metal sulfide precipitation: H₂S = 2H+ + S= = (Metal)S (solid)

These reactions result in the overall addition of the following analytes to landfill leachate and groundwater:

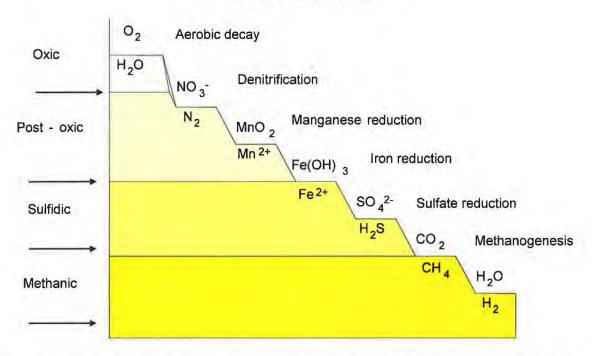
- Soluble species = residual carbon (DOC), bicarbonate, ammonium, and some sulfide
- Gaseous species = methane, carbon dioxide, and ammonia

This overall reaction scheme is similar to the individual reaction examples listed below which occur as oxygen is consumed in an organic rich environment such as the peat and landfill waste. The reactions that occur as redox becomes more negative are illustrated below.

Reducing Stage: from oxidizing to more reducing	Chemical Reactions
Aerobic Respiration	$CH_2O + O_2 \rightarrow CO_2 + H_2O$
Denitrification	$5CH_2O + 4NO_3^- + 4H^+ \rightarrow 5CO_2 + 2N_2 + 7H_2O$
Manganic Reduction	$CH_2O + 2MnO_2 + 4H^+ \rightarrow CO_2 + 2Mn^{2+} + 3H_2O$
Ferric Reduction	$CH_2O + 4Fe(OH)_3 + 8H^+ \rightarrow CO_2 + 4Fe^{2+} + 11H_2O$
Sulphatic Reduction	$2CH_2O + SO_4^{2-} + H^+ \rightarrow 2CO_2 + HS^- + 2H_2O$

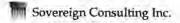
Based on the landfill geochemistry the redox ladder presented below illustrates where the landfill and underlying groundwater are presently poised and the order with which reactions have occurred.

The Redox ladder



Based on these basic principles and comparing them to the chemistry observed at the site, several observations regarding redox species in the landfill and north of the landfill are presented below:

- The landfill is highly reducing and methanagenic. Methane production is widespread in the landfill. Ammonia is present throughout groundwater sampled from the landfill wells and to the north indicating the influence of the landfill and the strongly reducing conditions. Ammonia and alkalinity are good indicators of the extent of landfill-reducing conditions throughout the area.
- The transects show elevated DOC (Figure 26 through Figure 28) that does not necessarily parallel the other redox sensitive species. This may be due to the microbial conversion of groundwater carbon to other species such as methane or carbon dioxide. The DOC may also act as an on-going source of reducing conditions. This is addressed in the next Section 6.3.3. Both transect and profile data for the various wells show elevated bicarbonate concentrations due to carbon dioxide production. These concentrations are highest in the center of the landfill and lower on the perimeter of the landfill.
- Bicarbonate is a good indicator of landfill influence and extent of intrusion into local
 groundwater. As explained earlier and in the redox diagrams, anaerobic biodegradation
 produces carbon dioxide which in turn dissolves in water and forms bicarbonate (and
 carbonate if pH is high enough). The high bicarbonate water produced from the landfill
 waste (and peat) intrudes upon native groundwater and changes the water quality from
 calcium chloride type water to calcium-iron-bicarbonate type water. This process is



described in a series of figures (Figures 34 to Figure 40) that show groundwater quality changes from the south of the landfill to the north of the landfill, discussed below.

To illustrate the use of bicarbonate as an indicator of landfill influence, the changes in bicarbonate concentrations are shown along a group of wells within the landfill and outside of the landfill. The well locations start in the south landfill at SHM-10-11 then to SHM-10-12 to SHM-10-13 with a cluster of wells in the center at SHM-10-15 and SHM-10-14 then north out of the landfill to SHM-10-16 and further north to SHM-10-04 across the Brook (Figures 34 to Figure 40). In Figure 35, the cation and anion balance is shown for SHM-10-11 that is illustrative of a partially landfill impacted groundwater. (i.e., shows chemical characteristics of landfill leachate such as elevated bicarbonate). At this location bicarbonate is the dominant anion (due to carbon dioxide production during carbon degradation) but measurable amounts of both chloride and sulfate are still found. This may be compared to groundwater sampled from SHM-10-04 (Figure 34) which is north of the landfill and across the Brook and wetlands and is thought to represent local, non-landfill (or peat) impacted groundwater. As noted anion chemistry in this well is nearly equally distributed among bicarbonate, sulfate and chloride. Thus the landfill/peat will enrich local groundwater in bicarbonate compared to other anions.

The bicarbonate enrichment expected from landfill carbon degradation processes is seen in the wells in the center of the landfill for SHM-10-12, SHM-10-13, SHM-10-14, and SHM-10-15 (Figure 36 through Figure 39). In these wells, bicarbonate is clearly the dominant anion with only small amounts of chloride and no detectable sulfate (due to sulfate reduction). This anion distribution is characteristic of the landfill influence. Moving north to SHM-10-16 outside of the landfill (Figure 40), bicarbonate still dominates, but chloride has increased and small amounts of sulfate are also noted, indicating some mixing with other groundwater or surface water recharge.

6.3.3 Summary of Arsenic Fate and Transport in Landfill and North Impact Area from Transect Analysis

This section summarizes the data collected for the north impacted area.

6.3.3.1 Fate of Arsenic and Carbon in Landfill and North Area

The geochemical analysis of groundwater profile and transect data are summarized as follows:

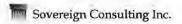
- Arsenic concentrations are found to be highest beneath the area roughly defined by N-5, SHL-99-29X, SHM-10-12, SHM-10-14 and SHM-10-15. Observed arsenic concentrations range from 1,000-ug/L to about 17,000-ug/L.
- Sampling of groundwater from monitoring wells to the north of the landfill including SHM-10-16, SHM,-10-17, SHM-10-18 and SHM-10-10 reveal that arsenic concentrations are diminished compared to the landfill concentrations. Arsenic in the wells ranges from <5ug/L (SHM-10-10) to about 1,900-ug/L (SHM-10-17) indicating a gradual but identifiable decrease in arsenic with distance from the landfill.

- Monitoring well water chemistry from the east side of the landfill also shows that arsenic decreases in this direction. Wells SHM-10-06A and SHM-10-07 on the east side of the landfill have arsenic ranging from <200 ug/L to about 1,400 ug/L.
- The transect analysis illustrates that the arsenic concentrations usually increase with depth from the groundwater surface. There is, however, a noticeable and measureable change in arsenic and dissolved oxygen just above the till and bedrock surface. Here dissolved oxygen is high (up to 9 mg/L DO) and arsenic <300 to 400 ug/L.
- These transects clearly delineate the extent of arsenic with depth, within the landfill and to the north at the Brook/wetlands.
- The other redox sensitive analytes, iron and manganese, and the carbon degradation related analytes (especially bicarbonate) also define the extent to which degradation of landfill waste and peat have impacted native groundwater. Aside from manganese and possibly dissolved organic carbon (DOC), the redox species generally mirror the distribution of arsenic.
- The resulting picture from the transect analysis demonstrates that landfill waste and peat degradation have caused reducing conditions which in turn have mobilized arsenic through reduction of iron (III) solids and subsequent release of arsenic. The main area of arsenic mobilization is directly below the landfill in the area where the former wetlands were found underlain with peat. The organic carbon degradation here has resulted in a predictable series of redox changes identified through methane, carbon dioxide and ammonia production. These analytes are found throughout the flow paths examined. These analytes are found in diminishing concentrations as the north end of the site is encountered at the Brook and wetlands presumably due to intrusion of clean non-landfill impacted groundwater and groundwater recharge.

6.3.3.2 Summary of Redox Boundary Data in North Area

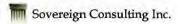
In this document, the term "redox boundary" is used to define significant and measureable changes in groundwater geochemistry that occur at the edges of the landfill impacted groundwater. These changes may occur for several reasons:

- Flow of landfill-impacted water that intrudes into non-impacted groundwater downgradient of the landfill (i.e. the downgradient extent of the impacted groundwater migration)
- Mixing of landfill-impacted water with non-impacted water beneath the Brook and wetlands, and
- Dilution of landfill impacted water by infiltrating non-impacted water along the sides of the plume outside of the landfill footprint where infiltrating meteoric water is not restricted due to capping.



The redox boundary has been roughly defined by Transects C-C', D-D', E-E', and F-F'. The extent and significance of the redox boundary can be described as follows:

- The general elevation of the northern most wells indicates that the bedrock surface is about 20 ft higher on the north side of the wetlands (at the location of the wells) and Brook than the southern side which indicates that groundwater flow is likely in the opposite direction to flow from the landfill. This provides a redox boundary due to the generally better water quality from the north compared to that emanating from the landfill.
- The bedrock contours also show that on the north side of the Brook, bedrock slopes downward to the Brook, and to the west. In addition there is another structural trough on the north side of the Brook where water would also enter in the opposite direction to the flow from the south side of the Brook. This counter flow should also create an effective redox boundary.
- The groundwater on the north side of the brook that is intruding, diluting or mixing into the landfill impacted water on the south side of the brook contains on average 40 mg/L of sodium. The wells in the landfill contain on average 15 mg/L of sodium. This is due to the intrusion of the iron-bicarbonate water created from the landfill carbon degradation process and subsequent replacement of calcium and sodium in the native groundwater. The wells at the north end of the impacted area at the south side of the Brook and wetlands contain on average 15 mg/L of sodium. This indicates that mixing of water from the north side of the Brook which is high in sodium is occurring. Using a simple mixing model, approximately 50% mixing between the two waters has occurred. This same analysis can be done with calcium, bicarbonate, sulfate or chloride with similar results. Some analyses suggest up to 75% mixing with water from the north.
- The subsequent mixing with this water diminishes arsenic to low levels. Mixing also results in redox changes that will oxidize iron (II) to iron (III) with subsequent adsorption of soluble arsenic. This redox boundary has been clearly delineated to the west of SHM-10-17 near DEP-08-03 and to the north at SHM-10-18. To the west SHM-10-19 and SHM-10-10 show marked decreases in Eh, DO, iron and arsenic and to the north SHM-10-18 shows only 17% (300 ug/L) of the arsenic encountered at SHM-10-17 (1,800 ug/L). This reduction is consistent with the change in sodium, chloride and other general chemistry parameters found at SHM-10-18 or SHM-10-10 which indicate mixing with non-impacted water. To the east, the redox boundary was not as clearly defined since access was not obtained for several key locations. However, based on earlier DPT work to the east, the extent of landfill intrusion into the Brook/wetlands may not occur past SHX-01-14X.
- Due to the observed geochemical changes in some parts of the north end, arsenic exceeding 400-ug/L will likely not enter the wetlands/Brook underflow. Since rapid oxidation is expected in the wetlands, detectable arsenic entering the base-flow is unlikely.
- Since the data was collected at the lowest flow stage of the wetlands and Brook it is
 expected that during other flow stages the impact from the landfill will be even less as the
 percentage of mixing and oxidation will increase as peak flows are approached.
- The redox boundary can be better identified using a groundwater monitoring network established from the well water chemistry completed in this SAR. Wells placed to the



north of the landfill, to the west along the brook and east along the brook can, over time allow changes in arsenic geochemistry to be observed along the groundwater flow path in this area of the site which can be used to refine the redox boundary observations

- The existing data support the conceptual model of arsenic laden groundwater migrating along and above the bedrock surface at depth through the documented bedrock topographic trough that proceeds north from the landfill and turns westward along Nonacoicus Brook. Based on the depth of impacts and as depicted on the Transects, arsenic laden groundwater does not appear to discharge to the brook or wetlands as the arsenic impacts are located deeper than the brook and wetlands.
 - 6.3.4 Column Results and Modeling of Monitoring Natural Attenuation

6.3.4.1 Column Results

The first column study was designed to address the question of how long would it take for the landfill aquifer to recover to pre-landfill conditions if un-impacted oxidized water were to enter and flush the arsenic and carbon out of the column pore water.

The data for the initial column flushing study is presented in Prima Environmental: Report of Findings, Shepley's Hill Landfill 2011 (Attachment I). As noted from the data the column is washed free of arsenic (to less than 5 ug/L) in 8 to 9 pore volumes in one column and 13 pore volumes in the column duplicate (Figure 41). Figure 42 and Figure 43, show that while arsenic diminished rapidly, the column is still maintaining reducing conditions (Eh < -25 mv) and carbon is still elevated at 3 mg/L.

Using the initial arsenic flushing rate from this study an estimate of the time it takes for the aquifer to be flushed free of arsenic can be made. Since the groundwater velocity ranged from approximately 0.5 to 1 ft/day and the migration of 1 pore volume of groundwater through the landfill would take approximately 13.5 years, then 13 pore volumes represents about 176 years of flushing and roughly 269 years to the brook at an initial arsenic concentration of 1,200 ug/L.

The above example can be considered a best case scenario since the column effluent was still reducing at the end of the study, containing roughly half the dissolved organic carbon (about 3 mg/L) indicating reducing conditions will persist beyond the initial flushing of the pore water entrained arsenic.

In a second column study a different scenario was tested. The details included:

- Flushing of a section of core containing high solid phase arsenic (35 mg/kg) with oxidized water to remove all pore water arsenic (initial concentration 1,450 ug/L).
- Once the core was flushed free of soluble arsenic, introduce reduced water and flush at a slow rate (1 pore volume per 4 days or less than 0.5 ft/day)
- Examine effluent to determine how fast arsenic is re-released from the remaining solid phase pool (presumably HFO and other solids)

This test is especially relevant since several proposed remedial strategies focus on removing arsenic from groundwater while allowing reducing conditions to persist. Therefore the test simulates the potential for re-release of arsenic from aquifer solids downgradient either from the ATP or a reactive barrier. Under both situations arsenic will be removed allowing for the pore water arsenic to decrease, but reducing conditions will still prevail.

The results from the study are summarized as follows:

- Influent water: Bicarbonate alkalinity = 210 mg/L, Arsenic (total dissolved) < 5 ug/L, Calcium = 92 mg/L, Cl = 12 mg/L, DOC = 62 mg/L, Mg = 9 mg,L, K = 42 mg/L, Fe (II) < 0.01 mg/L, Na = 75 mg/L, DO = 2 mg/L, pH = 6.8.
- Arsenic in column 1 (experiment was duplicated) began at <5 ug/L. After 12 pore volumes arsenic in the column 1 effluent was 210 ug/L. In column 2, arsenic was 190 ug/L after 9 pore volumes (See Figure 1).
- The arsenic in the effluent in both columns was low (<70 ug/L) through the first 9 pore volumes extracted at a rate of 0.5 ft/day.
- At pore volumes 10 and 11, arsenic began to increase presumably due to dissolution of HFO in the sands.
- The slow dissolution pattern suggest that HFO dissolution and arsenic release is initially
 rate limited and will take time before significant amounts of arsenic are released to
 solution. After 15 weeks arsenic appeared to level off between 300 and 400 ug/L.

6.3.4.2 Geochemical Modeling and Mixing

The data from the above flushing exercise was modeled with PHREEQC2 which is a US Geological Survey computer code that can be used for modeling column data and other water quality exercises. The model parameters were used to address the time of flushing for the center of the landfill where arsenic concentrations approach 15,000-ug/L. The results are shown also in **Figure 44**. As noted, arsenic rapidly diminishes in the first few pore volumes and then diminishes to about 200-ug/L at 12 to 14 pore volumes. Thus flushing the center of the plume may take approximately 50 to 100 years longer than found in the moderate arsenic column flushing data.

Another geochemical exercise was conducted. The purpose of this exercise was to determine (1) the primary solid phase controlling arsenic solubility, and (2) determine the distribution coefficient of arsenic per a site specific analysis. These are needed to understand what the primary source of arsenic is in groundwater and what concentrations can be expected in groundwater based on the presence of the source. In the first case, it is assumed that iron solids control arsenic solubility by adsorption of arsenic onto the surface of amorphous hydrous ferric oxide (HFO) or ferrihydrite. This assumption has been based on previous site work and literature that demonstrates the control that HFO has on arsenic solubility and mobilization under reducing conditions. While this control on arsenic solubility is probable in the Shepley's Hill Landfill, there may also be other controls on arsenic solubility such as oxidation of arsenopyrite in bedrock and till and dissolution of pyrites or sulfides containing arsenic. Recent

mineralogical investigation of some of the core samples has been examined by RJ Lee Group (Attachment L, Mineralogy and SEM Results). It was noted that in-situ formed framboidal pyrites were prevalent in many of the samples even in some of the waste. Thus there is at least some evidence that other iron minerals may be present. Due to this, if all solid phase iron and arsenic concentrations in the soil/aquifer solids from the borings is examined by plotting Fe versus As there should be considerable variability as noted in Figure 45. This suggests that iron solids (as HFO) contain different amounts of arsenic and/or there are several sinks for iron which can alter the arsenic to iron ratio expected from arsenic in HFO alone.

Since water samples were collected every 10 ft, it was possible to assign an aqueous arsenic value at the same depth where the solid arsenic content was measured in all the boring samples. By plotting the aqueous phase arsenic against the solid phase it would be possible to define a site specific distribution coefficient or Kd for arsenic. Since Kd:

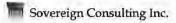
Arsenic (solid) = Kd * Arsenic (solution)

Kd = Arsenic (solid phase)/Arsenic (solution phase) - liters/kilogram

This exercise was carried out and plotted in Figure 46. The plot is generally linear with a Kd (slope) of 7.62 and an R squared of 0.76. Since the plot is generally linear and the parameters well correlated a site specific Kd of 7.62 can be used in subsequent geochemical analyses. Care should be exercised in the use of the Kd since the correlation is dominated the cluster of samples at the low end of the plot. This site specific Kd, which covers a large range of concentrations, may also be in fact a series of 2 or more slightly different plots or lines representing different mechanisms of arsenic retention.

6.4 Reducing Conditions in Landfill

One of the most difficult processes to quantify at the landfill is the source strength. Source strength is defined as the mass of potentially reactive arsenic emanating from the landfill or the aquifer minerals or both. Landfills are notoriously difficult to characterize due to severe variability in types of material disposed and irregular placement of refuse. In the case of Shepley's Hill Landfill, this is made more difficult due to the relatively new cap placed over the landfill. The cap alters the original delivery of arsenic and carbon to the underlying groundwater by cutting off the infiltration of meteoric water and results in a new or different distribution of arsenic and carbon in the groundwater. Due to these complications it is not likely that the landfill can be characterized vertically and aerially with any degree of confidence. As such, the borings completed in the landfill were advanced in several distinct locations based on previous site investigations that would yield important information about the potential arsenic contents within the landfill and also the carbon distribution at key locations within the landfill. Waste characteristics within the landfill borings is described first followed by a discussion of the carbon as a source of reducing conditions.



6.4.1 Waste Distribution and Characterization

Waste was encountered in all of the borings advanced in the landfill, with the exception of SHM-10-13. Here a layer of ash and sand from approximately 6 feet to 10 feet below grade and again at approximately 22 to 24 feet (mixed with sand) below grade was encountered overlying a large thick section of peat. **Table 7** summarizes the occurrence of waste and the type of waste and the major trace element analyses encountered.

The table illustrates that the waste metal content is highly variable but with the exception of a few samples not necessarily enriched in metals with respect to normal soil background ranges (see yellow highlighted values which represent enriched samples). The shaded values represent enrichment with respect to normal soil ranges. As noted, lead appears to be enriched most commonly in the waste samples, a not unexpected result given the composition of municipal waste. Arsenic in the waste varies from 0.8 to 60 mg/kg with the highest contents found in a single ash sample and in peat. The distribution of important trace elements in the waste and underlying sands are shown (and discussed) in the following soil boring profiles.

Figure 47 displays the trace metal content of the SHM-10-11 landfill boring strata. Several important observations can be derived. First, there are 4 distinct zones in the profile. The first zone is a layer of waste of mainly paper, plastic, and some metal scraps that occurs to about 12 ft bgs. This zone is elevated in lead, zinc, and copper. The second zone occurs below the first and also includes paper waste but wood fragments as well (13-23 feet). The waste in this zone is mainly chromium, copper and zinc enriched and at levels lower than the first zone. The third zone (24 to 60 feet) is the underlying aquifer sand that has very low (less than 20 mg/kg) metal contents. Finally, at the bottom of the boring (> 60-feet) glacial till and weathered bedrock is encountered from 55 to 70 ft. Here chromium, zinc, nickel and lead increase again due to the native mineralization of the bedrock and till in the area.

Another observation from the profile is the sharp break in concentration of metals from the waste layers to the underlying sands. There is no gradual decrease in metals with depth suggesting that enrichment of the underlying solids from waste leaching has not occurred. As noted previously this is similar to the distribution of arsenic and metals at the Winthrop landfill where waste is not considered a source of arsenic or metals to underlying groundwater (Keimowitz et al. 2005).

Figure 48 shows the same trend for boring SHM-10-12. A simpler trend is observed in this profile, with only the upper waste enriched in lead, copper and zinc (10-feet) and lower strata (10 to 60 feet) showing no significant variation in trace metal content. Again the sharp break in concentration is observed.

Figure 49 shows the profile for SHM-10-13. This profile also has 4 distinct zones. Waste occurs to approximately 25 to 30 feet bgs which is elevated in lead, chromium, and copper. Below this waste, sand is encountered with no obvious elevated metals, and just underlying the first sand zone is another sand layer with elevated nickel, chromium, and copper (40-45 feet). The reason for the elevated metals in this part of the profile is not fully known. Sands

occurring from 50 to 70 ft are relatively low in metals concentrations (<20 mg/kg) until till is encountered and metals (lead, copper, and arsenic) increase as noted earlier.

Figure 50 is the metal profile for SHM-10-14. This profile shows a waste zone occurring to about 25 feet bgs followed by a thin clean sand layer and then a 14 ft thick layer of peat. The waste contains some lead and zinc while the peat is slightly elevated in arsenic and zinc. Below the peat layer is low metal containing sand from 44 to 60 ft bgs. At 60 ft till and weathered bedrock are encountered which explains the increase in arsenic and zinc from 70 to 83 ft.

Figure 51 is the final profile for landfill boring SHM-10-15. The profile shows elevated lead, zinc, and copper in the waste layer (5-25 feet) and as observed in the other borings, relatively clean sand followed by increases in metals at the till/bedrock interface.

Figure 52 and Figure 54 display the carbon and arsenic contents of the aquifer solids from three of the landfill borings. Initial analysis of the data suggests little correlation between TOC and arsenic. Unlike arsenic distribution, TOC outlines the waste and peat profiles very well and the decreases, presumably to background with depth. In all cases TOC decreases rapidly below the waste and or peat layer.

A summary of the waste characteristics and depth profiling shows that:

- Most trace metals are confined to the upper part of the profile defined by the landfill
 waste boundary. No enrichment of underlying sands has been found indicating leaching
 has not resulted in measurable changes to the solid phase metal content in the aquifer.
- Most of the waste is enriched in metals typically found in municipal landfill: lead, copper, zinc, chromium, and nickel.
- Arsenic in waste samples was found to be 31 mg/kg. Only in the peat underlying SHM-10-14 did arsenic reach levels approaching 60 mg/kg.
- Two borings appeared to have waste and or peat in contact with groundwater. These were borings SHM-10-14 and SHM-10-15.
- The effect of the cap will likely have a great effect on preventing possible migration of metals from the waste into groundwater. Future analysis of wells should reveal marked declines in any soluble metals such as nickel and zinc.

6.4.2 Landfill and Peat / Wetlands as Arsenic and Carbon Source

This section discusses the relative importance of the landfill waste and peat as sources of arsenic and carbon.

6.4.2.1 Geochemical Analysis: Arsenic Source

Additional calculations were made using the arsenic contents from the waste and underlying sands to determine the relative importance of waste or aquifer sands as a source of arsenic to groundwater. This was attempted by calculating the relative mass of arsenic in waste and the mass of arsenic in aquifer sands. The results are summarized as follows:

Material	Average As Content (mg/kg)	Depth of Material (ft)	Arsenic Inventory in Landfill Due to Waste or Sand (kg) assumes 90 acre landfill and Bulk Density of 1.6
Waste	10.9	23.2	27,598 kg
Sand	14.2	35.6	68,710 kg

The table shows that the aquifer sands had a slightly higher average arsenic content compared to waste (14.2 mg/kg compared to 10.9 mg/kg). The depth of waste versus aquifer sands was obtained from the boring logs and collection of samples from each stratum at borings SHM-10-11, SHM-10-12, SHM-10 SHM-10-13, SHM-10-14, and SHM-10-15. While the waste was considered to be 23 ft deep on average, most of the waste was bisected by sand layers or daily cover. A correction of 4 ft of sand cover per 20 ft of waste was made. The calculations indicate that the aquifer sand contains about 2.5x the amount of arsenic as the waste, confirming the significance of this (aquifer sand) source to the overall groundwater quality.

The data show on a mass basis there is more arsenic inventory in the underlying aquifer sands than in the waste. Hence as an on-going source of arsenic, the aquifer sand is a more important source. On a mass basis the waste contains about 27,600 kg of arsenic compared to 68,800 kg in the aquifer sand. If the amount of saturated waste is further taken into account, only 7,000 kg of arsenic in the waste is possibly in contact with groundwater. It is not known with certainty how much if any waste based arsenic has leached into the groundwater, this calculation simply describes the condition of the landfill as it now occurs. Capping and pumping have likely altered the distribution of arsenic from the previous uncapped condition.

Early reports by Harding ESE, AMEC and Gannett Fleming and more recently by Sovereign have revealed: (1) the primary source of arsenic now mobilized in groundwater originates from the aquifer sands. Other sources such as landfill waste and bedrock may contribute to dissolved arsenic but are not the primary source. Aquifer sands are rich in hydrous ferric oxide (HFO) which hosts surface adsorbed arsenic; (2) arsenic solubility is controlled by reducing conditions imposed by both landfill waste and pre-existing peat deposits within the wetlands over which waste was emplaced; (3) reducing (and anaerobic) conditions force reduction of Fe (III) to Fe (II) resulting in dissolution of HFO and concurrent release of sorbed arsenic; (4) This process has resulted in arsenic concentrations in groundwater that range up to 16,000 ug/L. The importance of HFO in controlling arsenic solubility is a widely accepted process and has been demonstrated to occur at other landfills.



Another evaluation of the waste and aquifer sand is presented. Reported here are the results of the Sequential Extraction which have been used to determine how much arsenic could be potentially released and leached into groundwater from the different potential source samples. The Table below describes the results received to date.

Sample ID		Arsenic in Sample (Total) (mg/kg)	Arsenic in Phosphate Extract (mg/L)	Potential Leachable Arsenic (ug/L)
SHM-10-12	Waste at 5-ft	12	0.14	140
	Sand at 42-ft	29	0.39	390
700-	Sand at 65-ft	34	0.48	480
SHM-10-13	Waste at 23-ft	31	0.51	510
	Sand at 83-ft	23	0.39	390
SHM-10-14	Waste at 10-ft	18	0.28	280
	Waste at 15-ft	12	0.08	8
	Waste at 20-ft	18	0.21	21
	Waste at 27-ft	3.8	< 0.052	< 52
	Sand at 70-ft	35	0.55	550
	Sand at 75-ft	51	1.24	1,240
SHM-10-15	Waste at 18-ft	25	0.083	83
Method Blank	k	NA	< 0.052	< 52

Preliminary analysis reveals that waste samples potentially could leach from <53 ug/L arsenic to 510 ug/L arsenic. The underlying aquifer sands by comparison could leach up to 1,240 ug/L. This leachable quantity is not however an indication of the amount of arsenic that could be released in the sand samples by reducing conditions. For example if all of the arsenic entrained in the iron solids on the sand grains was released, then concentrations of 30,000-ug/L or higher could be found in solution (i.e., 15-mg As/g sand dissolving into 0.5-mL of pore water). This range of concentration has been reported in SHM-10-14. This simple analysis suggests again that the waste, like the bedrock, is not the most significant source of arsenic to the underlying groundwater under reducing conditions. The sands rich in surface precipitated iron and arsenic are the main source of arsenic. The cap will prevent further migration of potentially soluble arsenic from the landfill waste to the underlying soils in most locations.

6.4.2.2 Landfill and Peat / Wetlands as Carbon Source

For evaluating reducing conditions or carbon source strength, a well by well comparison was completed in order to assess the relative contributions of landfill waste to peat as a source of reducing conditions. From the previous discussion, reducing conditions evolve from a set of geochemical reactions that begin when carbon degradation utilizes, then expends all available oxygen. At this point other oxygen sources such as nitrate and sulfate are utilized that further drive the redox potential down (more negative). Once these are expended, anaerobic metabolism proceeds and carbon dioxide, methane and ammonia are produced. A simple way to assess the relative "reducing strength" of the landfill waste and peat is to examine the total carbon produced by the geochemical conditions within the landfill waste or peat. To do this the following protocol was used:

- The landfill borings recently completed were segregated by whether waste or peat or both were encountered in the borings. This led to the following classes:
 - SHM-10-13 contains almost exclusively peat, with only a trace of ash well above the water table. No other organic waste was found in the boring;
 - o SHM-10-14 contains peat and waste;
 - o SHM-10-15 and SHM-10-12 contain waste but no peat.
- The carbon balance encountered in the well water at each of these locations was examined to determine which location contributed more carbon to the system.
- The analysis provides a limited but useful comparison of peat vs. waste vs. peat plus waste as far as carbon and reducing conditions are concerned.

The analysis yielded the following results:

Location	DIC (mg/l)	DOC (mg/l)	Total Carbon Input (DIC + DOC)
SHM-10-11 (waste)	62	3.3	65.5
SHM-10-12 (ash/waste)	110	4.1	114,1
SHM-10-13 (peat)	140	5.6	145.6
SHM-10-14 (peat/waste)	120	8.7	128.7
SHM-10-15 (waste)	82	4	86

The results show that the two wells drilled into the peat, SHM-10-13 and SHM-10-14 have the greatest carbon input of 129 and 146 mg/L, respectively. The two wells drilled into waste only, SHM-10-15 and SHM-10-11 have the lowest carbon input of 65.5 and 86 mg/L, respectively. The boring through the ash layer is intermediate with 114 mg/L of total carbon.

This limited analysis suggests that the peat layer, with or without waste above it supplies more carbon input to the groundwater than ash or waste alone by almost a factor of two. This also suggests that the peat layer and associated wetlands have been acting as a carbon source long before the landfill existed. This carbon source resulted from and contributes to locally reducing conditions that would have mobilized arsenic long before the existence of the landfill. landfill impact to reducing conditions has no doubt decreased through time due in part to exhaustion of easily degradable carbon sources and to the placement off the cap on the landfill. Thus this analysis can only be valid for the present time. The exercise conducted above is substantiated by the scientific literature. The emplacement of landfill waste clearly has created its own carbon metabolism, degradation and anaerobic reducing conditions. Municipal landfills are known to behave in this manner and there is no dispute that the landfill comes with its own set of impacts to underlying groundwater. SHL is considered an older landfill (>20 years). By literature standards (El Fadel et al., 2001) leachate from these landfills have lower COD (<1,000 mg/L), BOD (<50 mg/L), ammonia (<30 mg/L), TDS (<1,000 mg/L) and other constituents compared to newer landfills. SHL groundwater falls within these ranges even with dilution considered. Since SHL has been capped, most of the waste (89 %) is no longer in contact with



groundwater. Over time, the landfill's role in maintaining reducing conditions will diminish and cease.

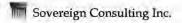
The wetlands and peat appear, from historic USGS maps, to encompass about 70% of the northern half of the landfill and possibly half of the southern part of the landfill. These wetland areas formed shortly after or during the retreat of glaciers during the last Ice Age and typically date 13,000 yrs before present (BP). Formation of wetlands, and underlying peat, results in a number of important biogeochemical changes (Mitsch and Gosselink, 2007):

- Inundation of water into the surface soils in the wetlands results in anaerobic conditions.
 Low diffusion rates of oxygen under saturated conditions will result in anaerobic conditions typically within 12 weeks.
- Lack of oxygen leads to nitrate reduction, then iron reduction and sulfate reduction, and finally methanogenesis.

These biogeochemical changes will result in production of soluble iron as Fe (II), hydrogen sulfide which can off-gas and/or precipitate as a metal sulfide, production of ammonia and methane. Measured methane rates (Mitsch and Wu, 1995) have been found to range from 0.1 to 500 mg C $\rm m^{-2}$ d⁻¹. Global carbon emission rates from methane from peat are 150 mg C $\rm m^{-2}$ d⁻¹ (Matthews and Fung, 1987).

Literature reviews and textbooks on wetlands and peat make it abundantly clear that the formation and maintenance of wetland and peat always result in anaerobic conditions and resulting biogeochemical conditions that will mobilize arsenic as explained in the SAR. To illustrate this we point to a paper (Ravenscroft et al., 2001) in which peat occurs extensively beneath arsenic affected areas of southwestern Bangladesh. The peat is thought to be Holocene aged, about 5,000 yr BP. In wells where peat was not encountered arsenic levels rarely exceeded 100 ug/L. In wells drilled through peat deposits, arsenic concentrations increased to over 1,000 ug/L. It is important to note that peat was encountered at various depths up to 60 meters below ground surface. The findings can be summarized as follows: The concentration of arsenic was not exceptional in much of the study area and the occurrence of reducing conditions was not enough to explain the degree and extent of arsenic pollution. High arsenic levels were attributed to biodegradation of buried peat deposits which drives the reductive dissolution of FeOOH supplying high amounts of arsenic to groundwater. The correlation of peat deposits to high arsenic has also been noted by others (Smedley and Kinniburg, 2002). Arsenic mobilization by peat is also described by Bauer et al., (2008), Rothwell et al., (2008), in wetlands by Kalbitz and Wennrich (1997) and in an urban pond by Durant et al. (2004). The importance of peat and wetlands in mobilizing arsenic due to carbon and reducing conditions is well established.

The fact that wetlands and peat underlie a significant portion of the landfill can only mean that additional sources of carbon and arsenic were introduced to an already dynamic anaerobic system via the landfill emplacement. Estimates of dissolved carbon from either landfill or wetland sources as noted in the SAR suggests that peat and wetlands have increased total carbon by 50 to 75% of that delivered by the landfill suggesting that removal of the landfill would only reduce the carbon input by 25 to 50%. Thus the peat and wetland areas are a major



source of carbon and reducing conditions. With the landfill aging, the peat and buried wetlands will continue to act as a carbon source and hence maintain reducing conditions into the future. Additional information on the role of peat as a carbon source and its use as an analogue for the long-term behavior of landfills can be found in a review paper by Bozkurt et al., (2001).

6.4.2.3 Bench Scale / Column Testing

As noted previously freezing of the soils may have negatively impacted the microbial populations and prevented degradation from occurring to a measurable degree. This study has, unfortunately, been discontinued.

6.4.3 Duration of Reducing Conditions

To date only estimates of the life cycle of reducing conditions can be made. Carbon will persist in the aquifer due to 3 types of carbon processes. The first is the degradation rate of the peat or waste alone. Coupled with this is the fact that the cap may provide a barrier to water infiltration effectively ending the delivery of carbon from much of the waste. This seems to be true in the southern half of the landfill where the waste is 10 to 15 feet above the water table such as at SHM-10-11 and SHM-10-12. At SHM-10-14 and SHM-10-15 peat and some waste are still in contact with groundwater. The release rates of carbon are being studied in the laboratory (results pending).

The second carbon source is the persistent TOC measured in the aquifer sand solid phase that likely migrated geologically from the peat into the underlying sand. Concentrations up to 4% TOC have been found in the center of the landfill around borings SHM-10-13, SHM-10-14 and SHM-10-15 at depth of 45 ft or more, although 0.1 to 0.5% TOC are more common. This carbon will slowly biodegrade (via an anaerobic pathway) and maintain reducing conditions.

The last type of carbon to consider is the dissolved organic carbon (DOC) that is still persistent in all the wells measured even into the wells at the edge of the Brook/wetlands. This carbon will also degrade to further maintain reducing conditions and/or flush out over time.

The literature has some anaerobic biodegradation rates, mostly from laboratory studies. For example degradation of waste and peat can vary from 0.01 mg d^{-1} to 1 mg d^{-1} . Assuming the lowest value has some meaning for the present case, 5% of the carbon in the peat will degrade in roughly 13,000 years (or 1,300 years at 0.1mg/d^{-1}).

Column studies completed to date that describe arsenic flushing also have tracked carbon flushing. The results of carbon flushing from the column study through 13 pore volumes show a 59% reduction in carbon with a long apparent tail associated with the removal. The 13 pore volumes are equivalent to removing carbon from an initial concentration of 6.3 mg/L to 2.6 mg/L. Keimowitz et al. (2005) found a similar slow removal of carbon from the landfill due to sorption of carbon to the mineral phase in the aquifer sediment. Using a distribution coefficient model they estimated that carbon flushing would require at least twice as much time to diminish as arsenic which would allow for continued release of arsenic from HFO. As applied to Shepley's Hill this suggests that up to 500 years would be required to remove carbon from



the landfill groundwater. Recall, however, that unlike Winthrop, Shepley's Hill has a thick layer of peat and underlying wetlands that will continue to deliver carbon to groundwater.

7.0 Bench Scale PRB Zero Valent Iron Test

Bench testing of zero valent iron for arsenic removal at the site is discussed below.

7.1 Purpose

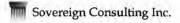
The potential use of a permeable reactive barrier (PRB) composed of zero-valent iron (ZVI) for in-situ arsenic removal at the Shepley's Hill Landfill has generated considerable interest due to the relatively low cost and potential high efficiency of the method. A similar system has been explored and published for a former municipal landfill in Maine, published by Nicolaidis et al. 2003 Water Research. In that study, reduced water (Eh <-50 mv) high in dissolved arsenic (550 ug/L) and iron (8 mg/L) was effectively treated to <1 ug/L with retention times as low as 10 minutes. While the sites are similar, the Shepley's Hill Landfill has higher dissolved arsenic (4 mg/L) and iron (60 mg/L) and some different geochemical properties. Thus a lab bench test was performed to confirm the viability of the use of ZVI as part of a PRB at this site. The specific goals of the test were to:

- Test removal capacity of ZVI on unamended site groundwater
- Compare the removal efficiency of two types of ZVI Aggregates: ETI CC-1004 and CC-1200, both manufactured by Connelly-GPM, Inc.

7.2 Methods and Materials

Testing included flow of site groundwater through columns prepared with Iron Aggregates ETI CC-1004 and CC-1200 and silica sand. Two tests were run with different conditions. Test methods are given below.

- Column configuration 18 inches long x 2 inches diameter (clear schedule 80 PVC)
- Up flow into bed from a variable speed peristaltic pump (GeoPump 2)
- Each column was fully packed with the following:
 - o Column 1 contained 100% Iron Aggregate ETI CC-1004.
 - Column 2 contained 100% Iron ETI CC -1200 which due to the fine dust like particles led to "concrete like" mass and was not further evaluated.
 - Column 3 contained approximately 50% Iron Aggregate ETI CC-1004 by volume and 50% silica sand by volume.
 - Column 4 contained 25% Iron Aggregate CC-1200 by volume and 75% silica sand by volume.
 - Column 5 contained 100% silica sand.



- Site groundwater (SHM-10-14 and SHM-10-15) used in the column tests were collected directly into three 5-gallon carboys using a peristaltic pump while minimizing headspace in the carboys.
- Influent and effluent groundwater were analyzed for:
 - pH (by direct-read instrument YSI-556)
 - ORP (by direct-read instrument YSI-556)
 - o DO (by direct-read instrument YSI-556)
 - dissolved and total As (by USEPA Method 200.7)
 - o dissolved and total Iron (by USEPA Method 200.7)
 - o dissolved and total Mn (by USEPA Method 200.7)
 - o dissolved organic carbon (by Standard Method 5310)
 - o sulfate (by USEPA Method 375.4)
 - o alkalinity (by Standard Method 2320B)
- Laboratory analysis was conducted by Accutest Laboratories in Dayton, NJ.

Test 1

- Test 1 was run through Column 1, Column 3, and Column 5.
- Test 1 was conducted using 5 gallons groundwater of obtained from site monitoring well SHM-10-15.
- Test 1 was run for a 3.0 hour period. All columns were run simultaneously using common influent water.
- Groundwater was run through each column at approximately 30 mL/min for a retention time of approximately 9 minutes.
- Lab analytical samples were collected at t=0.25 hrs, 1.25 hrs, and 2.0 hrs. Analytical results from Test 1 are provided in Attachment J.

Test 2

- Test 2 was run through Column 1, Column 3, Column 4, and Column 5.
- Test 2 was conducted using 10 gallons of obtained from site monitoring well SHM-10-12.
- Test 2 was run for a 5.0 hour period. All columns were run simultaneously using common influent water.
- Groundwater was run through each column at approximately 30 mL/min for a retention time of approximately 9 minutes.
- Lab analytical samples were collected at t=0.5 hrs, 1.2 hrs, 2.9 hrs, and 4.3 hrs. Analytical results from Test 2 are provided in Attachment J.

7.3 Methods and Materials

7.3.1 Test 1

7.3.1.1 Field Results

Attempts to pass groundwater through a column with 100% Iron Aggregate CC-1200 and with 50% Iron Aggregate CC-1200 and 50% silica sand were unsuccessful due to excessive back pressure formed by the iron material when saturated.

Influent groundwater pH increased by approximately 0.5 SU after passing through Column 1 and Column 3. There was no change as it passed through Column 5.

Influent groundwater ORP decreased by over 60 mV after passing through Column 1 and Column 3. There was no change in the ORP as it passed through Column 5.

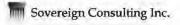
7.3.1.2 Laboratory Analytical Results

Influent water contained dissolved and total arsenic concentrations of 1,560-ug/L and 4,560-ug/L, respectively. Additionally, influent water contained dissolved and total iron concentrations of 21,700-ug/L and 47,000-ug/L, respectively. Sulfate was not detected in the influent water.

Both dissolved and total arsenic concentrations in groundwater decrease of >99.9% after passing through Column 1. Dissolved arsenic concentrations decreased an average of 99.7% and total arsenic concentrations decreased an average of 98.3% decrease after passing through Column 3. Dissolved arsenic concentrations showed an average of 4.1% and total arsenic concentrations decreased an average of 34.2% after passing through Column 5.

Dissolved Iron concentrations in groundwater decreased an average of 66.7% and total Iron concentrations decreased an average 5.6% after passing through Column 1, though dissolved and total iron increased over the course of the test. Dissolved iron concentrations in groundwater increased 134% and total iron concentrations increased an average 127% after passing through Column 3. Dissolved iron concentrations in groundwater decreased 16.1% and total iron concentrations decreased an average 28.5% after passing through Column 5.

Sulfate was present at concentrations of 87.6 mg/L, 38.3 mg/L, and 11.4 mg/L after passing through Column 1, Column 3, and Column 5, respectively.



7.3.2 Test 2

7.3.2.1 Field Results

Influent groundwater pH increased by approximately 1.0 SU after passing through Column 1, Column 3, and Column 4. There was an increase of approximately 0.2 SU as it passed through Column 5.

Influent groundwater ORP decreased by over 100 mV after passing through Column 1, Column 3, and Column 4. There was no change in the ORP as it passed through Column 5.

7.3.1.1 Laboratory Analytical Results

Influent water showed averaged dissolved and total arsenic concentrations of 708-ug/L and 2,810-ug/L, respectively. Additionally, it showed average dissolved and total iron concentrations of 53,950-ug/L and 78,600-ug/L, respectively. Sulfate was not detected in the influent water.

Both dissolved and total arsenic concentrations in groundwater decreased by 99.9% after passing through Column 1. Dissolved arsenic concentrations on average decreased 98.8% and total arsenic concentrations decreased an average of 90.9% decrease after passing through Column 3. Dissolved arsenic concentrations decreased 97.7% and total arsenic concentrations decreased an average of 92.9% after passing through Column 4. Dissolved arsenic concentrations increased 28.6% and total arsenic concentrations decreased an average of 35.0% after passing through Column 5.

Dissolved iron concentrations in groundwater increased 114% and total iron concentrations increased an average 165% after passing through Column 1. Dissolved iron concentrations in groundwater increased an average of 192% and total iron concentrations increased an average of 284% after passing through Column 3. Dissolved iron concentrations in groundwater increased an average of 162% and total iron concentrations increased an average of 135% after passing through Column 4. Dissolved iron concentrations in groundwater increased an average of 7.2% and total iron concentrations decreased an average of 10.1% after passing through Column 5.

Sulfate was present at concentrations of 16.9 mg/L and 33.6 mg/L after passing through Column 1 and Column 4, respectively. Sulfate was not detected after passing through Column 3 or Column 5.

7.4 Conclusions

Both Iron Aggregate ETI CC-1004 and CC-1200 were effective in decreasing arsenic concentrations in site groundwater through the bench scale testing. Iron Aggregate ETI CC-1004 was easier to handle during the test and may be preferable for implementation in the field.

Increases in dissolved and total iron after passing through the iron aggregate suggest that during field implementation a solids filter may be desirable for water that passes through the iron aggregate. This is supported by the decrease in total arsenic seen in both tests after passing through the column packed with silica sand only.

Changes in parameters pH, ORP, and sulfate after passing through iron-packed columns suggest that the iron aggregate is having the intended effect of creating an environment conducive to arsenic removal.

8.0 CONTAMINANT CHARACTERISTICS

This section describes and summarizes the contaminants of concern and the site specific fate and transport patterns.

8.1 Sources and Releases

The primary contaminant of concern is arsenic. The sources of arsenic have been described previously and include (1) bedrock, (2) glacial till, (3) aquifer sands overlying bedrock and underlying waste or peat, (4) landfill waste, and (5) peat. While the exact magnitudes of the various types of sources at and beneath the landfill are unknown, the relative importance of the possible sources (as they now exist) is known based on recent waste and peat characterization studies. The relative importance of the arsenic sources is as follows: aquifer sands > landfill waste = peat > bedrock = glacial till. Due to the cap place on the landfill, leachate from the landfill waste is expected to be minimal except where waste is in direct contact with the groundwater. Current estimates suggest that only 11% of the landfill waste is now in contact with groundwater. Based on recent groundwater profiling in this area, metals and arsenic entering groundwater from the waste appears to be minimal and primarily in the center of the landfill. Arsenic is released into groundwater from the sources by naturally occurring and landfill-induced reducing conditions caused by carbon degradation and oxygen depletion that lead to the anaerobic conditions. Portions of the landfill also overlay pre-existing, buried peat deposits that induced reducing conditions prior to emplacement of the landfill over the peat and associated wetlands. Therefore, the peat within the landfill footprint caused arsenic mobilization to both the North end of the site at Nonacoicus Brook and east to Red Cove prior to the placement of waste. This natural process will persist even if the landfill waste were to be removed. Recent estimates indicate that peat degradation and reducing conditions could persist far into the future

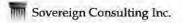
8.2 Nature and Extent of Contaminant

Potential sources of arsenic in groundwater include (1) bedrock, (2) till, (3) aquifer sand overlying bedrock and underlying waste or peat, (4) landfill waste, and (5) peat (see Section 6.4, Sovereign, 2011 for discussion of arsenic content in different materials). In terms of mass available for mobilization, the primary source of arsenic in groundwater appears to be the aquifer sand rich in amorphous iron hydroxide solids, usually coated on sand grains as documented through microscopy. While the exact magnitudes of the various types of sources at and beneath the landfill are unknown, the relative importance of the possible sources is known based on recent waste and peat characterization studies. The relative importance of the arsenic sources decreases in the order: aquifer sand > landfill waste = peat > bedrock = till. Due to the cap placed on the landfill, leachate from the landfill waste is expected to be minimized except where waste is in direct contact with the groundwater. Based on recent groundwater profiling in this area, metals and arsenic entering groundwater from the waste appears to be minimal and primarily in the center of the landfill. Arsenic is released into groundwater from the sources by naturally occurring and landfill-induced reducing conditions caused by carbon degradation and oxygen depletion that lead to anaerobic conditions. Portions of the landfill overly pre-existing, buried peat deposits that induced reducing conditions prior to emplacement of the landfill over the peat and associated wetlands. Therefore, the peat within the landfill footprint caused arsenic mobilization to the north end of the site toward Nonacoicus Brook as well as east toward Plow Shop Pond prior to the placement of waste. This natural process will persist even if the landfill waste were to be removed. Recent estimates indicate that peat degradation and reducing conditions could persist for hundreds to thousands of years.

Arsenic solubility is controlled by desorption from the iron solids and by reductive dissolution of the iron (III) solids created by biodegradation of peat and waste. The distribution coefficient of 7.6 L/kg indicates that for example, if 30 mg/kg arsenic is found in the aquifer sand then 3,947 ug/L could be found in the aquifer groundwater. The distribution coefficient is useful for predicting ranges of arsenic concentrations that could be expected in local groundwater. It is important to note that this process does not, however, include dissolution of the iron solid, a process that could lead to higher arsenic concentrations. Use of the Kd should consider that the correlation is dominated by the cluster of samples at the low end of the plot. This site specific Kd, which covers a large range of concentrations, may also be in fact a series of two or more slightly different plots or lines representing different mechanisms of arsenic retention.

Prior to emplacement of the landfill, much of the local groundwater flow emanating from and through the peat within the landfill footprint discharged to Red Cove. As waste was emplaced in the landfill and the landfill was capped, local groundwater gradients changed and much of the groundwater flow was directed in a more northern direction.

To date, peat has not been encountered north of the landfill. However, due to the presence of wetlands, areas of buried peat deposits would not be unexpected. Recent well sampling north of the landfill indicates that in-situ carbon degradation and landfill leachate have resulted in reducing conditions. This has been confirmed by the low dissolved oxygen, elevated dissolved methane concentrations, elevated dissolved carbon, elevated ammonia concentrations, and



elevated arsenic and iron concentrations. Thus both naturally occurring conditions and landfill influence have and will continue to mobilize arsenic in that area.

Nonacoicus Brook is a groundwater discharge divide. Recent sampling shows there is no arsenic in the monitoring wells directly north of the wetlands confirming no impact from the landfill. The bedrock delineation and general elevation of the northern most wells indicates that the bedrock surface is much higher on the north side of the wetlands and brook than the southern side which indicates that groundwater flow is roughly opposite in direction to flow from the landfill. This flow of groundwater from the north effectively creates a redox boundary that should precipitate arsenic into iron solids as the water becomes more oxidizing. The impact on water quality is somewhat predictive. Based on the mixing estimates in the SAR (Sovereign, 2011) and the observed changes in arsenic from the DPT points placed in the north end, arsenic in detectable quantities are unlikely to ever occur in the wetlands or the brook.

8.3 Contaminant Fate and Transport

Fate and transport of arsenic is related both to the source of arsenic and the presence of degradable carbon species in the aquifer.

Arsenic fate and transport at the north end of the site has been determined in some locations. The groundwater on the north side of the Brook that is intruding into the landfill impacted water on the southern side of the Brook contains on average 50 mg/L of sodium. The wells in the landfill contain on average 15 mg/L of sodium. This is due to the intrusion of the iron-bicarbonate water created from the landfill carbon degradation process and subsequent replacement of calcium and sodium in the native groundwater. The wells at the north end of the impacted area at the south side of the Brook and wetlands contain on average 26 mg/L of sodium. This indicates that mixing of water from the north side of the Brook which is high in sodium is occurring. Using a simple mixing model, approximately 47% mixing between the two waters has occurred. This same analysis can be done with calcium, bicarbonate, sulfate or chloride with similar results. Depending on the analyte used in the mixing calculation, some water appears to be mixing with water from the north by as much as 75%

The subsequent mixing with this water diminishes arsenic to low levels. Mixing also results in redox changes that will oxidize iron (II) to iron (III) with subsequent adsorption of soluble arsenic. Due to the marked geochemical changes in the north end, arsenic exceeding 400-ug/L will not enter the wetlands/Brook underflow. Since rapid oxidation is expected in the wetlands, detectable arsenic entering the base-flow is unlikely. A proposed monitoring well network will be used to further examine the geochemical changes in the north end impacted area.

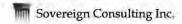
Analysis of reducing conditions created by landfill waste or peat suggests that the peat layer, with or without waste above it supplies more carbon input to the groundwater than ash or waste alone by almost a factor of two. This also suggests that the peat layer and associated wetlands have been acting as a carbon source long before the landfill existed. This carbon source would also have led to locally reducing conditions that would have mobilized arsenic before the existence of the landfill.



9.0 CONCEPTUAL SITE MODEL

The data gathered during the above noted and previously referenced investigations were used to continually update and refine the CSM as it has been presented herein. Presently, the conceptual site model has been updated to include the following new information.

- Waste within the landfill has been further characterized with the recent installation of 5 borings drilled through the landfill to bedrock. Waste analysis revealed that with the exception of lead, zinc and copper most trace elements were at typical background levels. Arsenic does not appear to have leached significantly from the waste into groundwater due to the lack of typical leaching patterns or enrichment in subsurface soils. Arsenic in waste was also not dissimilar to arsenic observed locally or regionally in soils or rock. Arsenic in the waste or peat did not exceed 60 mg/kg. Leaching tests indicate that landfill waste potentially could deliver up to 500 ug/L arsenic to underlying groundwater. However, placement of the cap has likely eliminated possible leaching of arsenic and any other constituents from landfill waste to underlying groundwater.
- In comparison to the waste, the underlying sand potentially leaches up to 1,500 ug/L
 arsenic to groundwater. In addition reductive dissolution of arsenic containing
 amorphous iron solids could release as much as 30,000 ug/L of arsenic. Based on these
 results, the aquifer sand is the dominant source of arsenic at the landfill.
- The borings through the landfill revealed that thick peat layers are found underlying waste in the center of the landfill roughly bounded by SHL-99-29x, SHM-10-13, SHM-10-14 and SHM-10-15.
- The peat and the associated wetlands preceded the landfill. The peat is a significant source of carbon to the groundwater and caused locally reducing conditions prior to emplacement of waste. Therefore arsenic mobilization has been occurring historically prior to landfill development and will continue to occur as long as carbon degradation within the peat takes place.
- Anaerobic degradation within the aquifer in the northern impacted area is occurring
 with or without landfill influence. This occurs likely from natural organic matter and
 possibly peat since this area was at least in part a former wetland. These conditions have
 allowed arsenic to be mobilized within the northern impacted area aquifer sands and
 will likely persist for centuries.
- The importance of peat as a source of reducing conditions and arsenic mobilization has been addressed. Calculation of carbon inputs to groundwater at the site demonstrates that peat could supply up to twice as much carbon to underlying groundwater compared to waste alone. This may or may not have been the case throughout the landfill history. Early in the landfill history waste might have been the more important carbon source but as easily degradable material was consumed, the landfill input



diminished compared to that of the underlying peat. The carbon dating studies conducted by Gannett Fleming (2009 Memo, USEPA) on methane sources from the landfill seem to indicate that methane emanating from the landfill was biogenic (produced by biodegradation) and that the carbon source was likely entirely from historic or old carbon such as the peat. However analytical problems discussed in the report prevent any further use of the data.

- Literature reviews and textbooks on wetlands and peat make it abundantly clear that the formation and maintenance of wetlands and peat always result in anaerobic conditions and resulting biogeochemical conditions that will mobilize arsenic as explained in the SAR. High arsenic levels are attributed to biodegradation of buried peat deposits which drives the reductive dissolution of FeOOH supplying high amounts of arsenic to groundwater. The correlation of peat deposits to high arsenic has also been noted by others (Ravenscroft, et al., 2001; Smedley and Kinniburgh, 2002).
- Arsenic in groundwater in the north impacted area appears to diminish substantially prior to discharge into Nonacoicus Brook and wetlands due to the underlying oxygenated zone. The redox boundary occurs due to intrusion or mixing of non-impacted groundwater entering the Brook and wetlands from the north and north east of the Brook in the opposite direction of the flow from the landfill. Chemistry of water in several DPT points close to the brook show mixing or dilution with water from the north side indicating that the brook is a discharge divide. Arsenic is not expected to impact the brook and wetlands due to this redox boundary. The area to the east of the new DPT points has only been partially characterized.
- The placement of the landfill cap increased arsenic flux to the north. Operation of the pump and treat system subsequently caused a significant reduction in arsenic concentrations in wells SHP-05-41B and SHM-93-22B as the additional arsenic flux was mitigated.
- Groundwater discharge at the north end appears to follow the particle track data presented by AMEC. Arsenic impact to the MacPherson well is not anticipated based on the results of the investigation at the redox boundary.
- Newly acquired bedrock information indicated that bedrock was located at a shallow depth than originally projected within the area near Nonacoicus Brook. This information was incorporated within the hydrogeologic study and the particle track updated. The results indicated an increase in the groundwater flow velocity near the brook, but continued to show that the system is collecting the arsenic impacted groundwater.
- An evaluation of methane determined that the dissolved concentration within groundwater does not present an explosive hazard.



• Arsenic entering Red Cove is likely from reducing conditions prevalent in the landfill and peat. The reducing conditions have mobilized arsenic from the aquifer sand which is now entering the Red Cove via a different flow path than the predominant southnorth flow pattern observed for most of the landfill. It is also possible that the arsenic and iron floc impact to Red Cove preceded the placement of the landfill due to the same reducing conditions created by the historic wetlands and peat. The landfill and its reducing conditions would then have exacerbated the flux

10.0 FINDINGS AND CONCLUSIONS

The findings of this investigation as summarized as follows:

- North Impact Area Delineation & Monitoring The investigation included the advancement of soil borings, completion of groundwater vertical profiling, and construction and sampling of monitoring wells on the northern and southern side of Nonacoicus Brook. These boring and well locations are identified as SHM-10-01, SHM-10- SHM-10-03, SHM-10-04, SHM-10-05 (no well installed), SHM-10-05A, SHM-10-08, SHM-10-09 (no well installed), and SHM-10-10. Groundwater profiling conducted during the drilling program recorded dissolved arsenic concentrations varying from non-detect to 112-ug/l. Sampling and analysis of groundwater samples obtained from the monitoring wells reported concentrations of dissolved arsenic varying between 0.43 and 7.87-ug/L. Lastly, the geophysical survey indicated that bedrock slopes upward, thereby restricting the migration of the arsenic. The results of these data define the down-gradient extent of the arsenic impact below the vicinity of the southern bank of Nonacoicus Brook. Groundwater flow from the north and northeast of the Brook flows and mixes with groundwater advancing north and northwest from the landfill area creates an oxidation/reduction front that effectively limits the northern extent of the arsenic at the mixing front.
- North Plume Capture Points SHM-10-06 and SHM-10-06A were installed to evaluate the capture and confinement of the arsenic plume on the north and northeastern side of the existing arsenic treatment plant. Groundwater profiling indicated evidence of dissolved arsenic ranging from 10 to 2,540-ug/L in well SHM-10-06, while decreased concentrations were detected in SHM-10-06A at concentrations of non-detect to 106-ug/L. Sampling and analysis of groundwater from the monitoring wells document concentrations decreasing between the two wells from 2,710 to 60.1-ug/L. These data were included in refined particle tracking modeling that indicates that the treatment system is reducing arsenic mass and capturing the bulk of arsenic mass on the northern and northeastern side of the treatment plant and that the impacts are bounded between monitoring points SHM-10-06 and SHM-10-06A. Drilling operations indicated a shallower than previously extrapolated bedrock surface in this area. The shallower rock elevations were plotted and included in the refined particle track models that document a bedrock trough trending northward through the landfill and that the shallower rock ridge along the east side of the landfill appears to restrict arsenic migration in a northerly direction.

- Landfill Gas Impact -Modeling was conducted to determine if methane gas intrusion into an occupied building or structure was a concern. The results of this modeling used a dissolve methane concentration of 10-mg/L in the groundwater and determined that this concentration would not pose an explosive hazard.
- East Plume Delineation and Capture A temporary monitoring well was advanced at the location identified as SHM-10-07. Groundwater profiling recorded dissolved arsenic concentrations varying between 58 and 1,350-ug/L, while groundwater sampling of this monitoring well confirmed dissolved arsenic concentrations of 818 and 918-ug/L. Drilling operations indicated a shallower than previously extrapolated bedrock surface in this area. The shallower rock elevations were plotted and included in the refined particle track models that document a bedrock trough trending northward through the landfill and that the shallower rock ridge along the east side of the landfill appears to restrict arsenic migration to a northerly direction.
- Arsenic MNA/Source Strength and Reducing Environmental Evaluation An evaluation of the collected information determined the following;
 - The primary source of arsenic in groundwater appears to be aquifer sands rich in amorphous iron hydroxide solids, usually coated on sand grains as documented through microscopy. Other sources of arsenic may include landfill waste, peat, and bedrock/till. The possible contribution of landfill waste has been reduced due to depletion of easily degradable carbon and recent capping of the landfill. While peat in some instances was found to contain arsenic, it is not clear if the peat contained the arsenic originally or whether arsenic accumulated in the peat by leaching of arsenic from overlying waste.
 - Arsenic solubility is controlled by desorption from the iron solids and by reductive dissolution of the iron (III) solids created by biodegradation of peat and waste. A site specific distribution coefficient (Kd) was derived from the aquifer solids content and aqueous arsenic in contact with the solids. The equilibrium distribution coefficient of 7.6. The distribution is useful for predicting ranges of arsenic concentrations that could be expected in local groundwater. This process does not however include dissolution of the iron solid, a process that could lead to higher arsenic concentrations.
 - Arsenic groundwater distribution has been elucidated via a number of transects and depth profiles. The distribution of arsenic can be considered as (1) increasing with depth to just above the glacial till layer, (2) highest in the center of the landfill near SHM-10-14 and SHM-10-15, (3) slowly decreasing in concentration to the north of the landfill to the south side of the Brook and wetlands, and (4) controlled in large degree by the bedrock surface as far as flow direction is concerned.
 - The redox boundary appears to be located in the vicinity of SHM-10-10. The boundary consists of three features: (1) a bedrock surface that controls the flow of landfill impacted water to the Brook but also brings groundwater from the north and northeast of the Brook that counters the landfill flow, (2) intrusion of clean more



oxidized groundwater from the north side of the landfill, and (3) mixing of clean water resulting in precipitation of arsenic that does not impact the water quality in the Brook or wetlands. The area east of SH-10-17 along the brook and wetlands has not been completely delineated.

- Carbon inputs to the groundwater from biodegradation of waste or peat indicates that peat is likely more important for maintaining reducing conditions than landfill waste. The reducing conditions created by the peat preceded the landfill, but were exacerbated by the additional carbon source from the landfill waste. Peat formation is a result of reducing conditions, but also maintains reducing conditions by biodegradation and release of short chain carboxylic acids and methylated amines that will drive iron oxy hydroxide reduction and ammonia production (Bergmann et al, 1999) both byproducts that are widespread at the site.
- The time to return the aquifer to "pre-landfill" conditions has been simulated from columns experiments. The time frame describing removal of soluble arsenic from the landfill aquifer and north impacted area is approximately 270 years based on this data.
- Peat within the landfill footprint caused arsenic mobilization to the north end of the site toward Nonacoicus Brook as well as east toward Plow Shop Pond prior to the placement of waste. In addition, wetlands and presumably peat occurring in the NIA are also a source of natural reducing conditions that will persist even if the landfill waste were to be removed. Recent estimates indicate that peat degradation and reducing conditions could persist for hundreds to thousands of years.

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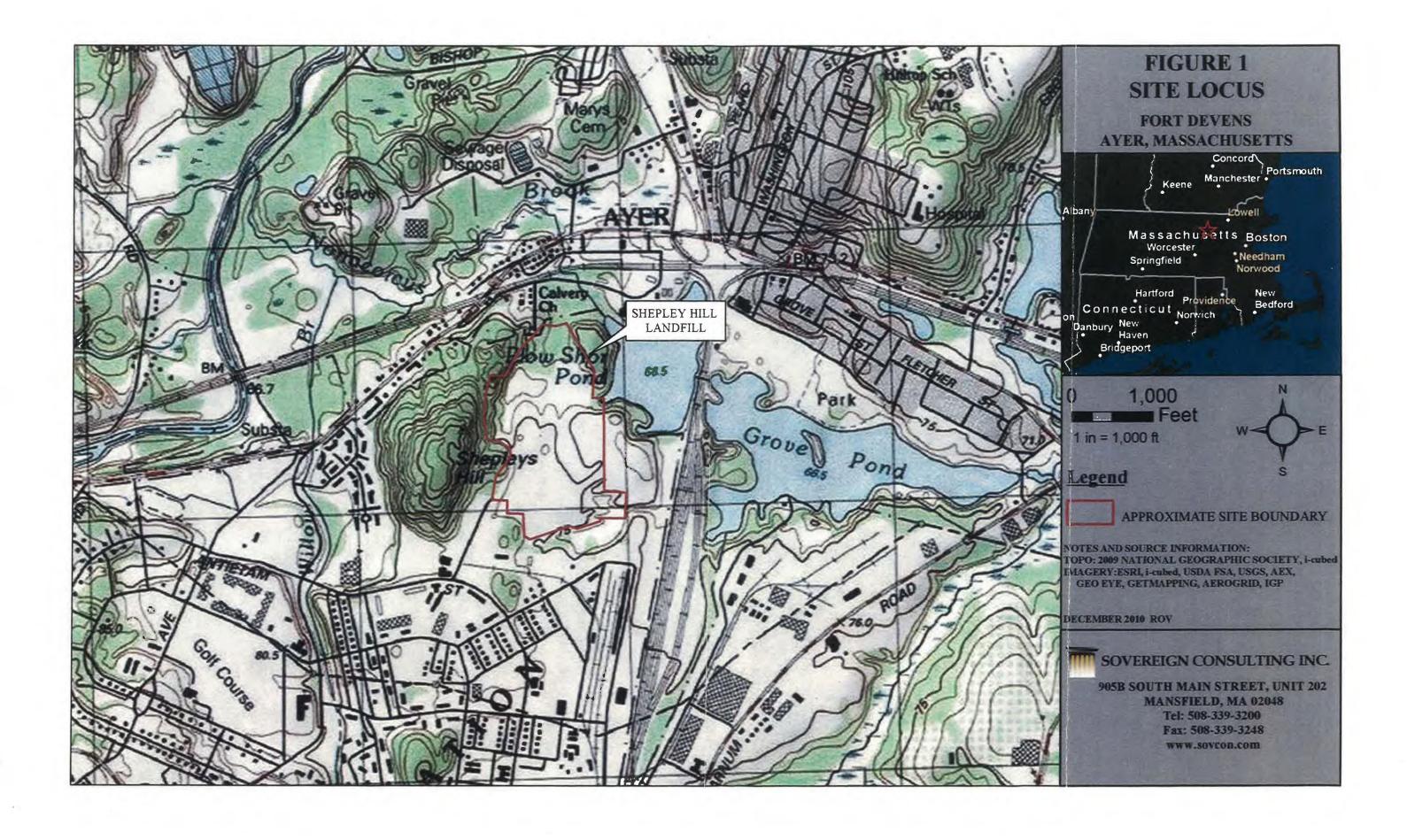
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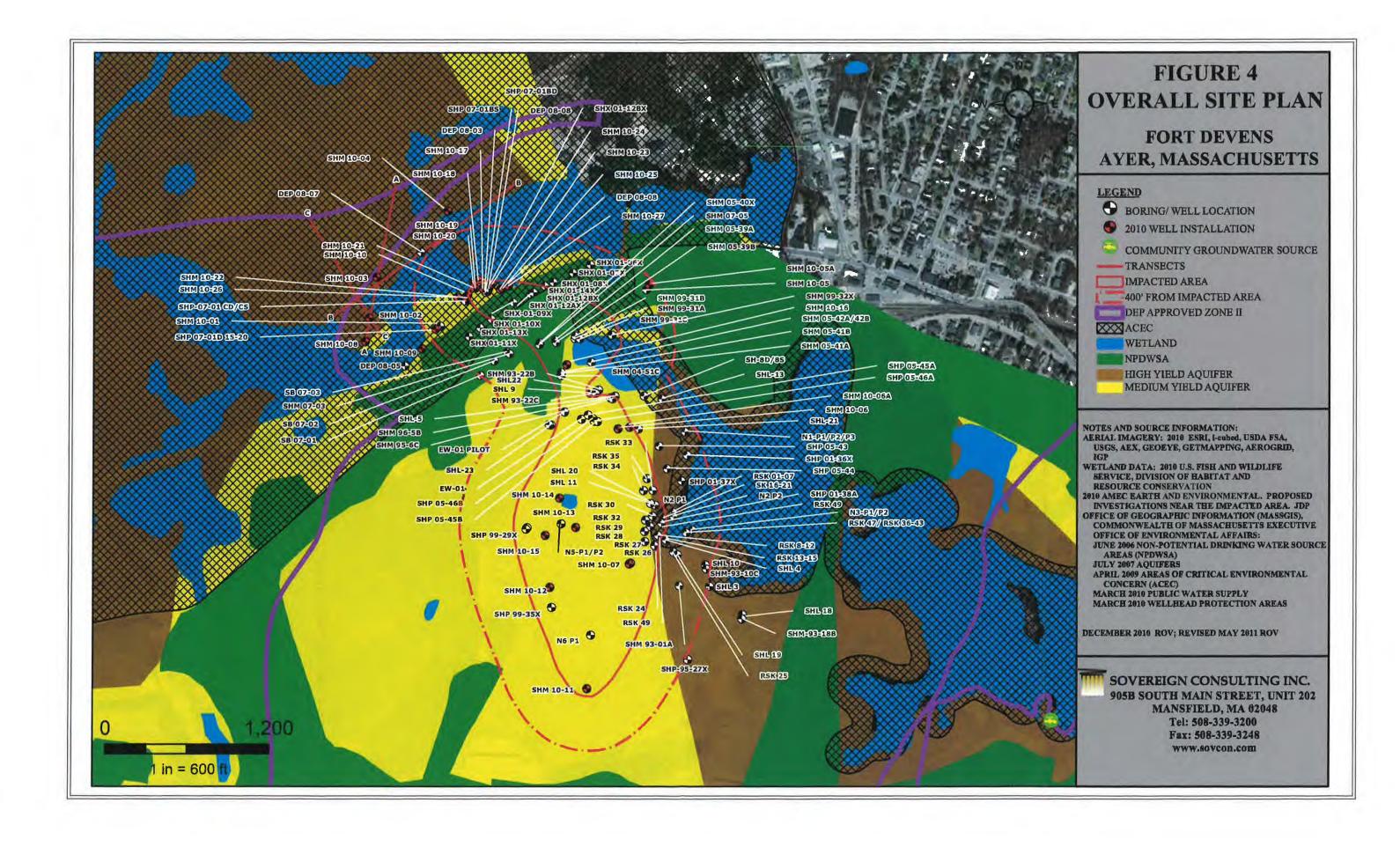
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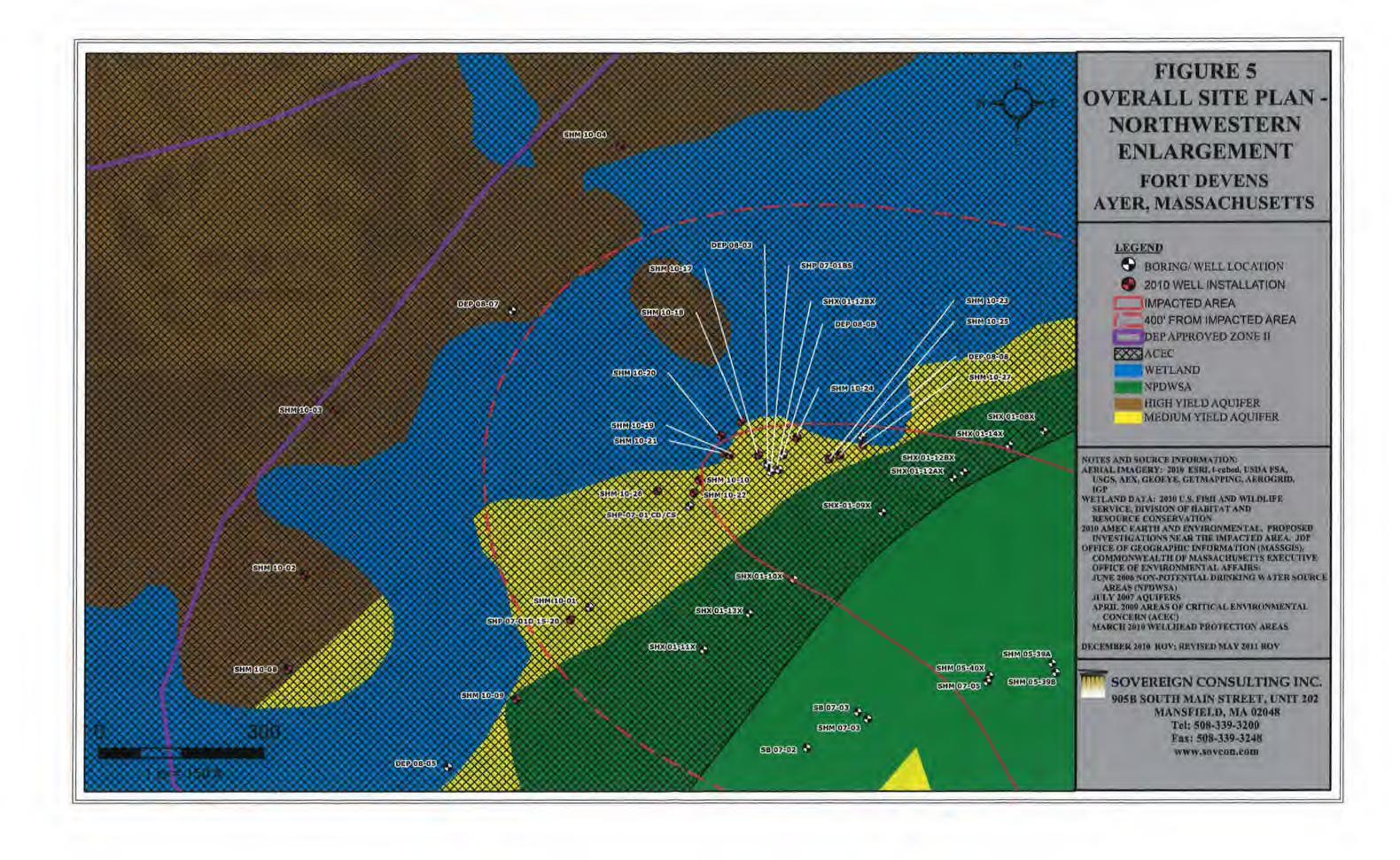
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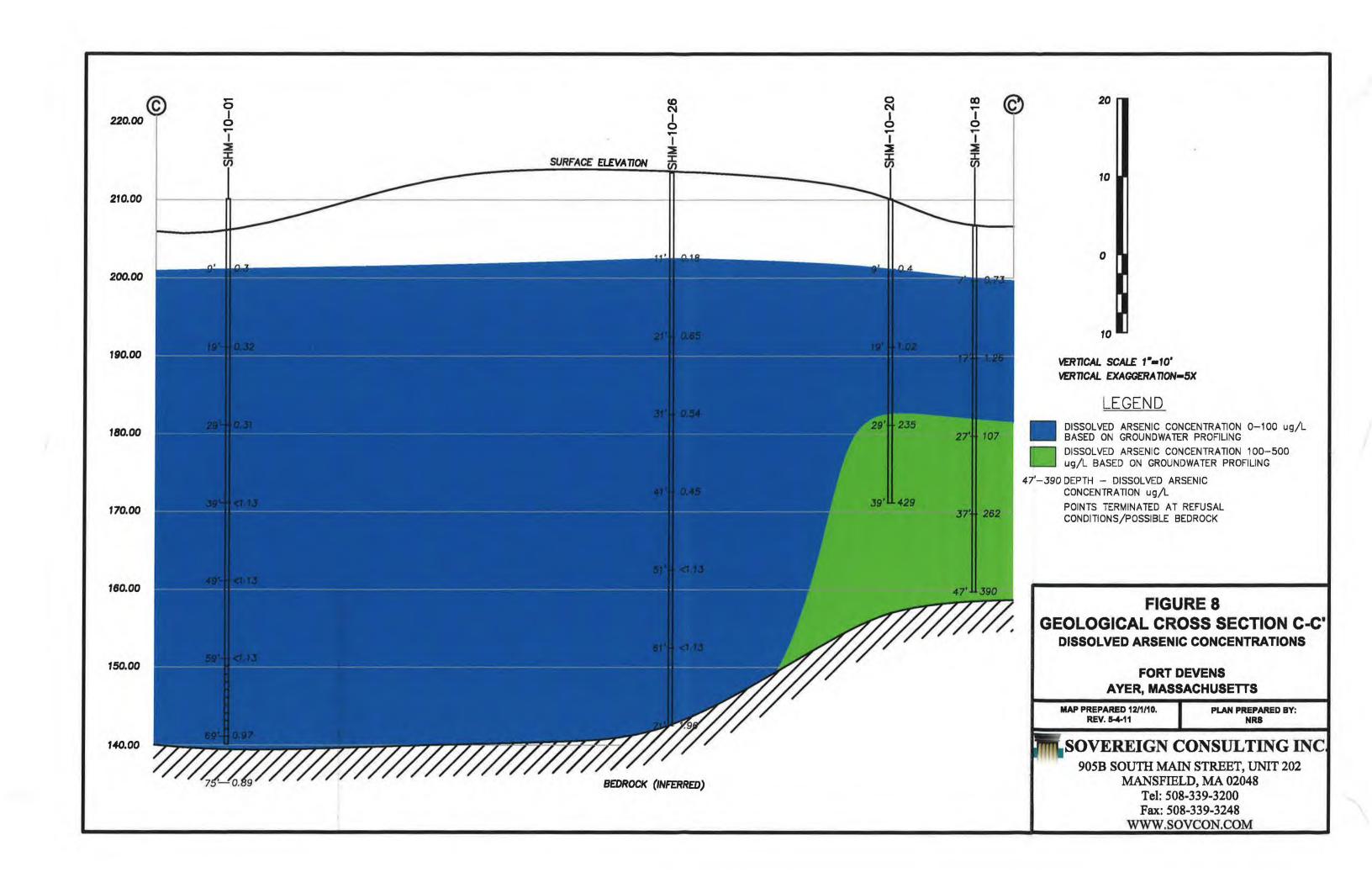
FIGURES

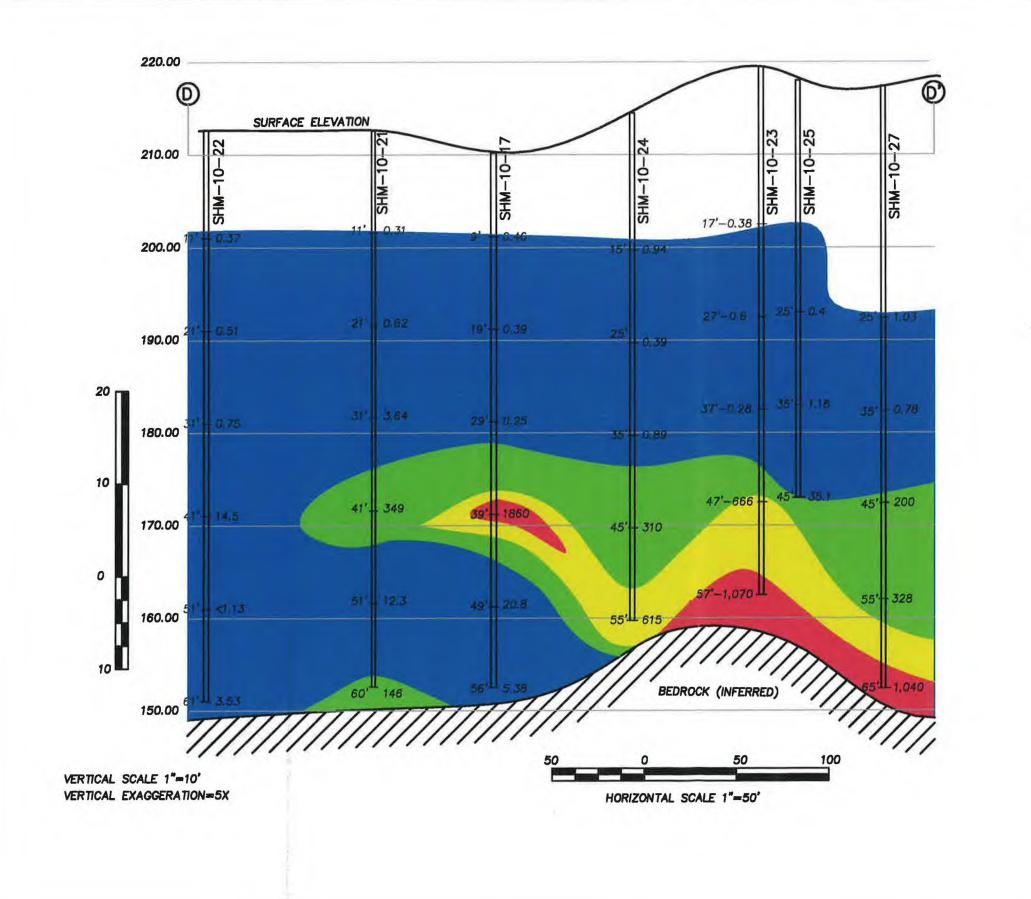
FIGURES











LEGEND

DISSOLVED ARSENIC CONCENTRATION 0-100 ug/L

DISSOLVED ARSENIC CONCENTRATION 100-500 ug/L

DISSOLVED ARSENIC CONCENTRATION 500-1,000 ug/L

DISSOLVED ARSENIC CONCENTRATION 1,000-10,000 ug/L

47'-390 DEPTH - DISSOLVED ARSENIC CONCENTRATION ug/L
BASED ON GROUNDWATER PROFILING

POINTS TERMINATED AT REFUSAL
CONDITIONS/POSSIBLE BEDROCK

FIGURE 9 GEOLOGICAL CROSS SECTION D-D' DISSOLVED ARSENIC CONCENTRATIONS

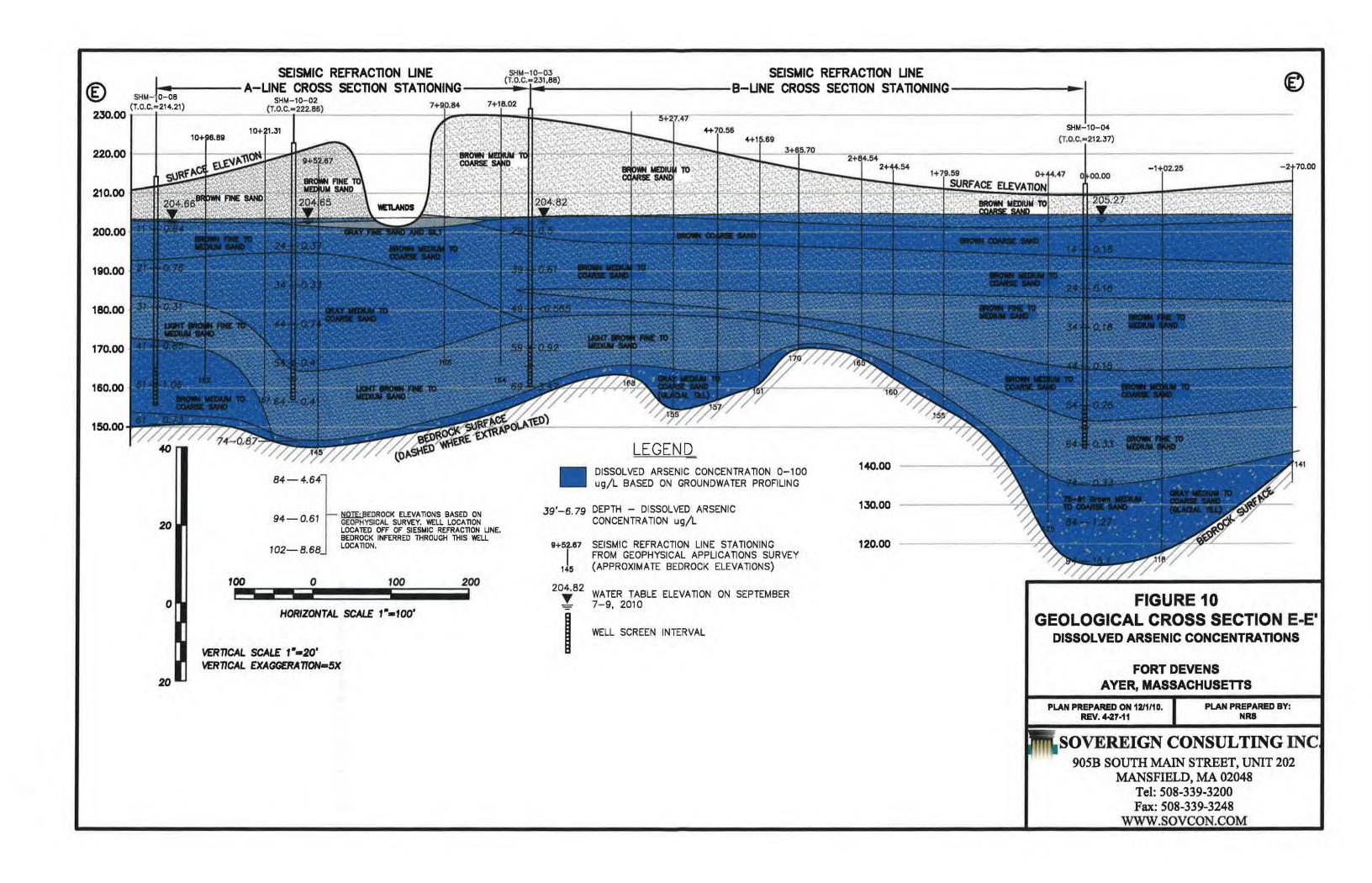
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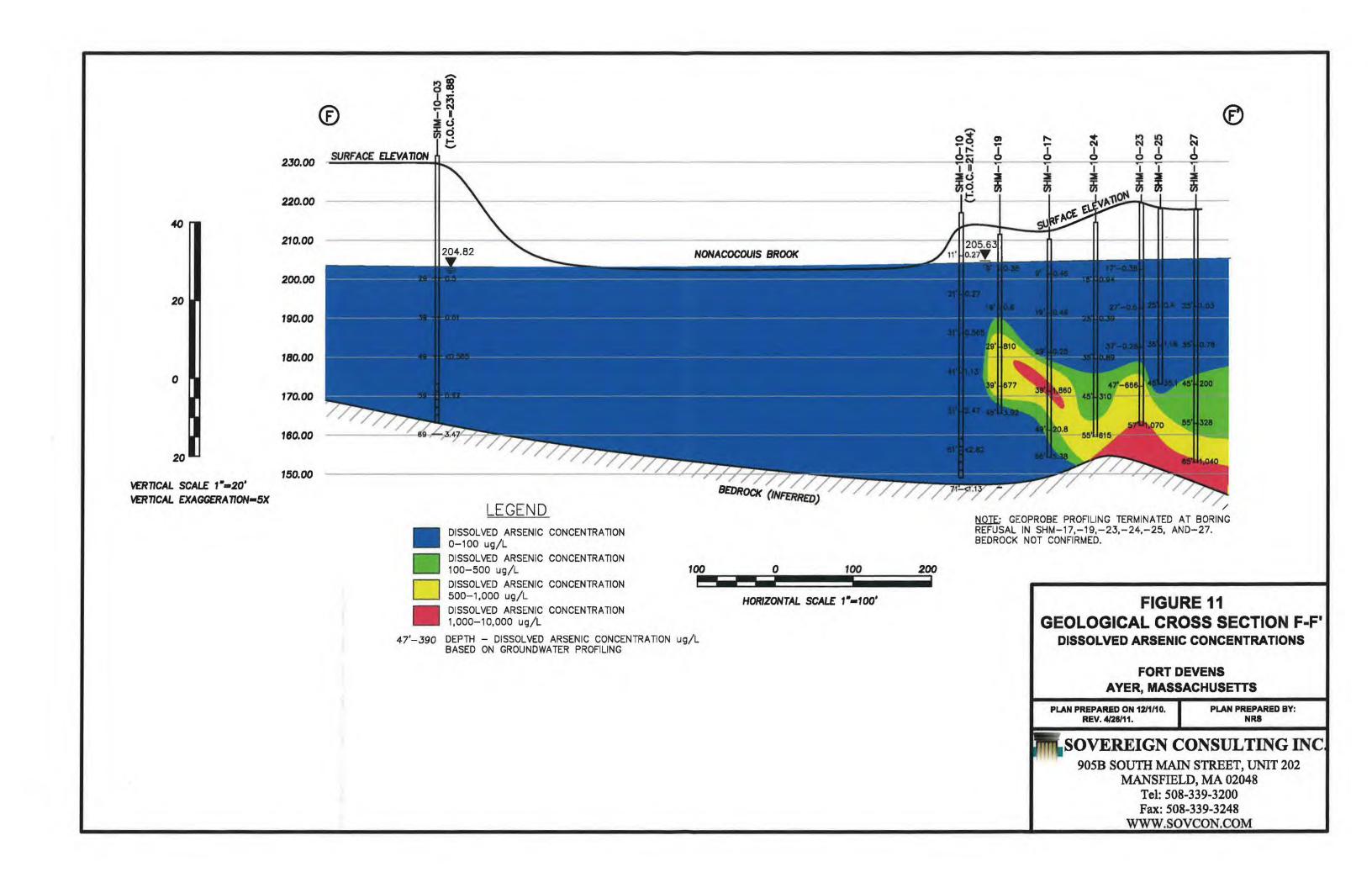
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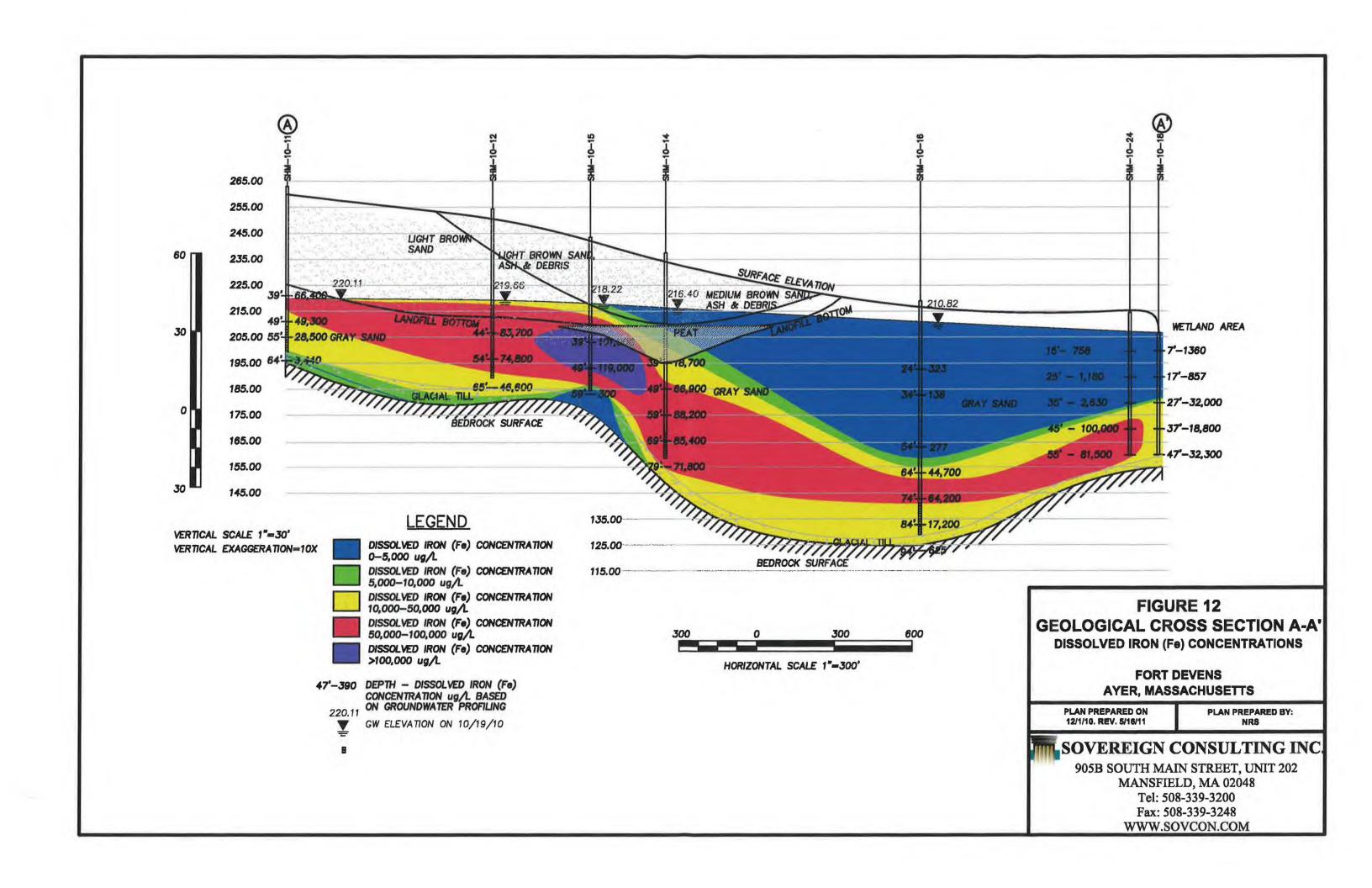
SOVEREIGN CONSULTING INC.

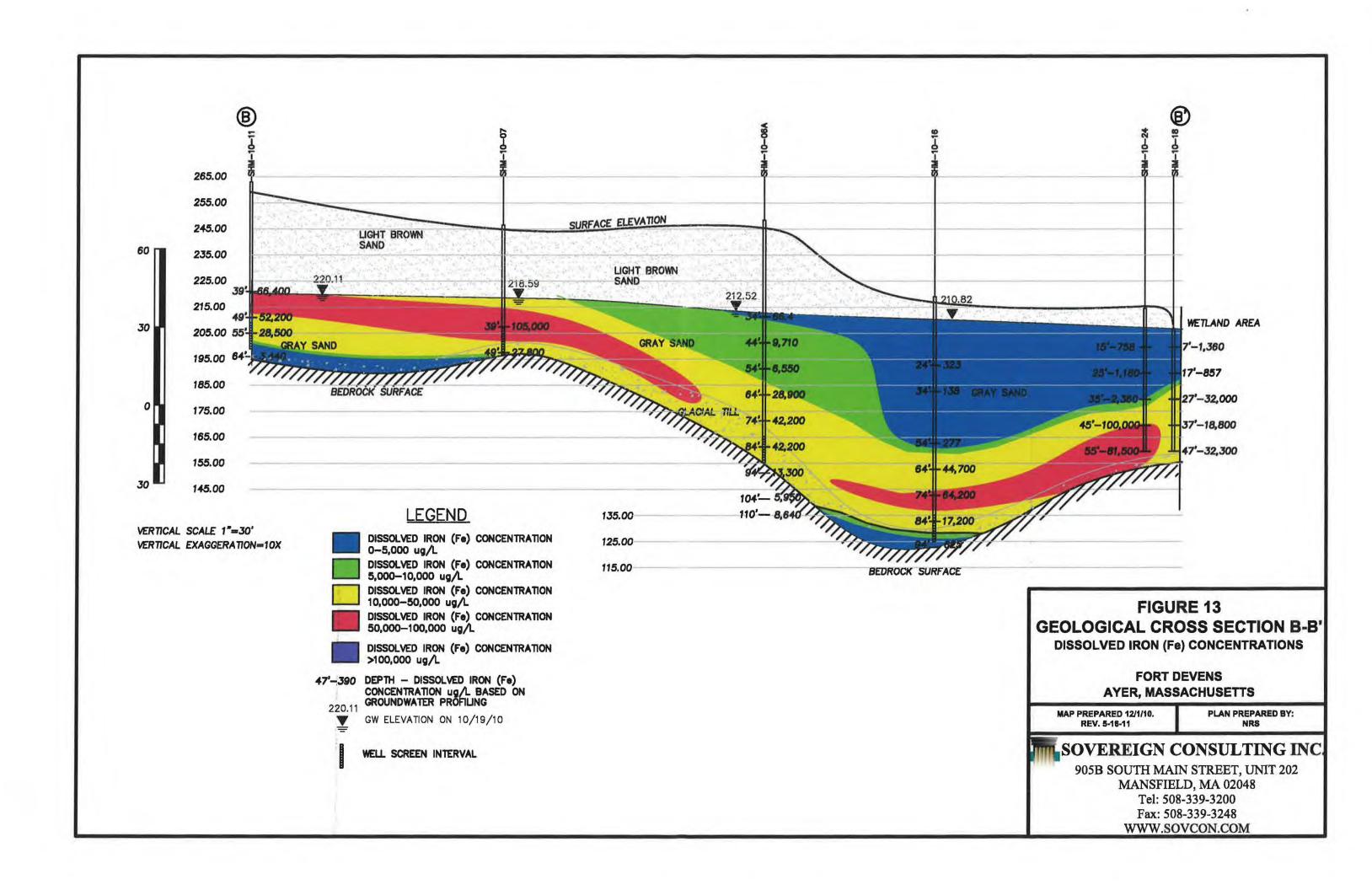
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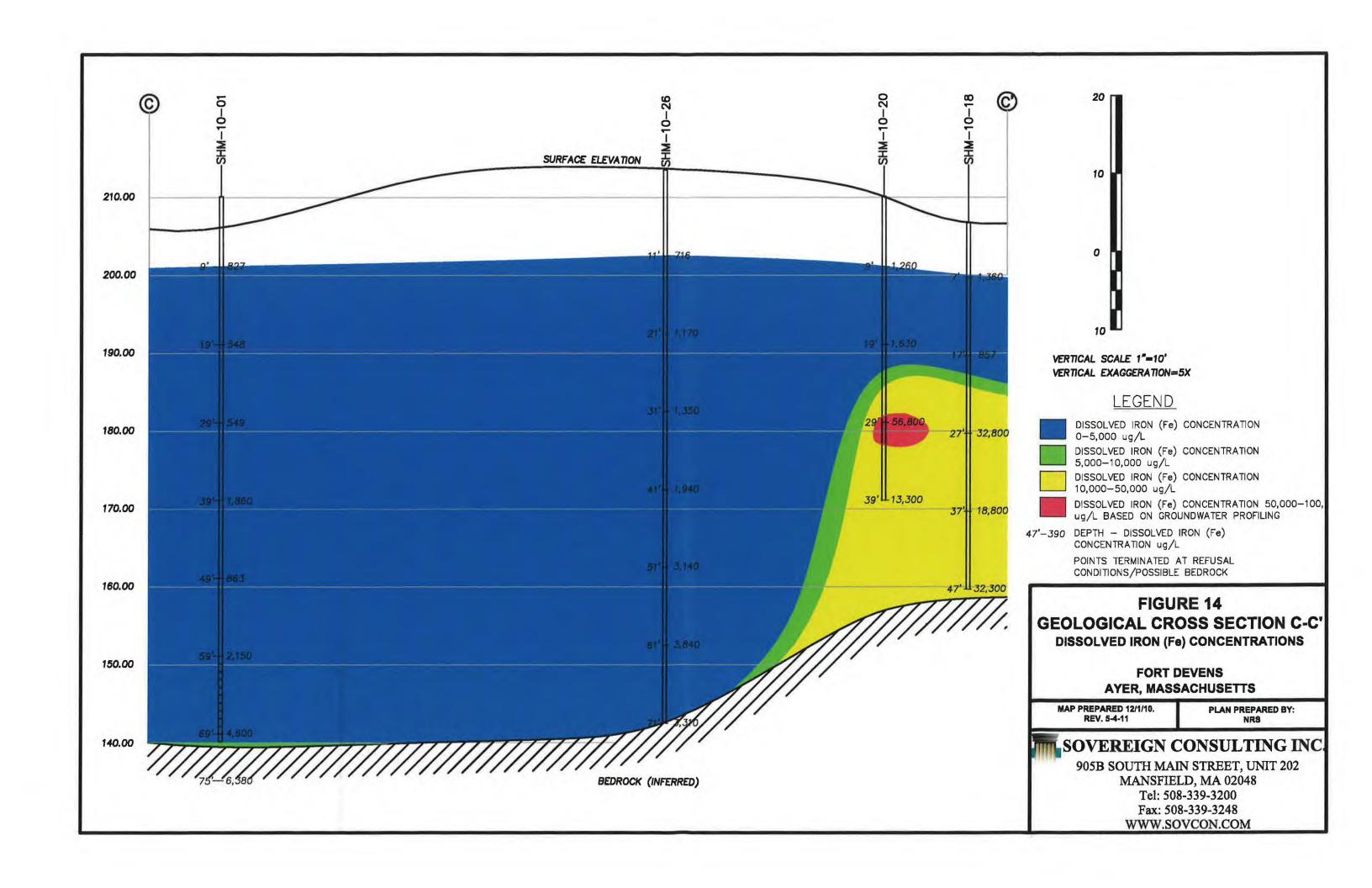
Fax: 508-339-3248 WWW.SOVCON.COM

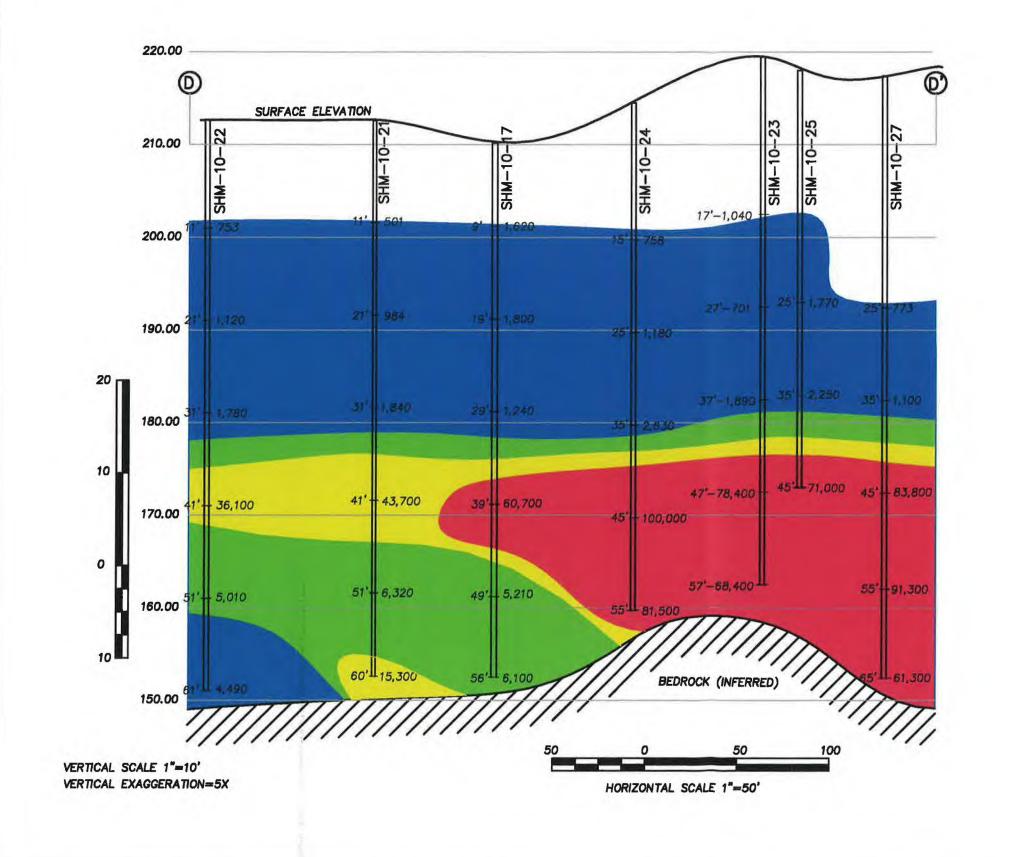












LEGEND

DISSOLVED IRON (Fe)
CONCENTRATION 0-5,000 ug/L

DISSOLVED IRON (Fe)
CONCENTRATION 5,000-10,000 ug/L

DISSOLVED IRON (Fe)
CONCENTRATION 10,000-50,000 ug/L

DISSOLVED IRON (Fe)
CONCENTRATION 50,000-100,000 ug/L

DISSOLVED IRON (Fe)
CONCENTRATION >100,000 ug/L

47'-390 DEPTH - DISSOLVED IRON (Fe)
CONCENTRATION ug/L BASED ON
GROUNDWATER PROFILING
POINTS TERMINATED AT REFUSAL
CONDITIONS/POSSIBLE BEDROCK

FIGURE 15 GEOLOGICAL CROSS SECTION D-D' DISSOLVED IRON (Fe) CONCENTRATIONS

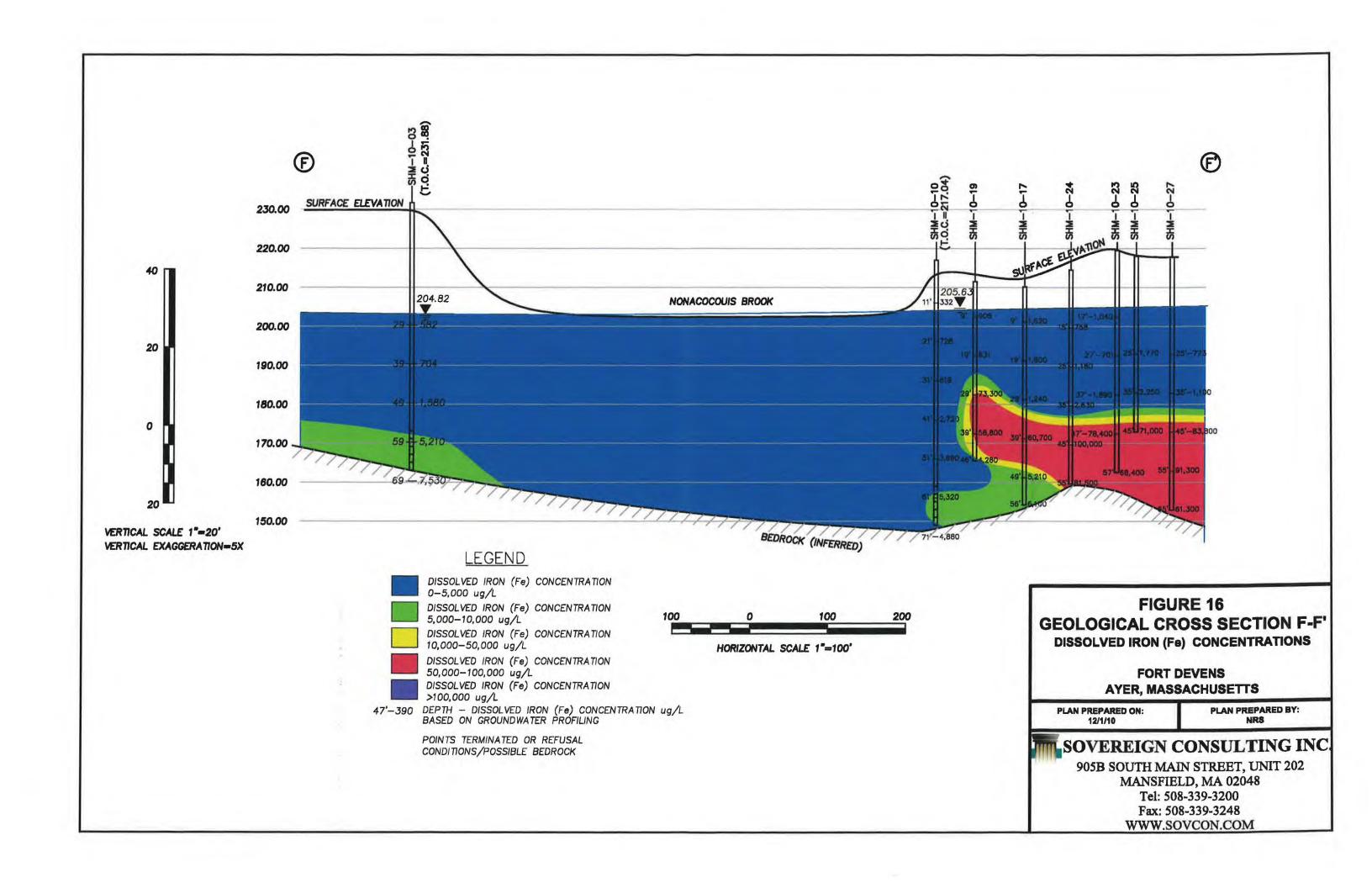
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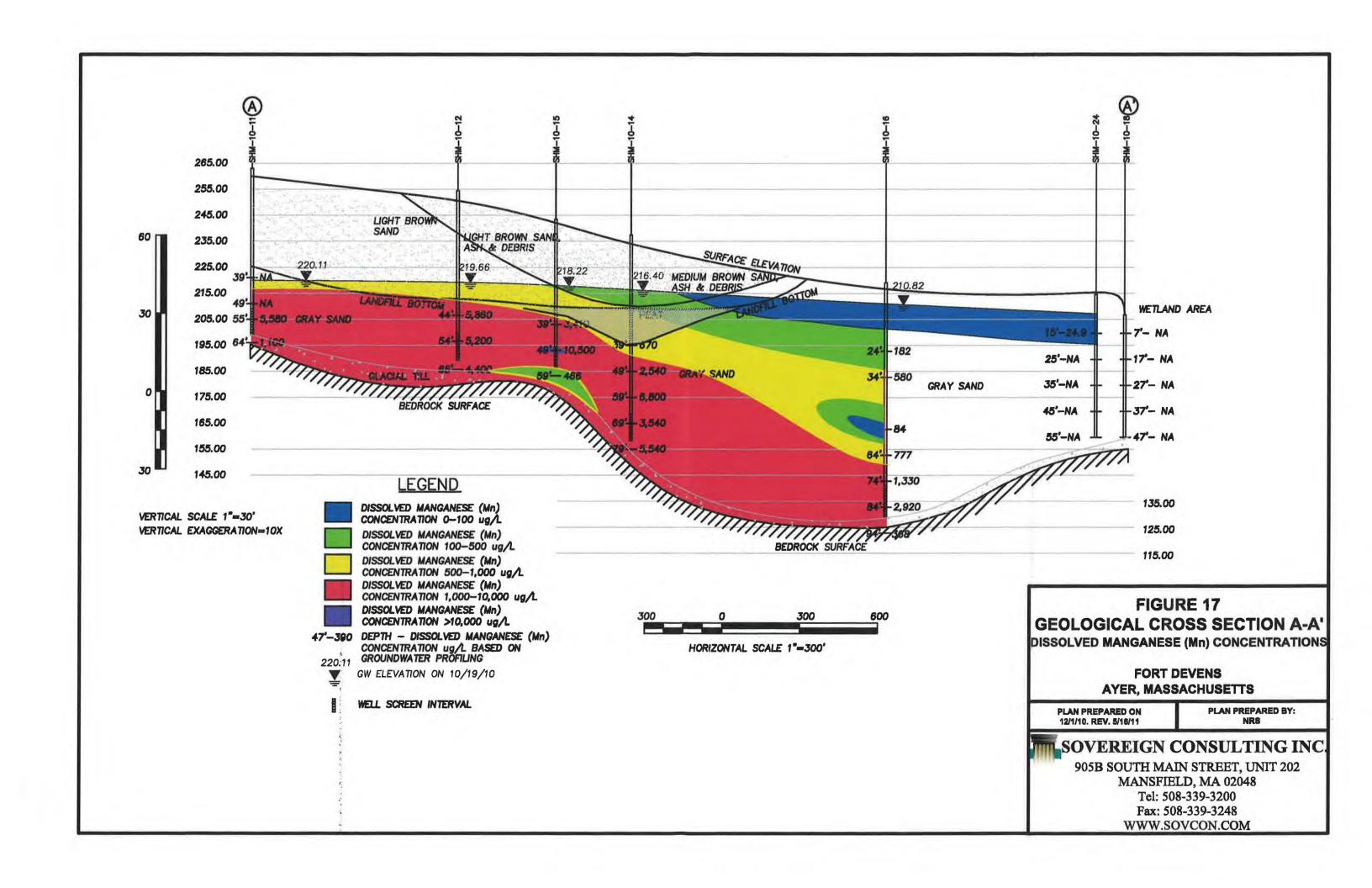
MAP PREPARED 12/1/10. REV. 5-3-11 PLAN PREPARED BY:

SOVEREIGN CONSULTING INC.

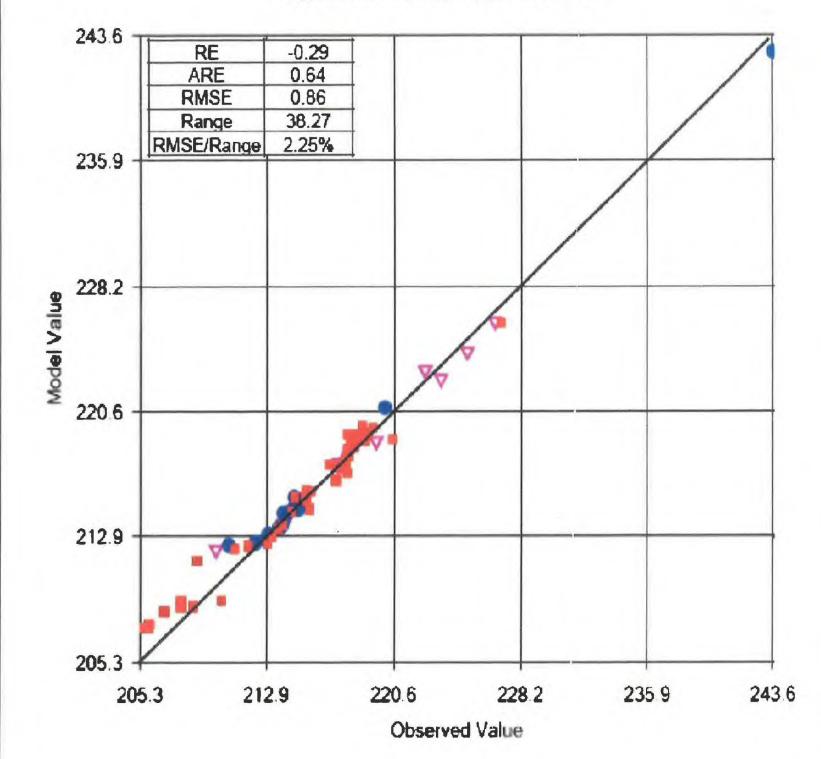
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Shepley's Hill Landfill Focused Feasibility Study Supplemental Hydrogeologic Assessment



- Model Layer 1
- Model Layer 2
- Model Layer 3

FIGURE 31

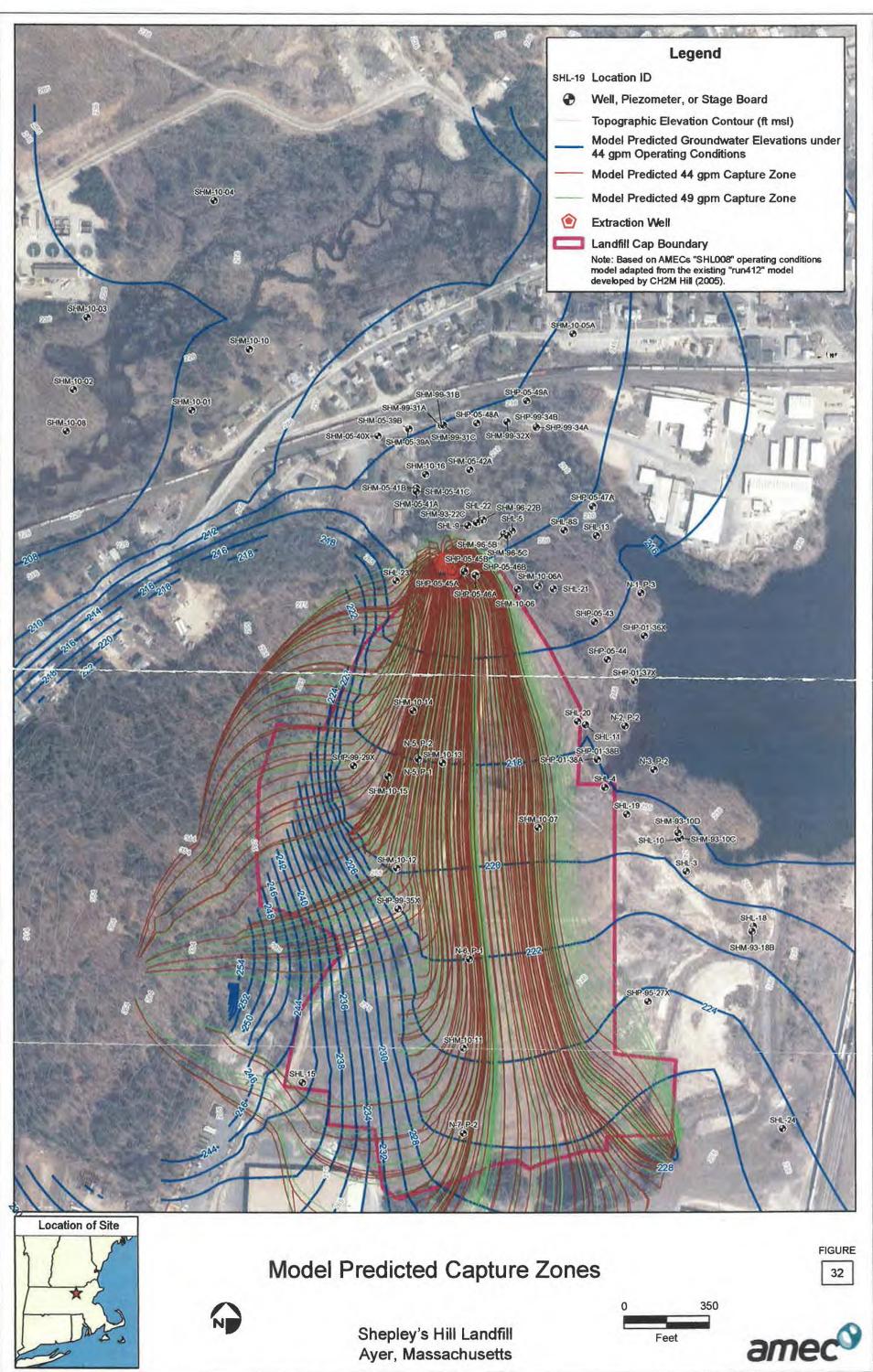
CORRELATION BETWEEN LONG TERM
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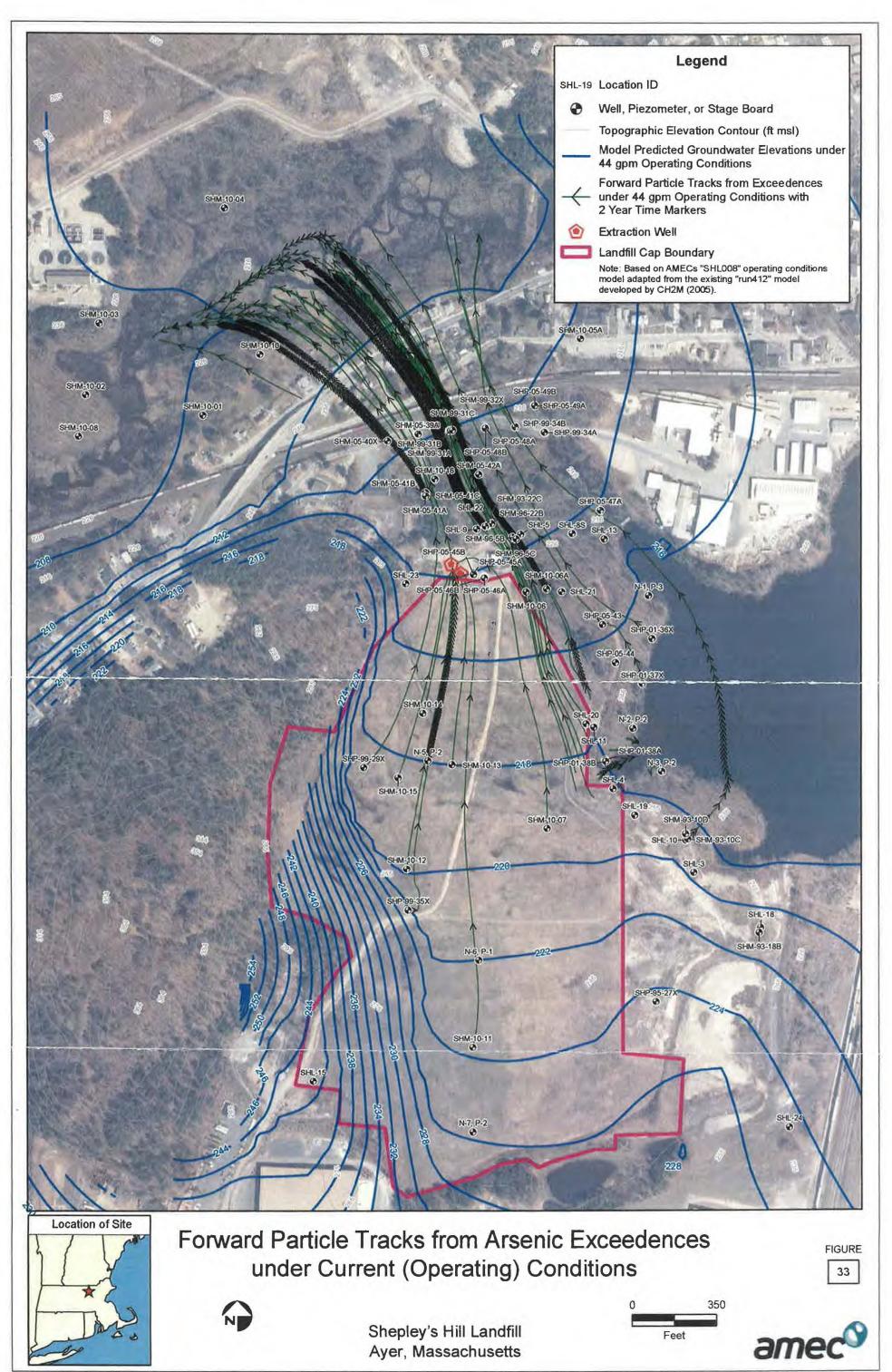
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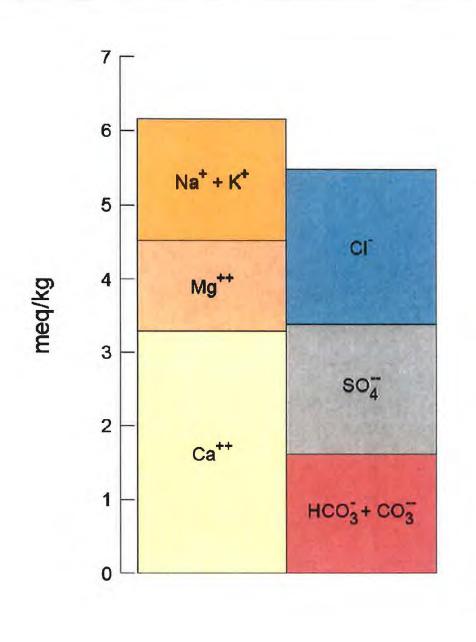


FIGURE 34 CATION-ANION BALANCE AND BICARBONATE IN SH-10-04

FORT DEVENS AYER, MASSACHUSETTS

PLAN PREPARED ON: 12/1/10 PLAN PREPARED BY: WJW



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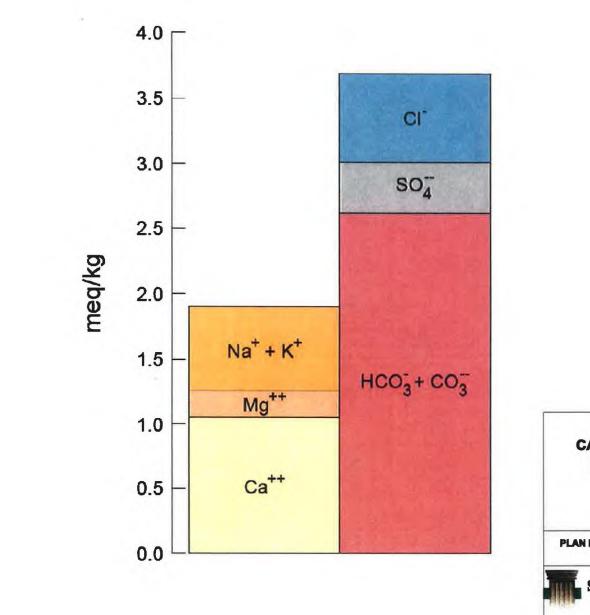


FIGURE 35 CATION-ANION BALANCE AND BICARBONATE IN SH-10-11

FORT DEVENS
AYER, MASSACHUSETTS

PLAN PREPARED ON: 12/1/10 PLAN PREPARED BY: WJW

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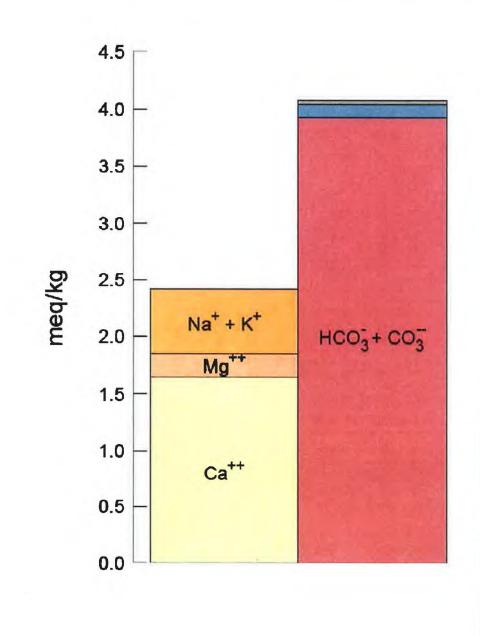


FIGURE 36 CATION-ANION BALANCE AND BICARBONATE IN SH-10-12

FORT DEVENS AYER, MASSACHUSETTS

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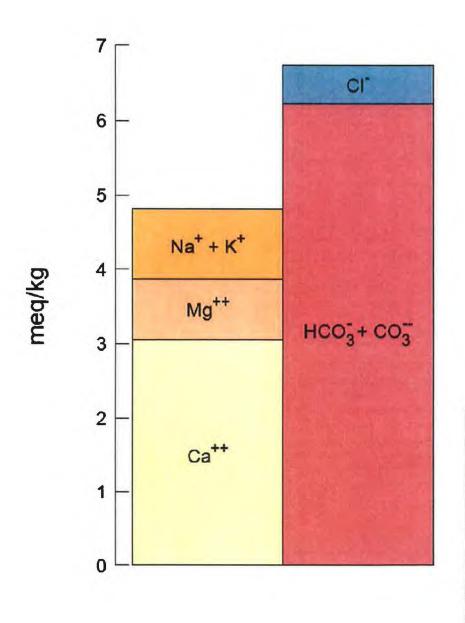


FIGURE 37 CATION-ANION BALANCE AND BICARBONATE IN SH-10-13

FORT DEVENS
AYER, MASSACHUSETTS

PLAN PREPARED ON: 12/1/10 PLAN PREPARED BY: WJW



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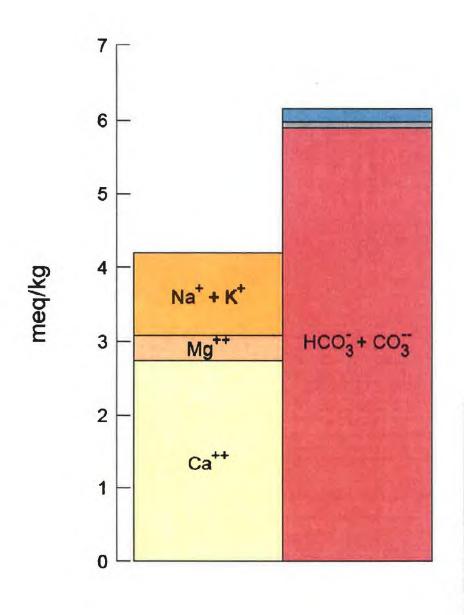


FIGURE 38 CATION-ANION BALANCE AND BICARBONATE IN SH-10-14

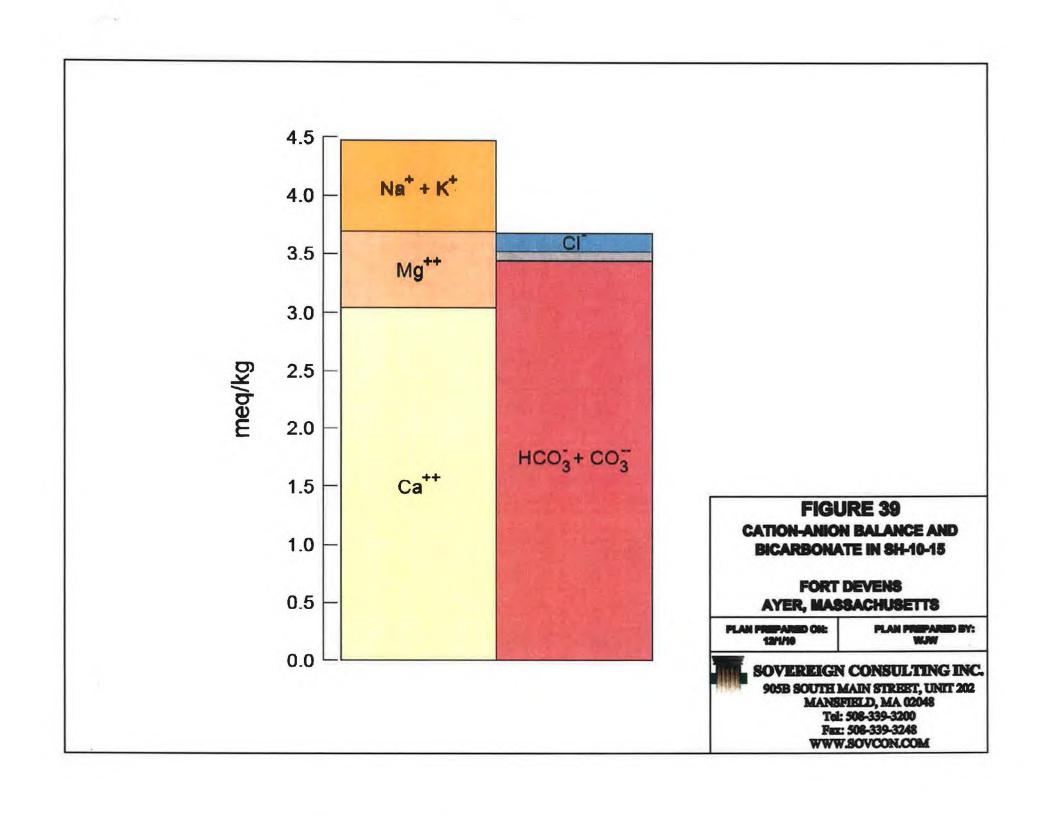
FORT DEVENS AYER, MASSACHUSETTS

PLAN PREPARED ON: 12/1/10 PLAN PREPARED BY: WJW



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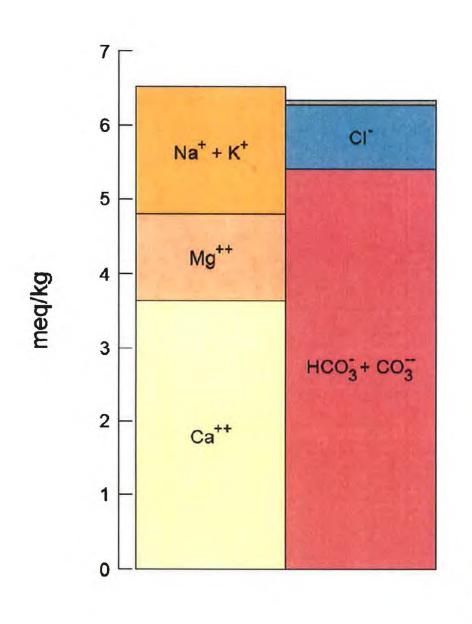


FIGURE 40 CATION-ANION BALANCE AND BICARBONATE IN SH-10-16

FORT DEVENS
AYER, MASSACHUSETTS

PLAN PREPARED ON: 12/1/10 PLAN PREPARED BY: WJW



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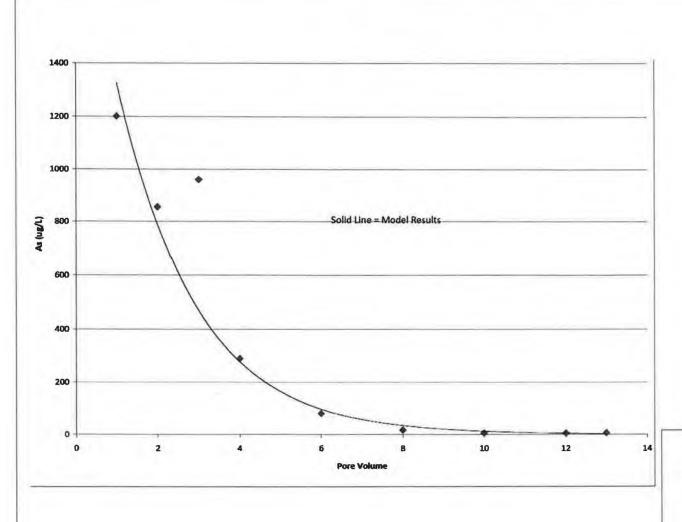


FIGURE 41 ARSENIC IN COLUMN EFFLUENT

FORT DEVENS
AYER, MASSACHUSETTS

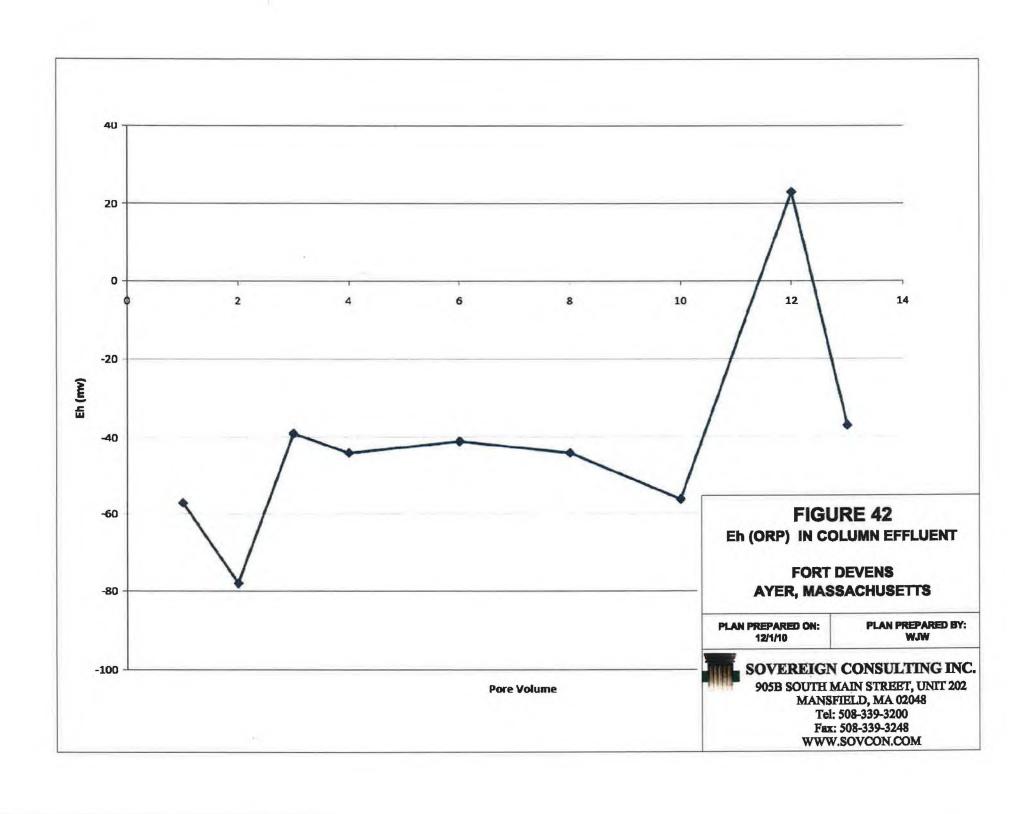
PLAN PREPARED ON: 12/1/10 PLAN PREPARED BY: WJW

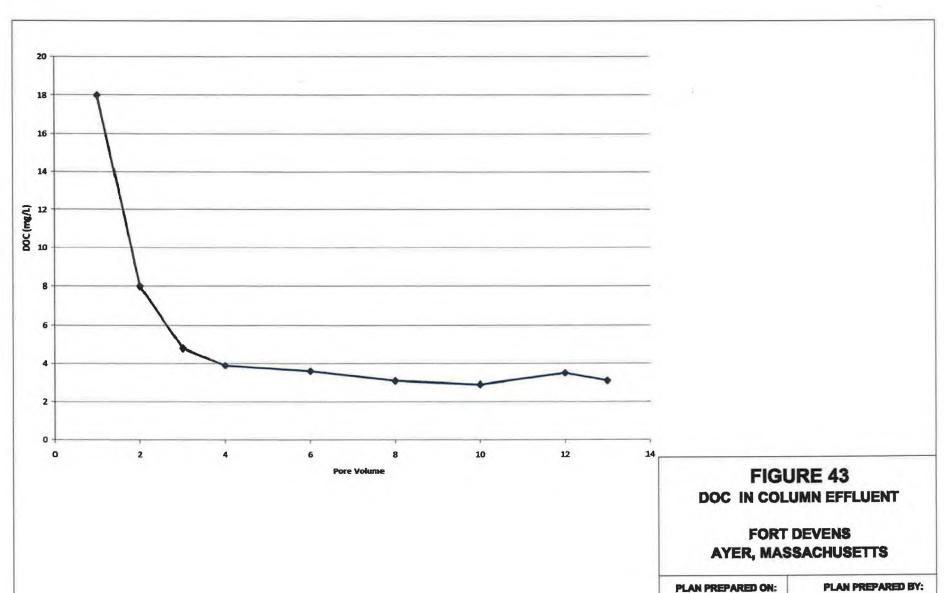


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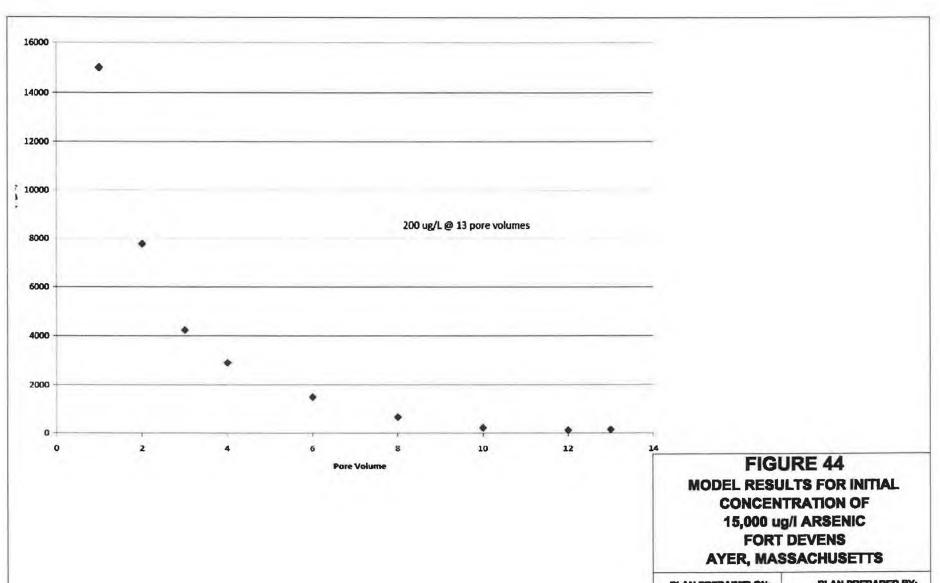


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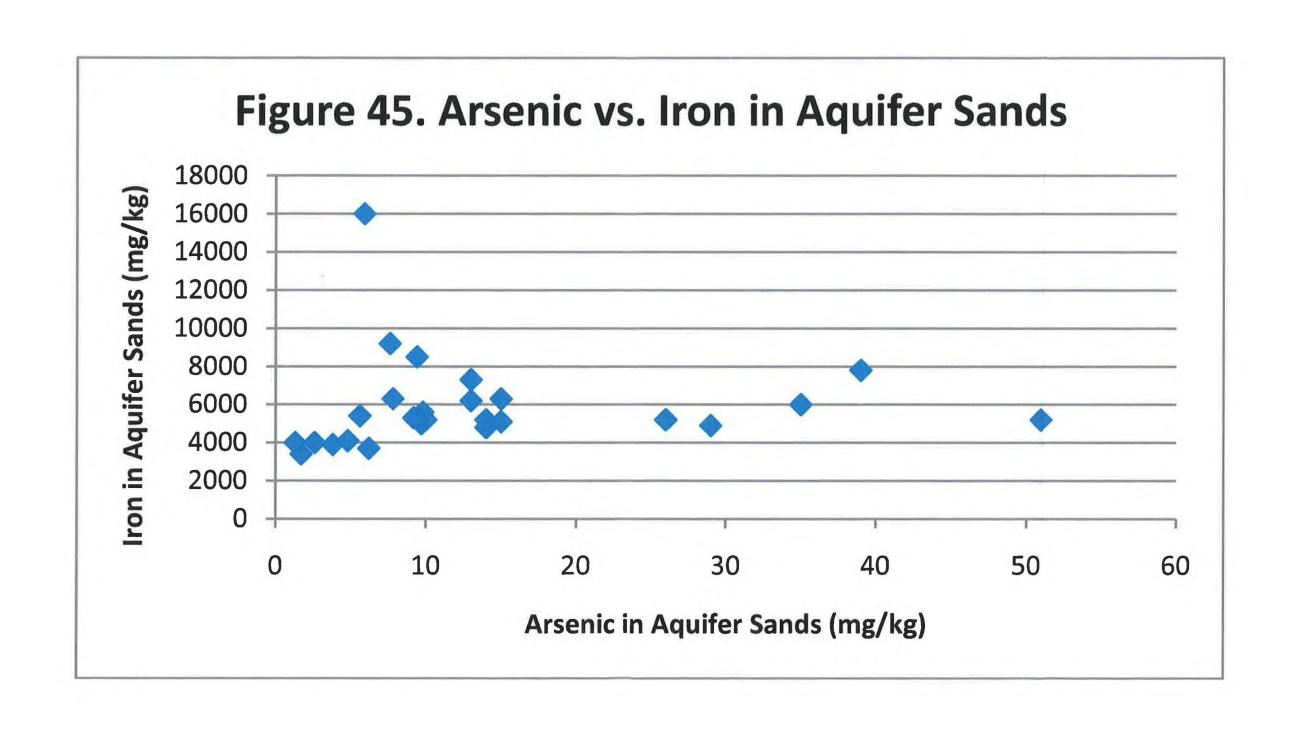
PLAN PREPARED ON: 12/1/10

PLAN PREPARED BY: WJW



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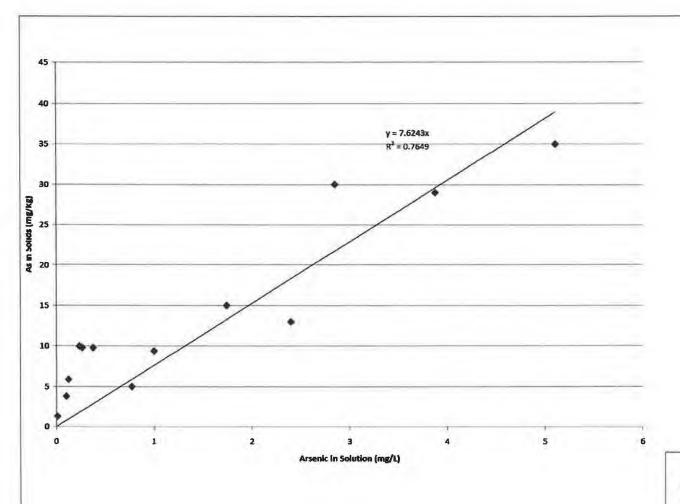


FIGURE 46 ARSENIC DISTRIBUTION IN SOLIDS VS SOLUTION (Kd=SLOPE OF LINE

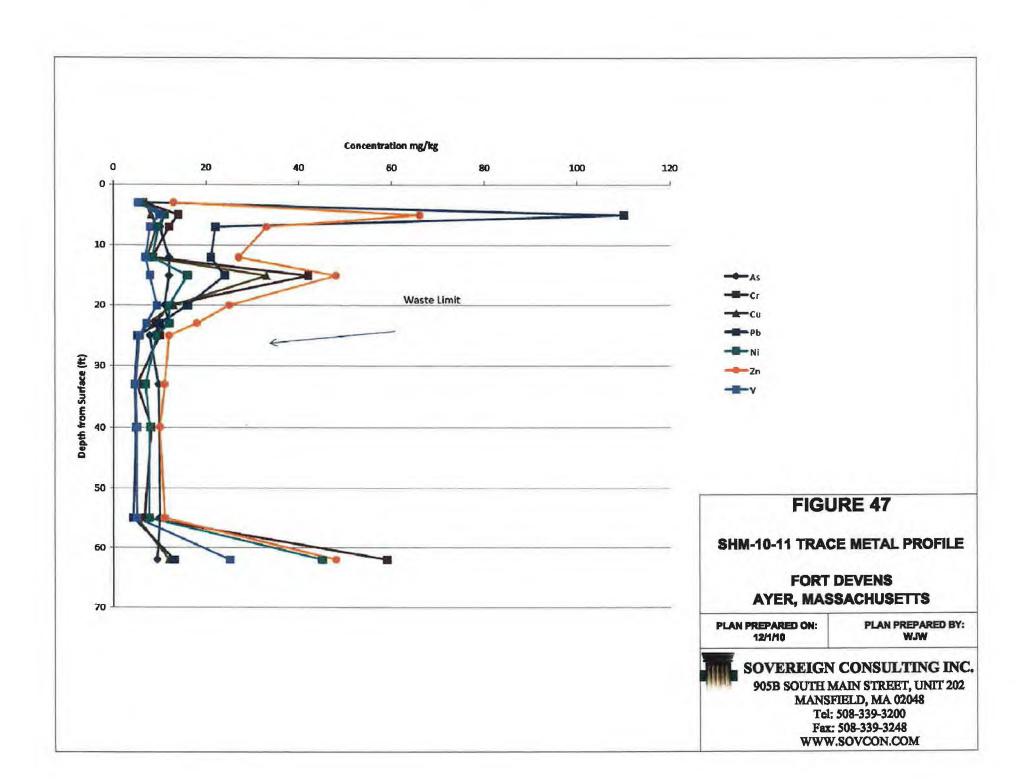
FORT DEVENS
AYER, MASSACHUSETTS

PLAN PREPARED ON: 12/1/10 PLAN PREPARED BY: WJW



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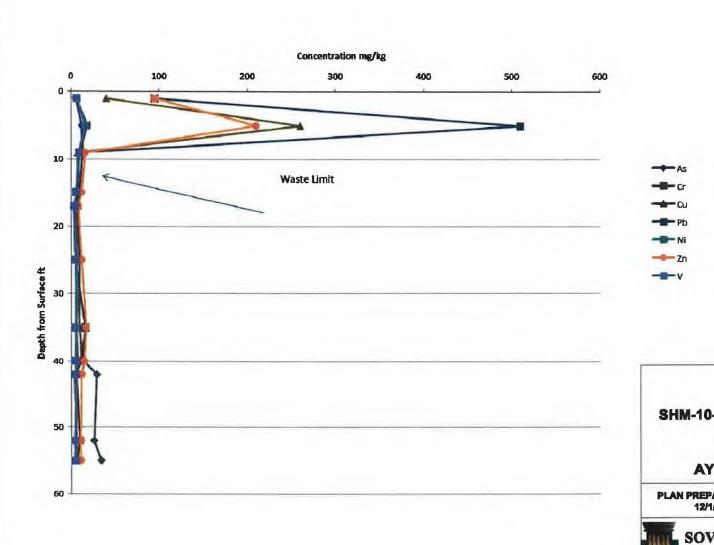


FIGURE 48

SHM-10-12 TRACE METAL PROFILE

FORT DEVENS AYER, MASSACHUSETTS

PLAN PREPARED ON: 12/1/10

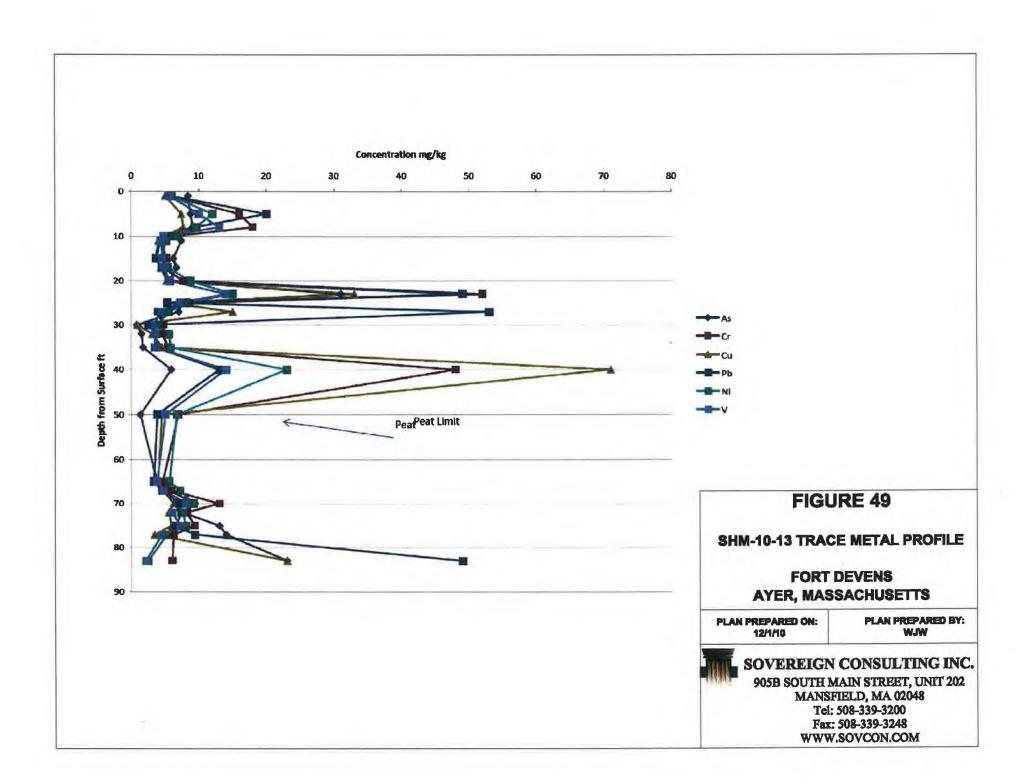
PLAN PREPARED BY: WJW

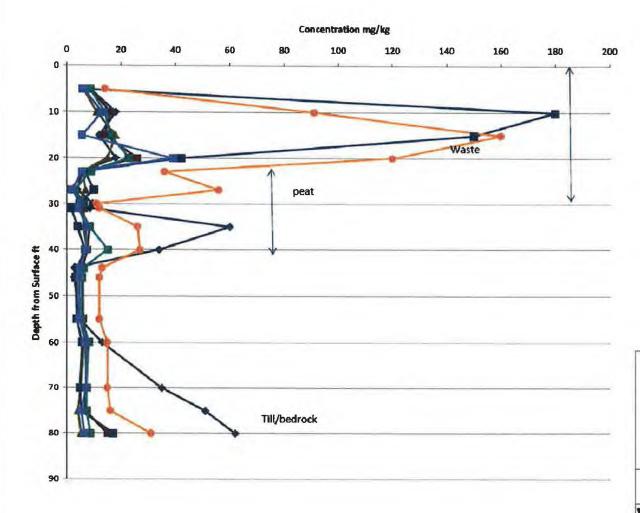


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SHM-10-14 TRACE METAL PROFILE

FORT DEVENS
AYER, MASSACHUSETTS

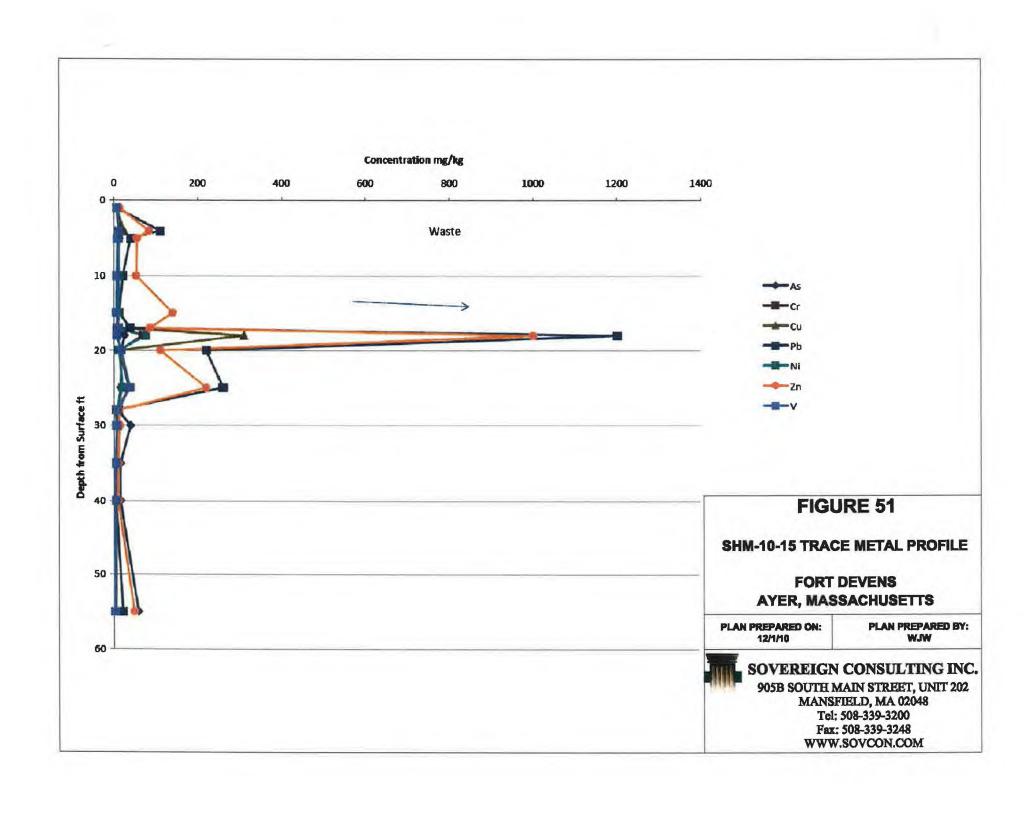
PLAN PREPARED ON: 12/1/10 PLAN PREPARED BY: WJW

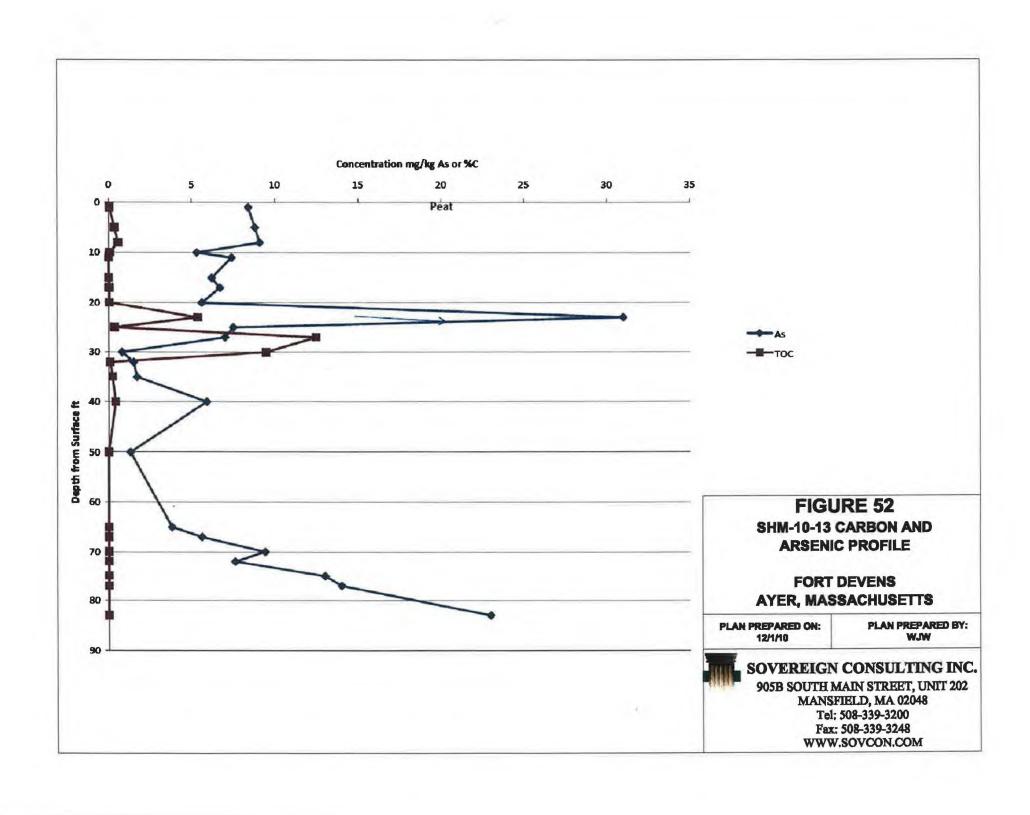


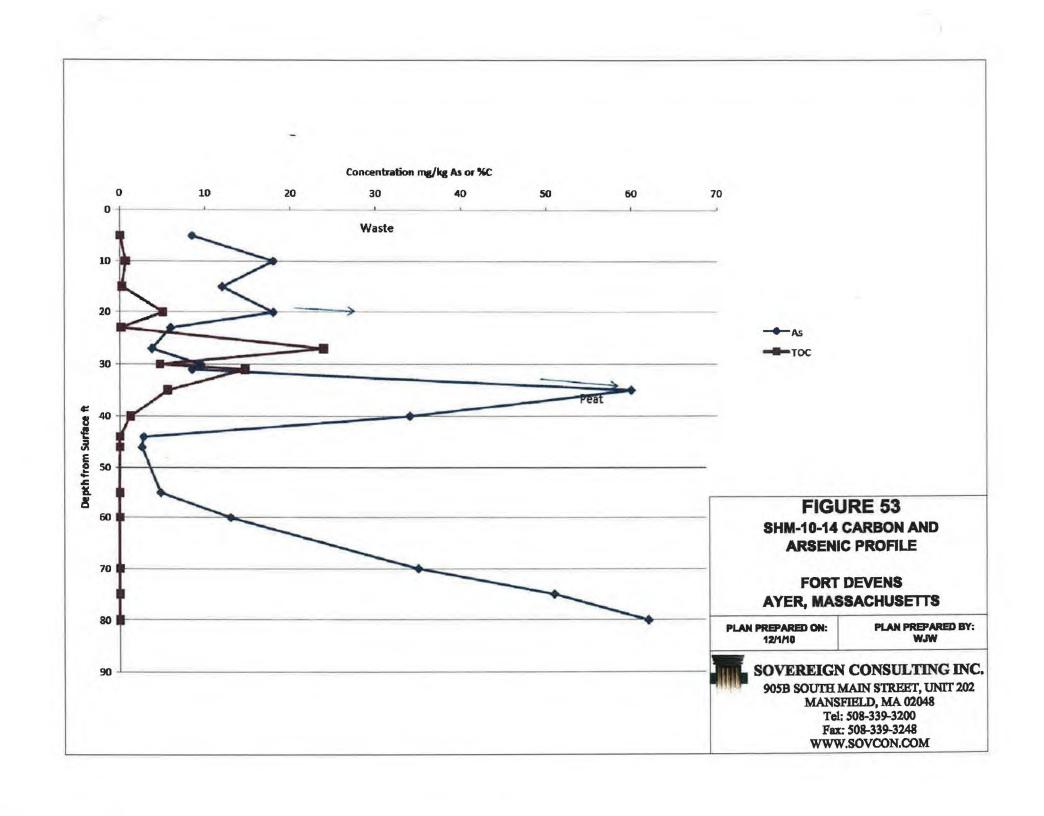
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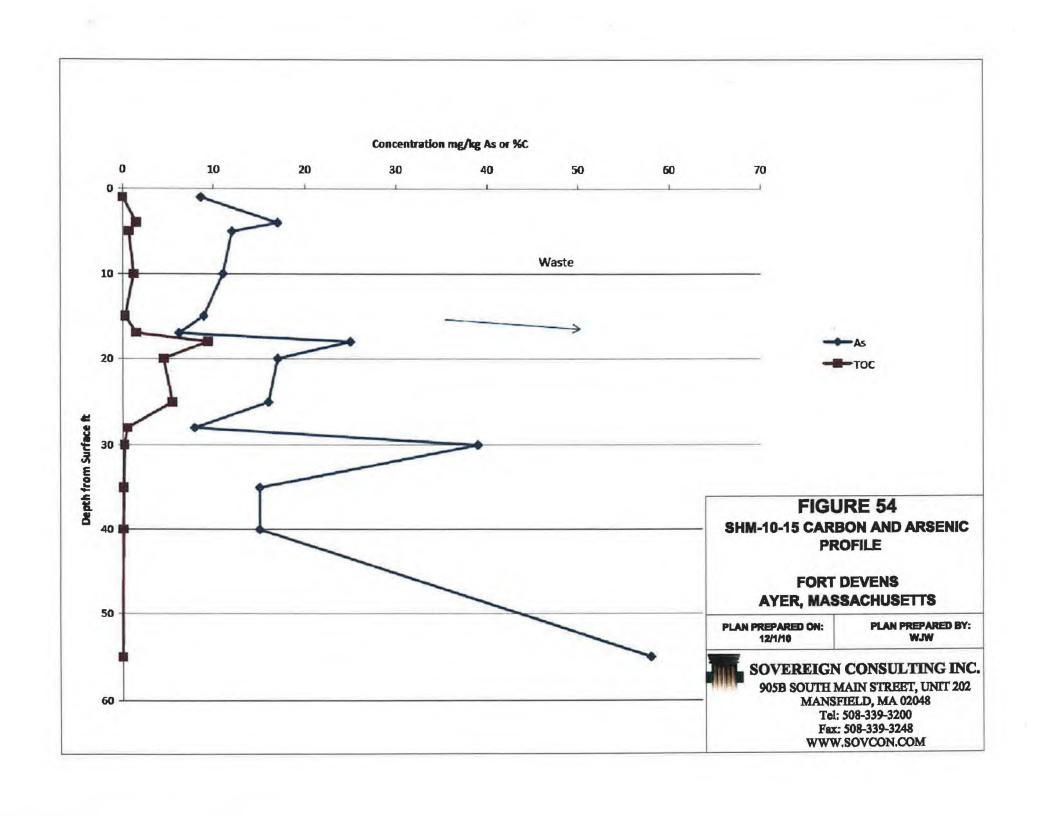
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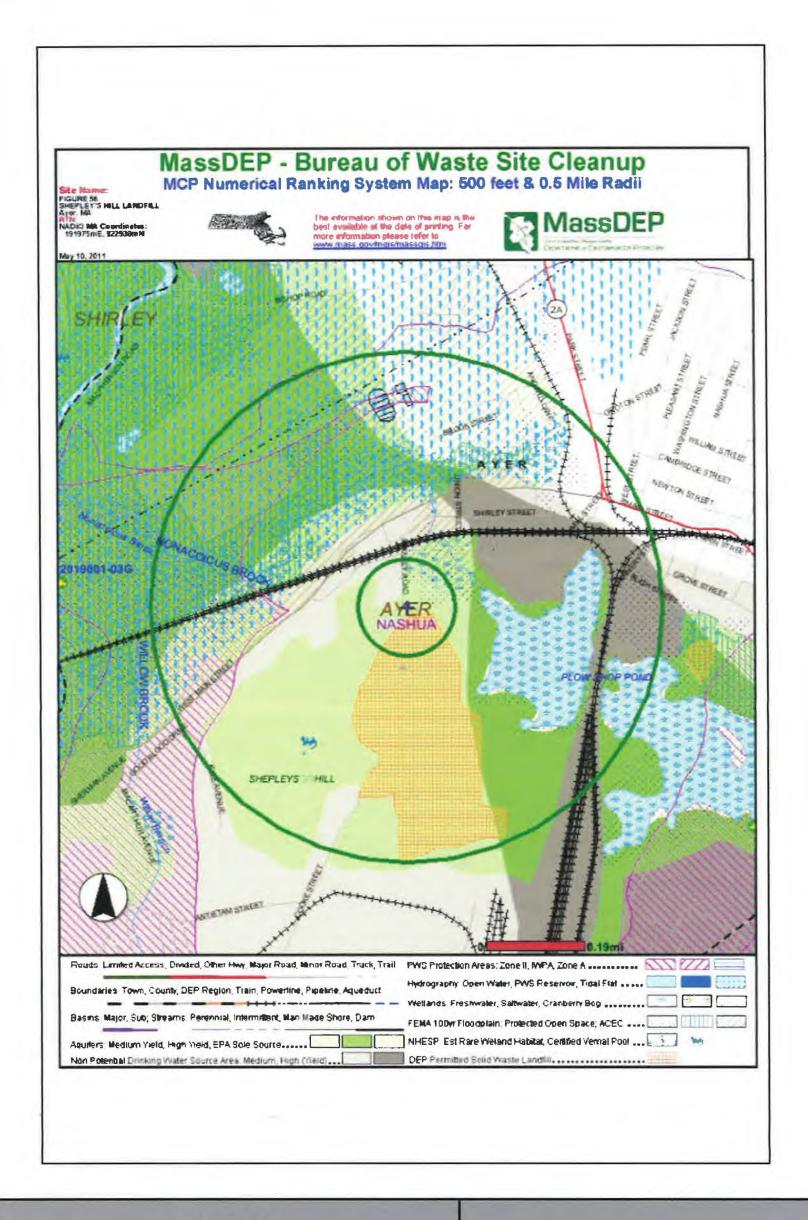


FIGURE 56 MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION PRIORITY RESOURCES (21E)

> FORT DEVENS AYER, MASSACHUSETTS



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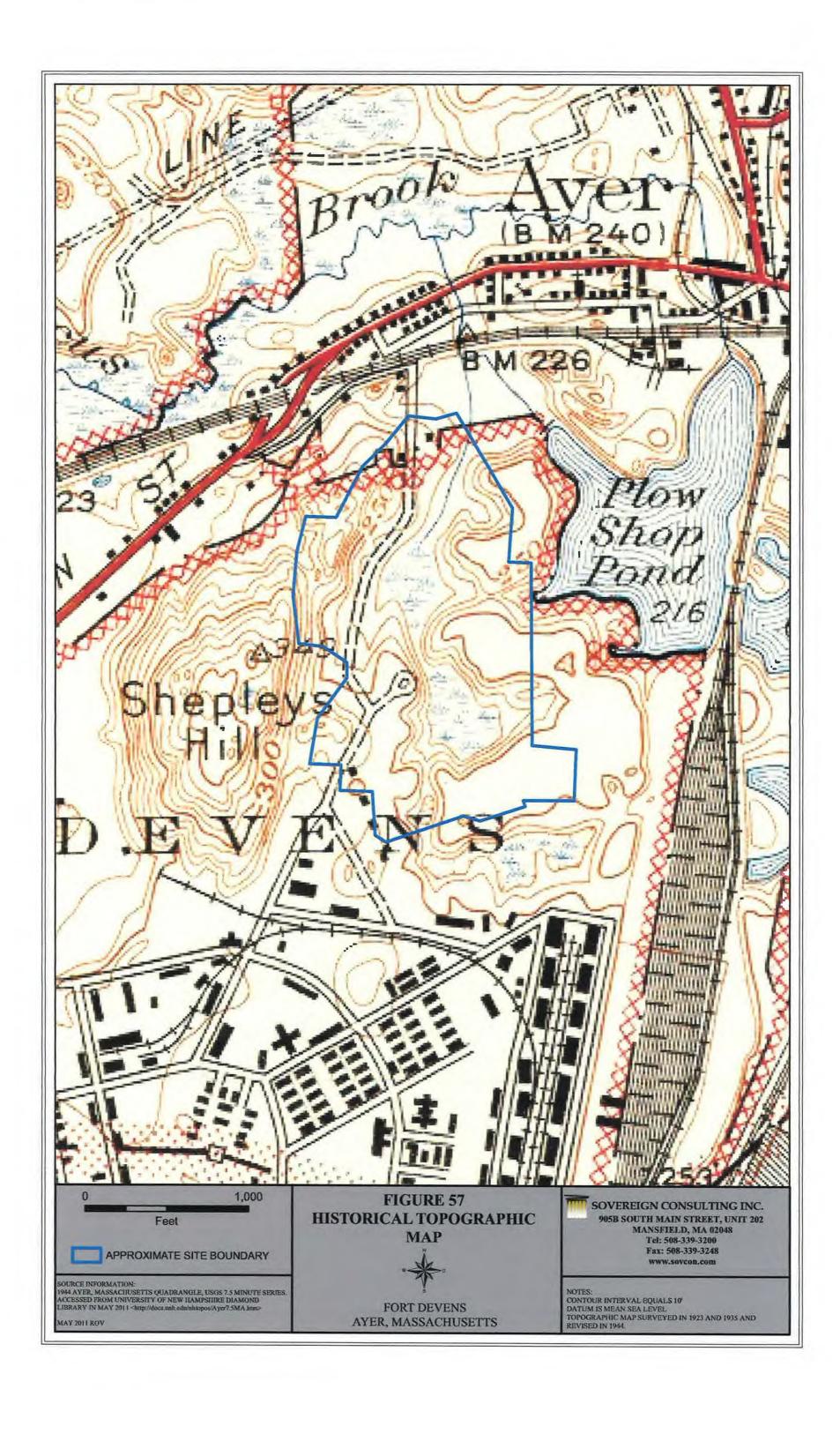


TABLE 1 Technical Objective and Approach for Data Collection Shepley's Hill Landfill, Devens, Massachusetts

Objective	Hypothesis	Data Gaps	Technical Approach
From EPA Additional Work Letter	The second secon		
North Plume Delineation & Monitoring for Impacted Area Delineate the north plume in all directions to depth in order to establish final delineated plume boundaries. Install additional monitoring wells to be incorporated into the long-term monitoring program that will ensure that there are permanent monitoring locations for all significant areas of the plume (e.g., West Main Street) and to serve as sentry wells to ensure that the plume does not migrate further beyond the final delineated plume boundaries. Incorporate these wells into a revised long-term monitoring plan.	The plume north of the capture zone has stable limits bounded by bedrock and advective flow of unimpacted or oxygenated groundwater (GW). The plume limits in the area of Mohamoo Rd are near SHM-07-03 on the west and SHM-99-32X on the east; in the area of West Main St are west of DEP-08-03 and near DEP-08-08 on the vast; and in the area of Nonacoicus Brook are southwest of DEP-08-07 (See Figure 1).	GW chemistry data above, below, and lateral to the plume in the following general areas: • West Main St west of DEP-08-03 • Nonacoicus Brook north west of DEP-08-05 and southwest of DEP-08-07 • North of the brook, NE of DEP-08-07 • East of SHX-01-06X	Install horings extending to bedrock in each area and collect GW samples at 10-ft intervals for arsenic and field parameters. Complete permanent wells based on profile results and sample twice for metals. Map plume in 3D based on the results
	- A		divine a state of the state of
2a. North Plume Capture at Boundary Operate and/or modify the treatment system to contain the assenic plume in the vicinity of the base boundary near the north end of the landfill and demonstrate that the assenic plume is captured.	The latest revised GW model and other lines of evidence as presented in the 2008 Annual Report (ECC 2009) suggest that impacted GW at the toe of the landfill is fully contained, subject to some uncertainty on the eastern plume extent at the loe	GW chemistry data east of the toe of the landfill, in the area east of SHM-96-5B.	Install boring(s) extending to bedrock and collect GW samples at 10-ft intervals for metals and field parameters. Complete permanent well(s) based on profile results and sample twice for metals.
2b. North Plume Monitored Natural Attenuation (MNA) for the Impacted Area Once capture is demonstrated, establish that monitored natural attenuation will be effective at remediating the north plume (i.e., the Impacted Area) within a timetrame that is reasonable given the circumstances of the site	MNA in the Impacted Area will be effective based on immobilization of dissolved arsenic, Effectiveness depends on: (1) demonstration of a static or shrinking plume (see objective #1); (2) determining rates and mechanisms of attenuation; (3) determining stability of immobilized arsenic; and (4) establishing a monitoring plan and contingency plans (UEFPA 2007). The time required for arsenic to be immobilized in the Impacted Area by MNA or by an aggressive remedy are both decades or longer.	Aquiter mineralogy and association of arsenic with the various solid phase components. Time to achieve MCLs due to flushing with unimpacted GW, both for MNA and aggressive (FFS Alternative 3B) scenarios.	Collect co-located soil and GW samples from the Impacted Area for clientical and microscopic-spectroscopic analysis of solids. Conduct flushing timeframe study similar to USGS Saco Landfill study; test cores of aquifer material from the Impacted Area and use reaction model to simulate immobilization.
3. Landfill Gas Impacts Complete an evaluation of landfill gas impacts in the area of the north plume (i.e., the Impacted Area) in accordance with the EPA Guidance for Evaluating Landfill Gas Entissions from Closed or Abandoned Facilities to ensure that methane emanating from the landfill will not cause unacceptable risks (i.e., explosive conditions) in nearby structures.	Results of monitoring perimeter soil gas probes at the north end of the landfill indicate that methane is not migrating offsite laterally through soil. Offsite structures in the Impacted Area north of the capture zone may have methane intrusion from groundwater if sufficient levels of methane volatilize from the top of the water table and migrate through the vadose zone.	None at this time.	Conduct vapor intrusion modeling based on conservative estimates of site conditions. Discuss results and need for site-specific measurements with BCT.
4. East Plume Delineation and Capture Eliminate the continuing discharge of high-arsenic groundwater to Plow Shop Pond sediments. It is expected that new groundwater monitoring wells, as recommended in EPA's October 2, 2008 letter and in Section 5.3 of ORD's Final Report, will be completed and data from these wells will be considered in this effort.	Discharge of shallow arsenic impacted groundwater from the eastern portion of the landfill to Red Cove may be controlled using GW injection, extraction, or in-situ treatment.	Arsenic GW concentrations and flow rates between 5HL and Red Cove.	Update GW model based on pond flux measurements and use model for citing wells upgradient of Red Cove. Install borings extending to bedrock and collect GW samples at 10-ft intervals for metals and field parameters. Complete permanent well(s) based on profile results and sample twice for metals.
From 9/30/09 Draft FFS:			
5. Arsenic Source Strength Estimate the arsenic source strength and duration, including the quantity of arsenic that may be mobilized and the strength and duration of sources of reducing conditions.	Potential sources of arsenic in groundwater include bedrock, bedrock-derived soils, and landfill wastes, which are located above and below the water table. Arsenic is dissolved from the source materials by landfill-induced reducing conditions in groundwater. A portion of the landfill overlies a swamp where naturally-occurring reducing conditions may also have existed.	Aquifer mineralogy and association of arsenic with the various solid phase components. Time to deplete source materials due to mobilization.	Collect co-located solid and GW samples from source materials for chemical and microscopic-spectroscopic analysis of solids. Conduct flushing timeframe study, test cores of source material using reduced groundwater to simulate mobilization of metals.

Objective	Hypothesis	Data Gaps	Technical Approach
6. Air Sparging Feasibility Evaluate implementability of a horizontal sparging well installation (FFS Alternative 4) based on geologic conditions and arsenic distribution.	Air sparging may be feasible for immobilization of arsenic in groundwater flow from the landfill eastward into Red Cove.	Treatment system configuration and impacts of immobilized metals on local GW flow.	Develop a pilot test of air sparging between the landtill and Red Cove.
7. Flor Removal Feasibility Evaluate implementability, conceptual design, and costs of flor removal in Red Cove (FFS Alternative 2).	Arsenic-bearing floc accumulating in Red Cove sediments may be removed or sequestered to reduce risks to ecological receptors. The FFS alternative incorporating this remedy assumes that the source of floc is continuing.	None at this time.	Evaluate floc removal remedies in the AOC 72 FSSR
8. Landfill Consolidation Feasibility Evaluate implementability of onsite waste management for landfill consolidation (FFS Alternative 5) hased on waste volumes and footprint.	Landfill wastes may be removed from below the water table and the landfill reconstructed and lined to eliminate leaching to groundwater. This FES alternative assumes that wastes would be relocated within the existing landfill footprint.	None at this time.	Map current waste extent based on photos, maps, and boring logs. Complete a conceptual design for the reconstructed landfill, including construction and waste management methods, sufficient for estimating costs to -30/+50% accuracy.
From Modified Workplan (MNA/SS Evaluation)			
2.3 North Plume Monitored Natural Attenuation (MNA) for the Impacted Area. Once capture is demonstrated, establish that monitored natural attenuation will be effective at remediating the north plume (i.e., the Impacted Area) within a timeframe that is reasonable given the circumstances of the site	MNA in the Impacted Area will be effective based on immobilization of dissolved arsenic. Effectiveness depends on: (1) demonstration of a static or shrinking plume (see objective #1); (2) determining rates and mechanisms of attenuation; (3) determining stability of immobilized arsenic; and (4) establishing a monitoring plan and contingency plans (USEPA 2007).	The time to achieve MCLs or an achievable background level by aquifer flushing with upgradient groundwater, for both for MNA and more aggressive alternative scenarios (FFS3B). The time required to deplete the landfill's ability to maintain reducing conditions resulting in trace element mobilization, and time required to meet background conditions or pre-landfill conditions.	Based on data collected to date and Tier 1 through Tier 4 elements needed to assess important MNA components, additional site data is required for: • Plume Stability; • Plume Extent and Redox Front • Impact of Current Remediation; • Fate and Transport; To address these criterion the following is proposed:
			Task 2.3 Evaluation of MNA Task 2.3.1 Plume Stability Additional data for plume stability will be collected under Task 2.3.2 Task 2.3.2 Redox Boundary Analyze existing data Advance DPT, well points in this area as deemed necessary to supplement existing delineation work being performed Identify changes in DO, Eh (or ORP) Identify changes in total and dissolved iron and total and dissolved arsenic, TSS and DOC
			Evaluate redox front between plume and Brook Task 2.3.3 Impact of Current Remediation Additional data for effect of remediation collected under Task 1.4 and Task 1.2 Task 2.3.4 Fate and Transport Data Analysis Analyze data from the plume delineation work, the geophysical survey and the transect wells to determine redox boundary and arsenic geochemistry Determine arsenic fate in plume using transect well data and geochemical modeling

Objective	Hypothesis	Data Gaps	Technical Approach
2.3 North Plume Monitored Natural Attenuation (MNA) for the Impacted Area - Continued			Monitor for changes in redox, arsenic, iron, DOC, TSS and changes in water composition such as increase in sulfate or alkalinity. Conduct column studies for flushing time to background and determination of aquifer capacity for adsorbing arsenic. Conduct flushing timeframe study similar to USGS Saco Landfill study. Test cores of aquifer material from the Impacted Area and Use reaction model to simulate immobilization. Groundwater sampling Collection of groundwater from monitoring wells planned for the transect study
	P I SP P TYPE N I P TY		Task 2.3.5 Data Analysis Analyze data, estimate arsenic uptake and based on results, redefine scope or sampling Conduct geochemical speciation calculations, modeling and statistical analysis
2.6 SourceStrength/Landfill Reducing Environment Evaluation Estimate the duration of the landfill's ability to maintain reducing / methanogenic conditions.	Arsenic, iron and other constituents are dissolved from the source materials by landfill-induced reducing conditions in groundwater. A portion of the landfill overlies a swamp where naturally-occurring reducing conditions may also have existed. While potential sources of arsenic in groundwater include bedrock, bedrock-derived soils, and possibly landfill wastes, the ultimate control is the ability of the landfill to maintain reducing conditions. Arsenic and other redox sensitive species will continue to mobilize as long as reducing conditions prevail. What time frame for achieving this is reasonable?	The time required to deplete the landfill's ability to maintain reducing conditions resulting in trace element mobilization, and time required to meet background conditions or pre-landfill conditions	Task 2.6 Examination of Source Strength Determine impact of landfill as a carbon source Task 2.6.1 Vertical profiling of the landfill Five (5) test locations in landfill to bedrock. Co-located depth sampling of water Waste and Aquifer Solids Sampling: The focus of the sampling will be on profiling TOC, DOC, DIC in the landfill. As long as strongly reducing conditions exist, arsenic will continue to enter groundwater: Collection of discrete samples from the waste and aquifer Collection of sands overlying bedrock Collection of the upper 5 ft of bedrock and weathered bedrock Sample analysis Water samples will be collected from the proposed borings. Testing will include typical field parameters (Eh, DO, Turbidity, Conductivity) Total and dissolved TAL metals, TOC, DOC, DIC, and TSS Waste samples and underlying sands and bedrock will be analyzed for Total metal(loid)s (TAL), TOC, X-ray Diffraction (XRD) for common mineralogy, Sequential Extraction, Thinsection/XRD/scanning electron microscopy for identification of arsenic and metal bearing phases.

Objective	Hypothesis	Data Gaps	Technical Approach
2.6 SourceStrength/Landfill Reducing Environment			Task 2.6.2 Conduct Bench Testing
Evaluation - Continued			Test cores of source material and groundwater to simulate mobilization degradation of carbon and effect on trace elements, especially arsenic.
			Task 2.6.3 Data Analysis and Reporting Estimation of time to depletion via carbon content (TOC, DOC, & DIC)
	+		Vertical profiling of solids and water co-collected to determine relative sources of analytes to the plume
			Estimation of degradation rate and time to "completion" Speciation calculations and reactive transport modeling

TABLE 2 Groundwater Profile Results Shepley's Hill Landfill, Devens, MA

						Arsenic		Ca	leium		ron	Mag	nesium	Man	ganese
Boring			Time		Total	Dissolved	Field Kit	Tutal	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Lucation	Sample 1D	Date	(Military Format)	Depth	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L.)
GP-10-01	GP-10-01-009	5/27/2010	10;00	9	0,48.1	0.31	<5	NA.	10.400	NA	827	NA	1.380	NA:	21.6
	GP-10-01-019	5/27/2010	10:35	19	4.61	0.32.1	<5	NA	12.400	NA	548	NA.	1.430	NA	49.7
	GDUP-052710	5/27/2010	10:35	19	NA	0.27.)	NA.	NA.	12.700	NA	525	NA	1,440	NΛ	45.5
	GP-10-01-029	5/27/2010	11:20	29	11.4	0.31 J	5	NA	10,600	NA	549	NA.	1,170	NA	196
	GP-10-01-039	5/27/2010	11:45	39	9.39	< 1.13	4	NA	49,000	NA	1,860	NΛ	4,670	NΛ	14.000
	GP-10-01-049	5/27/2010	12:30	40	7.39	< 1.13	5	NA	15.300	NΛ	863	NA.	1.480	NA	6,450
	GP-10-01-059	5/27/2010	13:11	59	18.9	< 1.13	- 3	NA	34,600	NA	2,150	NA.	3,040	NA T	12.100
	GP-10-01-069	5/27/2010	15:20	69	11.3	0.971		NA	39,900	NA	4,000	NA.	4,300	NA.	3.570
	GP-10-01-075	5/27/2010	16:30	75	2.35	0.89.1	5	NA.	26.400	NA NA	6,380	NA	3.870	NA	3.310
GP-10-02	GP-10-02-024	6/7/2010	9:30	24	0.41 J	0.37 J	<5	NA	90,800	NA	1,130	NA.	13,100	NA	560
	GP-10-02-034	6/7/2010	10:42	34	0.67	0.33.1	₹5	NA	105,000	NA	1,560	NA	15,500	NA	1,440
	GDUP-060710	6/7/2010	10:42	34	NA	< 0.226	NA	NA	102,000	NA	1,520	NA.	14,800	NA	1.380
	GP-10-02-044	6/7/2010	11:35	44	1.64	0.74.0	-3	NA.	113.000	NA	2,140	NA	15,500	NA	2,060
	GP-10-02-054	6/7/2010	12:27	54	2.43	0.41 J	. <5.	NA s	107,000	NA.	2,150	NA	14,800		.2,200
3 11 3 3	GP-10-02-064	6/7/2010	13:08	64	5.87	0.41 J	<5	NA.	110,000	NA	3,500	NA.	15,000		1,990
	GP-10-02-074	6/7/2010	15:05	74	36.9	0.87 J	<5	NA NA	252,000	NA	4,010	NA	34,300	NA.	2,910
	GP-10-02-084	6/7/2010	18:12	84	24.8	4.64	<5	NA NA	288.000	NA NA	19,600	NA	38,700		2,680
	GP-10-02-094	6/8/2010	9:25	94	127	0.61 J	<5	NA NA	229,000	NA	4,640	NA.	29,300	1.0000000000000000000000000000000000000	3.100
	GP-10-02-102	6/8/2010	10:10	102	84.6	8,68	3	NA NA	249,000	NA NA	25,300	NA.	34,600	NA.	1.270
GP-10-03	GP-10-03-029	6/10/2010	08:25	29	0.89	0,5	<5	NA	27400 J	NA	582	NA	3,580	NA	71
	GP-10-03-039	6/10/2010	9:20	39	6.79	0.613	<3	NA	76,800	NA	704	NΛ	9,840	A. S.	59.8
	GDUP-061010	6/10/2010	9:20	39	NA NA	< 0.452	NA	NA.	83.800	NA	790	. NA	10,900	100 TO 10	68.4
	GP-10-03-049	6/10/2010	10:00	49	14.6	< 0.565	<5	NA	110,000	NA	1,580	NA	12.900		62.9
	GP-10-03-059	6/10/2010	10(40	59	42.1	0.92.1	<5	NA	103,000	NA	5,210	NΛ	11,400	The Second Conference of the C	254
	GP=10=03=060	(c/10/2010	11.20	0.0	8-1	3.12	3	27	224 000	3/1	2,530	12	29,200		633
	GDUP2-061010	6/10/2010	11/20	60	NA.	3.85	NA	NΛ	252,000	NA	8,210	NA	32,700		710
210 10 02	The second second second	1 2 2 2 2									300		1	12.5	
GP-10-04	GP-10-04-014	6/8/2010	12:40	14	2.26	0.18.1	<5	NA	2,200	NA	1170	NA	316	100000	210
	GP-10-04-024	6/8/2010	14:00	24	2.19	0.18-1	35	NΛ	2,100	NA	256	NA	218		58.1
	GDUP-060810	6/8/2010	1.4:00	24	NA	0.16.1	NA.	NA NA	2,240	NA	199	NA.	218		63
	GP-10-04-034	6/8/2010	14:50	34	1,22	0.18.1	<3	NA.	3,670	NA	438	NA	533		84.4
	GP-10-04-044	6/8/2010	15:10	44	3.37	0.153	<5	NA	19,000	NA	629	NA	2,020		86.6
	GP-10-04-054	6/8/2010	15:50	54	13.7	0.26 J	<5	NA .	57,400	NA	3,040	NA	14,500		811
	GP-10-04-064	6/8/2010	15:25	64	8.02	0.33.1	<5	NA	75,300	NA.	1,200	NA	12,600		510
	GP-10-04-074	6/8/2010	17:15	74	24.3	0.33 1	<5	NA	19,400	NA	3,000	NA	2,470	NA NA	433
	GP-10-04-084	6/8/2010	17:50	84	26.7	1.27	<5	NA	5,640	NA	896	NA :	740	NA.	91.4
	GP-10-04-094	6/8/2010	18:30	94	214	15.1	10-20	NA	154,000	NA.	3,630	NA	20,300	NA	3,170
GP-10-05	GP-10-05-015	6/9/2010	9:50	15	2.08	0.315	<5	NA	7540 J	NA.	262	NA	1,090	NA	483
	GP-10-05-025	6/9/2010	10:25	25	1.02 J	0.58.1	<5	NA	17,000	'NA	1150	NA	2,590	NA	11,200
	GDUP-060910	6/9/2010	10;25	25	NA.	< 0.565	NA	NA	16,800	NA	572	NA	2,600	NA	11,200
	GP-10-05-035	6/9/2010	10:53	35	130	112	150	NA	12,400	NA	12,600	NA	2,260	NA	4,610
	GP-10-05-045	6/9/2010	11:24	45	86.4	84.7	80-100	NA	18,800	NA	11,200	NA	2,550	NA	2,320
GP-10-05A	GP-10-05A-029	6/9/2010	13:20	29	0.93	0.62.1	<5	NA	8,140	NA	604	NA	878	NA	63.8
	GP-10-05A-039	6/9/2010	14:05	39	13	0.35 1	<5	NA	13,600	NA	2,310	NA	2,810	NA.	221
	GDUP2-060910	6/9/2010	14:05	39	NA.	0.33 J	NA	NA	13,900	NA	2,510	NA	2,850	NA.	237
	GP-10-05A-049	6/9/2010	14:55	49	4.86	1.12	<5	NA	16,400	NA	3,360	NA	1,990	NA.	203
	GP-10-05A-059	6/9/2010	15;57	59	3,48	0.39 J	<5	NA	17,700	NA	1,840	NA	2,050	NA	214
	GP-10-05A-069	6/9/2010	17:15	69	29,8	0.59	<5	NA	19,400	NA.	797	NA	2,340	NA	466
	GP-10-05A-079	6/9/2010	18:45	79	65	2.18	<5	NA	16,500	NA	57.9	NA	1,940	NA	114
	GP-10-05A-089	6/9/2010	19:20	89	24.5	5.09	<5	NA	20,000	NA	467	NA	1,990	NA N	70.3
	GP-10-05A-099	6/9/2010	19:40	99	364	4.16	<5	NA	65,800	NA	558	NA	5,740		294
	GP-10-05A-109	6/9/2010	20:10	109	911	1.92	<5	NA	111,000	NA	3,730	NA	13,500		1,320
						1,77			1,000				11/35		

TABLE 2 Groundwater Profile Results Shepley's Hill Landfill, Devens, MA

2000			100.1			Arsenic		Cal	cium	1	ron	Mag	nesium	Man	ganese
Boring Location	Sample ID	Date	Time (Military Format)	Depth	Total (ug/L)	Dissolved (ug/L)	Field Kit (ug/L)	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
GP-10-06	GP-10-06-024	5/24/2010	11:50	24				(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/1.)
01-10-00	GP-10-06-034	5/24/2010	the little to the Administration of the Committee of the	The second second second	.17.2	10	10	NA	3,100	NA.	641	NΛ	274	NA	112
			12:40	34	120	121	150-200	NA	14.900	NA	14400 J	NA	1.480	NA	763
	GP-10-06-044	5/24/2010	13:35	44	155	129	100	NA	18,300	NA	34.400	NA	1.480	NA	982
	GP-10-06-054	5/26/2010	8:50	54	67.5	42.9	.5	NA	80.700	NA	75.400	NA.	10,800	NA	3,000
	GDUP-052610	5/26/2010	8:50	54	NA	49.1	NA	NA	87.800	NA	82.000	NA	11,400	NA	3.250
	GP-10-06-064	5/26/2010	9:45	64	683	750	150	NA	65,700	NA	122,000	NΛ	9,540	NA	2,840
	GP-10-06-074	5/26/2010	11:15	74	2.390	2070	>500	NA	53,400	NA.	107,000	NA	10,100	NA	2,470
	GP-10-06-079	5/26/2010	12:00	79_	2.660	2540	>500	NA NA	56,600	N/A	72,200	NA	(0.700	NA	3,490
GP-10-06A	GP-10-06A-034	5/24/2010	15:15	34	0.59	0.37 J	0	NΛ	2.830	NΛ	66.4	NΛ	398	NΛ	43.2
	GP-10-06A-044	5/24/2010	16:00	44	595	55.1	40	NA	9.030	NA	9,710	NA	737 J	NA	2.370
	GP-10-06A-054	5/24/2010	17:40	54	1090	18	10	NA	26,300	NA	6,550	NA	1,930	NA	6.920
	GP-10-06A-064	5/25/2010	9:50	64	170	36.7	20	NA	18,400	NA	28.900	NA	2,380	NA	2.780
	GDUP-052510	5/25/2010	9:50	64	NA	31,4	NA	NA	18,000	NA.	28,900	NA.	2,360	NA	1.00
	GP-10-06A-074	5/25/2010	11:10	74 -	- 134 -	58.6	30-40	NA .	26,500	NA.	42,200	· NA	2,990		2,830
	GP-10-06A-084	5/25/2010	13:00	84	186	106	60	NA _	27,500	NA.	42,200	NA NA	4,080	- NA -	2,460
1.4.	GP-10-06A-094	5/25/2010	14:40	94	382	< 1.13	5 .	NA	73,700	NA NA	13,300	NA NA	10,200	NA NA	3,050
	GP-10-06A-104	5/25/2010	16:30	104	405	< 1.13	0	NA	97.900	NA.	5,950	NA.	12,800	200	17,900
	GP-10-06A-110	5/25/2010	17:35	110	333	1.17 J	20	NA	96,800	NA NA	8,640	NA NA	13,200	NA NA	6.530
GP-10-07	GP-10-07-039	5/19/2010	14:00	39	1,240	1350	>500	57,400	62.800						
	GP-10-07-049	5/20/2010	13:45	49	283	58	5-10	135,000	65100 J	96.400 251000	105,000	8.250	9,080	2,430	2.660
	GPDUP-052010	5/20/2010	13:45	49	304	58.2	5-10	129,000	64,600	276000	27800 J	49900 1	11.000	9140 J	.5330 J
GP-10-08	GP-10-08-011	a joy resident							100000	270000	26,800	114000	10,900	9200	5.250
GF-10-08	GP-10-08-011 GDUP-060310	6/3/2010	12:10	11	2.08	0.64	<5	NA	24.600	NA	581	NA	3,440	NA	70.7
	200000000000000000000000000000000000000	6/3/2010	12:10	11	NΛ	0.67	NA	NΛ	23.500	NA	565	NA	3.310	NA	69.7
	GP-10-08-021	6/3/2010	1,3-20	21	3.10	0.76	5	NA	44,200	N.A.	679	N١	6.040	NA	199
	GP-10-08-031	6.3,2010	14.30	31	3.6	0.31 J	-5	NΛ	109 000	NA	2,040	NA.	13,200	NA	2.340
	GP-10-08-041	6.3.2010	15:00	41	3.77	0.85 J	*5	NA	131,000	NA	2.090	N:1	15,000	NI	0.40
	GP-10-08-051	6/3/2010	17:20	51	19.8	1.06	<5	NA.	172,000	NA	3,300	NA	23.000	NA	777
	GDUP2-060310	6/3/2010	17:20	51	NA	0.92 J	NA	NA	172,000	NA	3.180	NA	23.300	NA.	769
	GP-10-08-061	6/3/2010	18:05	61	2.07	0.73 J	<5	NA	142,000	NΛ	4,710	NΛ	18,500	NA	1.060
GP-10-09	GP-10-09-021	5/28/2010	9:15	21	0.45 J	0.27 J	<5	NA	4,780	NA	88.3	NA	400	NA	34.6
	GP-10-09-031	5/28/2010	10:00	31	183	0.15 J	<5	NA	10,100	NA	685	NA	895	NA	82.2
	GDUP-052810	5/28/2010	10:00	31	NA	0.17 J	NA	NA	10.700	NA	778	NA	944	NA	102
	GP-10-09-041	6/1/2010	11:30	41	12.6	0.25 J	<5	NA	17,700	NA	853	NA	1,860	NA	66
	GP-10-09-051	6/1/2010	13:00	51	13	0.27 J	<5	NA	23,500	NA	1,760	NA	2,390	NA	138
	GDUP-060110	6/1/2010	13:00	51	NA	0.23 J	NA	NA	22,300	NA	1,580	NA	2,280	NA	136
	GP-10-09-061	6/1/2010	14:20	61	6.8	0.940	<5	NA.	43,800	NA	2,200	NA	5,370	NA	362
	GP-10-09-071	6/1/2010	16:45	71	23.3	0.680	<5	NA	47,200	NA NA	2,070	NA	5,680	NA NA	349
	GP-10-09-081	6/1/2010	17:50	81	15.5	0.850	<5	NA	44,000	NA	3,430	NA	5,300	NA NA	382
GP-10-10	GP-10-10-011	6/2/2010	14:45	- 11	0.34.)	0,27 J	<5	NA	8360 J				A CANADA PAR		
312 80 80	GP-10-10-021	6/2/2010	16:00	21	1.59	0.27 J	<5	NA NA	16.200	NA	332	NA	1,210	NA.	34.5
	GDUP-060210	6/2/2010	16:00	21	NA NA	0,22 J	NA NA	NA NA	16,200	NA.	728	NA	1,780	NA	56.5
	GP-10-10-031	6/2/2010	16:30	31	1.29 J	< 0.565	<5	NA NA	2.08.0000	NA	732	NA	1,770	NA.	58.2
	GP-10-10-041	6/2/2010	17:15	41	1.86 J	1.13 J	8.0	077.4	19.300	NA	818	NA	2,260	NA	4.370
	GP-10-10-051	6/2/2010	18:00	51	4.4 J	2.47 J	<5	NA NA	33,600	NA	2,720	NA	4,950	NA	10,800
	GP-10-10-061	6/2/2010	19:00	61	7 - 8	U 25 25 25 25 25 25 25 25 25 25 25 25 25	<5	NA	72,900	NA	3,690	NA	10,800	NA	14,300
	GP-10-10-001	6/3/2010	10:00	71	11.1	< 2.82	<5	NA	113,000	NA	5,230	NA	14,600	NA	30,700
	31-10-10-071	0/3/2010	10.00	/1	13.7	< 1.13	<5	NA	105000 J	NA	4,880	NA	14,900	NA	15,500

ug/L is micrograms per liter mg/l - miligrams per liter

I means estimated results

B indicates that analyte was detected in the associated method blank

TABLE 2 Groundwater Profile Results Shepley's Hill Landfill, Devens, MA

					Pot	asium	Sod	lum							
Boring Location	Sample 1D	Date	Time (Military Format)	Depth	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Turbidity NTU	DO mg/L	pH	Lemp Celeius	Spec Cond uS/em	ORP mV	Color
GP-10-01	GP-10-01-009	5/27/2010	10:00	9	NA	2,310	NA	35,500	10	5,34	6.35	10.08	265	107	Clear
	GP-10-01-019	5/27/2010	10:35	19	NA.	2,740	NA	60,100	90	2.61	5.99	11.36	401		Clear
	GDUP-052710	5/27/2010	(0:35	19	NA.	3,770	NA	59,800			200	77.25			1,000
	GP-10-01-029	5/27/2010	11:20	29	NA.	2,730	NA	64,500	230	4.49	6.08	11.07	385	83.3	Cloudy
	GP-10-01-039	5/27/2010	11:45	39	NA.	4,610	NA	53,800	80	- 1 A A A A A	0.08	1,2000	671		Clear
	GP-10-01-049	5/27/2010	12:30	49	NA.	2,420	NA .	19,600	65	0,37	6.38	12.46	218		Clem
	and the best of the second	Redikumberen (h. C.)	(with a transfer or and a	Control of Control	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CONTRACTOR AND A							-		-
	GP-10-01-059	5/27/2010	13:11	59	NA	2.490	NA	11,200	170	0,23	6.25	11.68	307		Clear
	GP-10-01-069	5/27/2010	15:20	- 69	NA.	3.240	NA	20,000	2000	0.35	6.19	12.36	195	The state of the state of	t loudy
	GP-10-01-075	5/27/2010	16:30	75	NA	3,750	NA	48,100	33	1.9	6.54	14.4	469	63.8	Clear
GP-10-02	GP-10-02-024	6/7/2010	9:50	24	NA.	3,760	NA	45,400	2.8	0.41	6,29	11.08	776	24.3	Clear
	GP-10-02-034	6/7/2010	10:42	34	NA:	4,320	NA	48,800	13.4	0.29	6.39	11.48	818	14.6	
	GDUP-060710	6/7/2010	10:42	34	NA:	4,060	NA:	46.300							
	GP-10-02-044	6/7/2010	11:35	44	NA.	4,640	NA.	58,700	46.1	0.28	0.40	(1,27	777	11.3	
	GP-10-02-054	6/7/2010	: 12:27	54	NA	4,170	NA	52,900	85,7	0.29	6.5	12.09	. 757	2.6	
	GP-10-02-064	6/7/2010	13:08	64	NA .	- 4,580	NA	83,500	454	0.71	6.55	12.01	965	-14.7	
	GP-10-02-074	6/7/2010	15:05	74	NA	7,680	NA	196,000	Max	0.32	6.41	12.07	2550	-5.5	
	GP-10-02-084	6/7/2010	18:12	84	NA	10,500	NA	236,000	Max	0.31	6.57	12.39	2863	-60.8	-
	GP-10-02-094	6/8/2010	9:25	94	NA	8,450	NA	302,000	Max	1.15	570	12.54	2831	-97.9	100
	GP-10-02-102	6/8/2010	10:10	102	NA	11,100	NA	155,000	Max	0.42	626	14.33	2345	-169.9	_
		CONTRACTOR OF THE PARTY OF THE													
GP-10-03	GP-10-03-029	6/10/2010	08:25	29	NA.	2,900	NA	126000 J	3.2	7,03	60.7	10,01	799	79,5	
	GP-10-03-039	6/10/2010	9:20	39	NA.	4,660	NΛ	312,000	58	2,63	6.3	10.27	1916	29.8	
	GDUP-061010	6/10/2010	9:20	39	NA.	5,010	NA	345.000							
	GP-10-03-049	6/10/2010	10:00	49	NA.	6.040	NA	471.000	404	2	6.85	10.36	2563	14.5	
	GP-10-03-059	6/10/2010	10:40	50	NA	7.040	NA	598.000	Max	0.86	6.53	111.68	3212	-4(),4	
	Cfls 10793-000	6 [n 20]0	11/20	(36)	14.1	0.370	NA	Establia	68.0	1150	W. 2	pr.29	:4-11	-5 i	
	GD10F2-061010	6/10/2010	11:20	69	NΛ	10,500	NA.	502,000		- I					
GP-10-04	GP-10-04-014	6/8/2010	12:40	14	NA.	422	NA	3,460	18.7	8.32	6.17	13.34	26	50,1	
	GP-10-04-024	6/8/2010	14:00	24	NA.	716	NA	3,080	4.65	6.22	6.07	12.88	34	73.1	
	GDUP-060810	6/8/2010	14:00	24	NA	619	NA	2,920				1.50		0.20	
	GP-10-04-034	6/8/2010	14:50	34	NA	859	NA	4.090	42.1	3.47	5.73	11,22	44	58.5	
	GP-10-04-044	6/8/2010	15:10	44	NA	1,280	NA	15,800	29,3	1,52	5.13	11.57	224	114.4	
	GP-10-04-054	6/8/2010	15:50	54	NA	3,360	NA	36,700	784	0.42	5.4	11.29	644	21.9	
	GP-10-04-064	6/8/2010	15:25	64	NA	3,020	NA	73,900	245	0.57	5.4	11.58	856	30.8	
	GP-10-04-074	6/8/2010	17:15	74	NA	3,260	NA	207,000	Max	0.38	6.28	11.17	9.35	-91.6	
	GP-10-04-084	6/8/2010	17:50	84	NA.	2,000	NA	181,000	Max	0.32	6.01	_ 11.53	79.8	-40.7	
	GP-10-04-094	6/8/2010	.18:30	94	NA	- 12,300	NA	325,000	Max	0.29	6.33	12.05	244.5	-1.509	-
San Caran															
GP-10-05	GP-10-05-015	6/9/2010	9:50	15	NA	1,280	NA	11,200	1.08	0.74	6.32	12.82	109		Clear
	GP-10-05-025	6/9/2010	10:25	25	NA.	1,700	NA	23,800	3,54	1 77	5.85	12.55	242	73	Clear
	GDUP-060910	6/9/2010	10:25	25	NA	1,580	NA	23,900							
	GP-10-05-035	6/9/2010	10:53	35	NA	1,160	NA	19.100	17.8	1.45	6,21	13.25	214		Clear
	GP-10-05-045	6/9/2010	11:24	45	NA	1,710	NA	28,700	36.9	2.24	6.17	2.76	255	-68	Clear
3P-10-05A	GP-10-05A-029	6/9/2010	13:20	29	NA.	3,200	NA	272.000	1.52	992	6	16.24	1194	63.2	Clear
	GP-10-05A-039	6/9/2010	14:05	39	NA.	1,420	NA	27.400	57.7	2.79	5.22	14.72			Clear
	GDUP2-060910	6/9/2010	14:05	39	NA	1,490	NA	30,400		411.5	1000	7 (00 0 /10)	7.7	3,12	3,54
	GP-10-05A-049	6/9/2010	14:55	49	NA	1,500	NA	18,600	39	4.87	5.81	14.29	172	76	
	GP-10-05A-059	6/9/2010	15:57	59	NA.	1,980	NA	24,200	32.9	1.73	6.18	13.89	208		Tan/Clea
	GP-10-05A-069	6/9/2010	17:15	69	NA	1,880	NA	22,200	Hand Pumped		5.70	,3.02	2,90	3,	12.0 (2.160
	GP-10-05A-079	6/9/2010	18:45	79	NA.	1,550	NA	17,700	No Readings, S	ilted up and Ch	weed Screen		1		1
	GP-10-05A-089	6/9/2010	19:20	89	NA.	1,940	NA NA	17,800	No Readings, S						
	GP-10-05A-089	6/9/2010	19:40	99	NA.	4,190	NA NA	30,800	No Readings, S						
	GP-10-05A-109	6/9/2010	20:10	109	NA.	6,990	NA NA	104,000	No Readings, S					-	-
	G7-10-03A-109	0/3/2010	20;10	103	NA.	0.990	INA	104,000	ivo Keadings, S	med up suc C10	agged acreen				

TABLE 2 Groundwater Profile Results Shepley's Hill Landfill, Devens, MA

					Pot	asium	Soc	lium							
Boring Location	Sample ID	Date	Time (Military Format)	Depth	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Turbidity N1U	DO mg/L	11q	Temp Celcius	Spec Cond uS/cm	ORP mV	Color
GP-10-06	GP-10-06-024	5/24/2010	11:50	24	NA	817	NA	639	.50	0.19	5.57	9.16	26	127.5	Clear
	GP-10-06-034	5/24/2010	12:40	34	NA.	2,700	NA	2.120	31	0.39	2.99	12.66	103	-12.3	
	GP-10-06-044	5/24/2010	13:35	44	NA.	3.440	NA	3.730	800	0.19	5,65	15.69	194	10000	Cloudy
	GP-10-06-054	5/26/2010	8:50	54	NA.	13.900	NA	35,400	Max	0.19	6.04	12.89	880	-119.6	
	GDUP-052610	5/26/2010	8:50	54	NA.	15,300	NA	38,000	1,000	311		32007	13400	11.60	e tenerity
	GP-10-06-064	5/26/2010	9:45	64	NA	18,200	NA	30,800	Max	0.14	6	11.63	827	-120	Cloudy
	GP-10-06-074	5/26/2010	11:15	74	NA.	10,700	NA	19,100	Max	0.14	4.08	14.16	725	the same of the same of	Cloudy
	GP-10-06-079	5/26/2010	12:00	79	NA	12.500	NA.	24,700	Max	0.19	4.34	14.89	669		Cloudy
7P-10-06A	GP-10-06A-034	5/24/2010	15:15	34	NA	526	NΛ	2,600	2.3	10.04	5.66				211 910/10
	GP-10-06A-044	5/24/2010	16:00	44	NA	2.560	NA	1.910	140	1.54	100000	16.58	24	194,9	
1	GP-10-06A-054	5/24/2010	17:40	54	NA	2.320	NA	2.800	900	0.000	5.79	14.66	76		Cloudy
	GP-10-06A-064	5/25/2010	9:50	64	NA.	5.090	NA	5.810	The second secon	1.47	5.8	14.1	166		Cloudy
	GDUP-052510	5/25/2010	9:50	64	NA	5,280	NA	0.330	Max	0.1	6.55	15,54	67	-134	Cloudy
	GP-10-06A-074	5/25/2010.	11:10	74	» NA	7,100	NA			0.14	- (22	177 77 77			40.00
0 4	GP-10-06A-084	5/25/2010	13:00	84	NA NA	8,480	NA.	12,200	Max	.0.14	6,37	14.54	292		Cloudy
	GP-10-06A-094	5/25/2010	14:40	94	NA NA	10,700	NA NA	14,600 39,700	Max Max	0.17	6.34 5.81	14.83	316 508		Cloudy
	GP-10-06A-104	5/25/2010	16:30	104	NA NA	7.270	NA	37,300	900	0.17	6.24	17.17			Cloudy
	GP-10-06A-110	5/25/2010	17:35	110	NA NA	7.270	NA NA	38,800	Max	0.11	6.14	14.66	608		Cloudy
GP-10-07	GP-10-07-039	5/19/2010						The same of the same of	THUS.	0.11	0.14	14.00	003	-332	Cloudy
GF-10-07	GP-10-07-049	5/20/2010	14:00 13:45	39 49	13.700 70800	14.500	24.800	26,300	1						
	GPDUP-052010	5/20/2010	13:45	19	75200	23400 J	30200	27,800	1						
Okrezna						23,300	28700	27,500							
GP-10-08	GP-10-08-011	6/3/2010	12:10	11	NA	1.560	NA.	1.2.0()()							
	GDUP-060310	6/3/2010	(2:10)	11	NA	1,490	NA	(1,700	12,7	6.97	6.78	11.73	189	20.1	Clear
	(31-10-08-02)	6/3/2010	13:20	21	NI	2,220	NA	20.400	17.5	4.68	6.5	10.46	337	31.4	Clear
	GP-10-08-031	6/3/2010	14.30	31	15.90	3.240	N.V	38.500	44.4	33.31	6.43	12,57	000	-3 9	lan ele
	GP-10-08-041	6/3/2010	15:00	41	NA	3.530	NA	39.200	64.9	0.26	6,44	12,02	764	-8.6	Clear
	GP-10-08-051	6/3/2010	17:20	51	NA	5,200	NA	48.900	321	0,24	6,56	11.6	9.64	-42	Tan / CT
	GDUP2-060310	6/3/2010	17:20	51	NA	5.190	NA	48,000					5.50		
	GP-10-08-061	6/3/2010	18:05	61	NΛ	4.390	NA	40.800	37,4	0.9	6.54	15	244	-4.3	Clear
GP-10-09	GP-10-09-021	5/28/2010	9:15	21	NA	1,030	NA	4,760	1.13	10.34	6.82	11.93	62	97.1	Clear
	GP-10-09-031	5/28/2010	10:00	31	NA	2,220	NA	33,600	596	6.35	6.11	12.82	223	71,6	Cloudy
	GDUP-052810	5/28/2010	10:00	31	NA	2,350	NA	33.200	1		30.03	33.7		0,000	and the same of
	GP-10-09-041	6/1/2010	11:30	41	NA	3,220	NA	134000 J	178	4.97	6.05	13.05	706	50.4	Cloudy
	GP-10-09-051	6/1/2010	13:00	51	NA	2.690	NA	134,000	333	2.15	6.24	12.56	714		Cloudy
	GDUP-060110	6/1/2010	13:00	51	NA	2,500	NA.	132,000				*300,0	10000		
	GP-10-09-061	6/1/2010	14:20	61	NA	3,300	NA	30,500	87.1	1.04	6.62	13.19	401	-56.2	Clear
	GP-10-09-071	6/1/2010	16:45	71	NA	3,470	NA	45.300	82.2	1.19	6.66	12.92	486	0.00	Cloudy
	GP-10-09-081	6/1/2010	17:50	81	NA	3.300	NA	36.500	93.2	1.18	6.66	13.3	428	-57.3	
GP-10-10	GP-10-10-011	6/2/2010	14:45	11	NA	2,690	NA	12,500	2,5	10.93	6.73	10,89	130		Clear
	GP-10-10-021	6/2/2010	16:00	21	NA	2,490	NA	54.300	11.8	7.45	6.17	11.49	0.000	200	
	GDUP-060210	6/2/2010	16:00	21	NA	2,560	NA.	54,200	11.0	7,43	0.17	11,49	375	33.9	Clear
	GP-10-10-031	6/2/2010	16:30	31	NA	5,480	NA	88,800	10.34	0.56	2.1	19.22	czy	45.6	Class
	GP-10-10-041	6/2/2010	17:15	41	NA	8,250	NA.	43.300	26.3	0.56	6,1	12.46	561	100	Clear
	GP-10-10-051	6/2/2010	18:00	51	NA	5,650	NA	32,400	26.3	100,4040	6.19	13.26	509	100	Clear
	GP-10-10-061	6/2/2010	19:00	61	NA	4,170	NA.	39,600		0.26	6.32	12.59	594	-35.3	
	GP-10-10-071	6/3/2010	10:00	71	NA NA	5,190	NA.	44,500	90.6	0.32	6.34	12.02	87.6	-44.3	
	NA - Not Applicable	0/5/2010	10.00	1.0	NA.	2,120	PM	44,500	121	0.36	6.41	12,72	737	-85	Tan

NA - Not Applicable

ug/L is micrograms per liter mg/l - miligrams per liter

J means estimated results

B indicates that analyte was detected in the associated method blank

DO - Dissolved Oxygen ORP - Oxygen Reduction Potential

TABLE 2 Groundwater Profile Results Shepley's Hill Landfill, Devens, MA

Boring Location	Sample 1D	Date	Time (Military Format)	Depth	Alkalinity mg CaCO3/L	Ammonia mg/l	Nitrite mg/l	COD mg/l	Chloride mg/l	Nitrate mg/l	Sulfate mg/l	Notes
GP-10-01	GP-10-01-009	5/27/2010	10:00	9	23	0.214	< 0.002	< 7	42	3.6	18	7,010
5.5.277.00	GP-10-01-019	5/27/2010	10:35	19	30	0.0565 J	< 0.002	< 7	92	4.1	16	
	GDUP-052710	5/27/2010	10:35	19	31	0.241	< 0.002	< 7	90	3.7	16	
	GP-10-01-029	5/27/2010	11:20	29	31	0.06911	< 0.002	< 7	82	2.3	26	
	GP-10-01-039	5/27/2010	11:45	39	38	1.1	0.011	9.2.1	170	3.9	22	
	GP-10-01-049	5/27/2010	$=-\frac{11343}{12:30}=-$	49	60	0.744	< 0.002	<7	24	0.4	7.9	- (
	Association and the second	The second second second	Control of the Control	59	94	0.307	processor and professional	16.1	0.0000001111		7.7	
	GP-10-01-059	5/27/2010	13:11			Ch. M.Cau	< 0.002	1000	34	0.23	PE - 194 + 10	(1-1)
	GP-10-01-069 GP-10-01-075	5/27/2010	15:20	75	120	0.212	< 0.001 0.01 J	7 < 7	34 92	2.4	10	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
CD 10 02	1 200	STATE OF THE PARTY OF THE				Appeal History						
GP-10-02	GP-10-02-024	6/7/2010	9:50	24	200	0.089	< 0.002	18 J	140	< 0.01	23	
	GP-10-02-034	6/7/2010	10:42	34	190	0,109	< 0.002	16 J	150	< 0.01	28	
	GDUP-060710	6/7/2010	10:42	34	190	0.092	< 0.002	27	150	< 0.01	29	
	GP-10-02-044	6/7/2010	11:35	44	200	0,293	< 0.002	13.1	130	< 0.01	18	
4 - 4 -	GP-10-02-054	6/7/2010	12:27	54	230	0.268	< 0.002	· 16J ··.	110,	<0.0L	16	***
1 20 1 2	GP-10-02-064	6/7/2010	13:08	64	270	0.196	< 0.002	20	160	< 0.01	23	
	GP-10-02-074	6/7/2010	15:05	74	140 -	0.178	< 0.002	29	780	0.026 J	31	
	GP-10-02-084	6/7/2010	18:12	84	170	0.08	< 0.002	31	880	< 0.01	32	
	GP-10-02-094	6/8/2010	9:25	94	150	180.0	< 0.002	38	840	< 0.01	34	
	GP-10-02-102	6/8/2010	10:10	102	210	0.077	< 0.002	40	640	< 0.01	30	
GP-10-03	GP-10-03-029	6/10/2010	08:25	29	46	0.0326 J	< 0.002	< 7	210	1.4	48	
	GP-10-03-039	6/10/2010	9:20	39	65	0.046.1	< 0.002	27	600	4.4	31	
	GDUP-061010	6/10/2010	9:20	39	65	< 0.025	< 0.002	27	620	4.3	33	
	GP-10-03-049	6/10/2010	10:00	49	53	0.0287 1	< 0.002	38	870	0.58	49	
	GP-10-03-059	6/10/2010	10:40	59	110	0.02641	< (),()()?	47	1100	11,63	35	
	612-10-03-069	6 10 2010	11.20	69	100	0.0314	0.002	13	1200	10.02.1	38	
	GDUP2-061010	6/10/2010	11:20	69	100	< 0.025	< 0.002	47	1200	0.0243	38	
GP-10-04	GP-10-04-014		12:40			0.0296 J	< ().()()2	< 7				-
CD-10-04		6/8/2010		14	12		1650 ACT	4.7	5.7	0.028 J	0.74 J	
	GP-10-04-024	6/8/2010	14:00	24	11	0.0433.1	< 0.002	91	2	0.03.1	U.67 J	
	GDUP-060810	6/8/2010	14:00	24	1	0.0242 J	< 0.002	< 7	2,2	0.049 J	< 0.12	
	GP-10-04-034	6/8/2010	14:50	34		0.0205 J	< 0.002	< 7 < 7	2.1	0.1	< 0.12	
	GP-10-04-044	6/8/2010	15:10	44	22	0,024 J	< 0.002		23	3.6	< 0.12	
	GP-10-04-054	6/8/2010	15:50	54	100	2.67	0.01 J	11.1	67	5.8	87	
	GP-10-04-064	6/8/2010	15:25	64	120	0.103	t 10,0	20	120	3.8	97	
	GP-10-04-074	6/8/2010	17:15	74	100	0.0522 J	< 0.002	31	210	0.48	32	X.
	GP-10-04-084	6/8/2010	17:50	84	120	0.0319 J	< 0.002	16.1	150	0.12	34	
	GP-10-04-094	6/8/2010	18:30	94	140	0.0543 J	. < 0.002	38	820	, < 0.01	30	1
GP-10-05	GP-10-05-015	6/9/2010	9;50	15	18	0.0356 J	< 0.002	25	19	0.64	9.9	
	GP-10-05-025	6/9/2010	10:25	25	55	0.152	< 0,002	29	48	0.012 J	6,3 B	
	GDUP-060910	6/9/2010	10:25	25	56	0.114	< 0.002	20	47	< 0.01	4,3 B	
	GP-10-05-035	6/9/2010	10:53	35	61	0,145	< 0.002	20	39	< 0.01	3.7 B	
	GP-10-05-045	6/9/2010	11;24	45	56	0.185	< 0.002	31	45	< 0.01	1.8 B	
GP-10-05A	GP-10-05A-029	6/9/2010	13:20	29	51	0.0425 J	< 0.002	56	380	1.9	16	
	GP-10-05A-039	6/9/2010	14:05	39	30	0.0324 J	< 0.002	16.1	34	2.1	25	
	GDUP2-060910	6/9/2010	14:05	39	32	0.0388 J	< 0.002	11.1	35	2,4	26	
	GP-10-05A-049	6/9/2010	14:55	49	44	0.0387 J	< 0.002	18 J	20	1.7	13	
	GP-10-05A-059	6/9/2010	15:57	59	44	0.092	< 0.002	< 7	43	0.72	13	
	GP-10-05A-069	6/9/2010	17:15	69	49	0.0442 J	< 0.002	< 7	30	1,2	14	*
	GP-10-05A-079	6/9/2010	18:45	79	54	0.042 J	< 0.002	< 7	22	1 1	10	
	GP-10-05A-089	6/9/2010	19:20	89	55	0.0325 J	< 0.002	11.1	21	1	8.9	
	GP-10-05A-089	6/9/2010	19:40	99	170	0.082	< 0.002	< 7	56	0.26	24	
	GP-10-05A-109	6/9/2010	20:10	109	270	0.154	< 0.002	111	140	+		-
	OL-10-024-108	0/9/2010	20:10	109	270	0.134	~ U.UU2	(13)	140	1	30	

TABLE 2 Groundwater Profile Results Shepley's Hill Landfill, Devens, MA

Boring Location	Sample ID	Date	Time (Military Format)	Depth	Alkalinity mg CaCO3/L	Ammonia mg/l	Nitrite mg/l	COD mg/I	Chloride mg/l	Nitrate mg/l	Sulfate mg/l	Notes
GP-10-06	GP-10-06-024	5/24/2010	11:50	24	12	0.0547.1	< 0.02	< 7	0.43 J	0.009 J	1,3	0.45u Filter
	GP-10-06-034	5/24/2010	12:40	34	59	2.28	< 0.02	< 7	1	0.37	3	
	GP-10-06-044	5/24/2010	13:35	44	80	1.21	0.025 J	< 7	0,95	0.12	17	may be closer to 150, (100)
	GP-10-06-054	5/26/2010	8:50	54	380	12.1	< 0.002	27	34	0.23	3,3	may be closer to 150. Crist
	GDUP-052610	5/26/2010	8:50	54	380	12.2	< 0.002	18 J	30	0.36	2.4	
	GP-10-06-064	5/26/2010	9:45	64	330	9,04	< 0.002	32	20	0,3	0.85 J	
	GP-10-06-074	5/26/2010	11:15	7.4	290	2.8	< 0.002	170	14	0.024 J	1,2	Property Company Assertion of Company
	GP-10-06-079	5/26/2010	12:00	74)	270	2.96	< 0.002	9.2.1	16	0,22	4.4	Turned brown by time of test
GP-10-06A	GP-10-06A-034	5/24/2010	15:15	34	9	0.0232 J	< 0.02	< 7	1.4	0,023.1	5,6	
	GP-10-06A-044	5/24/2010	16:00	44	35	0.123	< 0.02	< 7	0.91	0.03 J	9.2	
	GP-10-06A-054	5/24/2010	17:40	54	81	1.05	< 0.02	< 7	1.5	0.05 J	16	
	GP-10-06A-064	5/25/2010	9:50	64	84	2.08	< 0.02	< 7	4.4	0.06	4.8	
	GDUP-052510	5/25/2010	9:50	64	84	2,22	< 0.02	< 7	4.8	80.0		
1 me 1	GP-10-06A-074	5/25/2010	11:10	. 74	140	3.89	0.02 J	14.J	6.3		5.6	and the second s
	GP-10-06A-084	5/25/2010	13:00	84	140	4.92	< 0.02 3	11 J		0.13	2.4	3 2 0 6 6 6 6
0.00	GP-10-06A-094	5/25/2010	14:40	94	290	2.23	0.018 J	18 J	5.4	0.12	3.3	
	GP-10-06A-104	5/25/2010	16:30	104	360	0.947	< 0.002				4.2	
	GP-10-06A-110	5/25/2010	17:35	110	350	0.43	< 0.002	18 J 23	28 28	0.32	3,6	7-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
GP-10-07	GP-10-07-039	5/19/2010	14:00	39	310	7.49	0,022 J					The second second
31.10.01	GP-10-07-049	5/20/2010	13:45	49	240	2.68		25	46	< 0.01	0.4 J	
	GPDUP-052010	5/20/2010	13:45	49	250	2.68	< 0.02 0.022 J	16.J 16.J	49	0.012 J 0.011 J	1,6 1,6	
GP-10-08	GP-10-08-011	6/3/2010	12:10	n	1,00							
G1-10-00	GDUP-060310	6/3/2010	12:10	n i	67	0.02 ,1	< 0.002	< 7	21	0.01 1	8.1	
	GP-10-08-021				66	< (),() 7	< 0.002	< 7	22	0.01.1	8,5	
	(iP-10-08-034	6/3/2010 6/3/2010	13:20	21	120	0,017	= 0.002	-07	42	0.08	12	
			14:30	31	290	0.0719.1	= 0,00 <u>-1</u>	≈7	71	- 0311	14	
	GP-10-08-041	6-3-2010	15:00	41	320	0.04671	< 0.002	9.1	9()	= 0.01	16	
	GP-10-08-051	6/3/2010	17;20	51	530	0.0358 J	< 0.002	13.1	67	< (),() 1	10	
	GDUP2-060310	6/3/2((1.0)	(7:20)	51	530	0,017 J	< 0.002	< 7	66	< 0.01	10	
	GP-10-08-061	6/3/2010	18:05	61	410	0.0201.3	< 0.002	9.1	72	< 0.01	13	
GP-10-09	GP-10-09-021	5/28/2010	9:15	21	12	0.0491 J	< 0.002	< 7	2	0.78	8.6	
	GP-10-09-031	5/28/2010	10:00	31	18	0.0384 J	< 0.002	< 7	48	2.8	13	
	GDUP-052810	5/28/2010	10:00	31	18	0.017.1	< 0.002	9 J	45	2.9	13	
	GP-10-09-041	6/1/2010	11:30	41	32	0.0225 J	< 0.002	< 7	220	1,7	13	
	GP-10-09-051	6/1/2010	13:00	51	52	0.0364 J	< 0.002	9.1	200	2.3	16	
	GDUP-060110	6/1/2010	13:00	51	52	0.0166.J	< 0.002	< 7	200	2.2	16	
	GP-10-09-061	6/1/2010	14:20	61	120	0.0208 J	< 0.002	< 7	48	0.6	15	
	GP-10-09-071	6/1/2010	16:45	71	120	0.0326 J	< 0.002	<7	85	0.67	14	
	GP-10-09-081	6/1/2010	17:50	81	110	0.0168 J	< 0.002	< 7	68	0.74	15	
GP-10-10	GP-10-10-011	6/2/2010	14:45	(1	22	< 0.017	< 0.002	< 7	17	1.1	7,4	
	GP-10-10-021	6/2/2010	16:00	21	38	0.0274 J	< 0.002	< 7	82	2,2	12	
	GDUP-060210	6/2/2010	16:00	21	38	0.0224 J	< 0.002	11.1	83	2.4	11	
	GP-10-10-031	6/2/2010	16:30	31	80	2.21.	< 0.002	< 7	120	0.26	16	
	GP-10-10-041	6/2/2010	17:15	41	130	5.01	< 0.002	9.1	76	0.028 J	6 B	
	GP-10-10-051	6/2/2010	18:00	51	300	0.54	< 0.002	18.1	25			
	GP-10-10-061	6/2/2010	19:00	61	350	0.276	< 0.002			0.047 J	0.98 JB	
	GP-10-10-071	6/3/2010	10:00	71	330	0.512	< 0.002	38	82	0.11	2.1 B	
	Q1 = 10 = 10 = 0 / 1	M-212010	10,00	4.1	220	0.212	~ 0:002	22	91	0,2	2.1 B	

ug/L is micrograms per liter

mg/l - miligrams per liter I means estimated results

B indicates that analyte was detected in the associated method blank

COD - Chemical Oxygen Demend

TABLE 2 Groundwater Profile Results Shepley's Hill Landfill, Devens, MA

	4000						ninum		mony		Arsenic		Bar	rium	Ber	yllium	Cad	mium	Cal	leium
	Boring	0 1 10		Time	2-0	Total	Dissolved	Total	Dissolved	Total	Dissolved	Field Kit	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Disso
	Location	Sample ID	Date	(Military Format)	Depth	(ug/l.)	(ug/l,)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/1.)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/
	GP-10-11	GP-10-11-039	8/3/2010	14:10	39	443	NA	NA	NA	263	264	80	NA	NA	NΛ	NΛ	NA	NA	19000	N
		GP-10-11-049	8/3/2010	15:15	49	44400	NA	NA	NA	688	375	70	NA	NA	NA	NA	٧٨	NA	26500	N
		DUP3-080310	8/3/2010	15:15	49	35200	NA	NΛ	NA	641	396	NΛ	NA	NΛ	NA	NA	NA	NA	26100	1
		GP-10-11-059	8/3/2010	19:00	55	49400	< 7.64	NΛ	1.17.1	760	236	150	NA	27.3	NΛ	< 0.236	NΛ	< 0.236	61600	4
		GP-10-11-064	8/4/2010	11:30	64	56600	44.1.1	NA	1.19	230	19.8	< 5	NA	26.5	NA	< ().()59	NA	< 0.059	285000	44
	GP-10-12	GP-10-12-044	8/5/2010	13:05	44	20200	< 19,1	NA	< 1.2	4320	3880	> 500	NA	36.1	NΛ	< 0.059	NA.	< 0.590	33600	24
	A	GP-10-12-054	8/5/2010	15:00	54	NA	19.1	NA	~1.2	NA	2850	-500	NA	29.9	N.A	0.590	NI	<0.500	NA.	3
		GP-10-12-065	8/9/2010	8:20	65	NA	14.1.1	NA	2,39	NA	38.9	30	NA	37.6	NΛ	< 0.236	NΛ	<0.236	NA	5
	GP-10-13	GP-10-13-039	8/9/2010	14:45	39	32900	17	NA	0.22 J	176	124	30	NA	123	NA	<0.059	NA	<0.059	97100	8
	1221.07(0)	GP-10-13-049	8/9/2010	17:00	49	NA	12.5 J	NA	0.811	NA	12.2	< 5	NA	98,6	NA	< 0.295	NA.	< 0.295	NA NA	10
		GP-10-13-059	8/10/2010	9:05	59	16000	8.44 J	NA	0.19.1	120	102	100	NΛ	244	NΛ	< 0.059	NA.	< 0.059	80700	
		GP-10-13-069	8/10/2010	11:15	69	NA	< 19.1	NA	<1.2	NA	1060	No.		1000	The state of the s				2 200	8
	2 4"	GP-10-13-079	8/10/2010	13:10	79	- NA	5.88 J	- NA	0.16 J	NA NA	123	> 500	NA :	68.3	NA NA	< 0.59	NA -	< 0.59	· NA	3
1 200	- Aug - g - g -	4 4				1.		7.3		85 ° Y	9 - 10 -		5-11-			0,007		- 0.00 /		
	GP-10-14	GP-10-14-039	8/16/2010	09:50	39	1980	4.84 J	NA	0.14 JB	39.1	14.4	5	NA	49.8	NA _	<0,059	NA	< 0.059	63300	6
	1	GP-10-14-049	8/16/2010	11:20	49	2400	35.8 J	NΛ	0.8 JB	774	772	250	NA	88	NA	< 0.236	NΛ	< 0.236	49100	5
		DUP-081610	8/16/2010	11:20	49	6020	36.7 J	NA	< 0.48	792	762	NA	NA	85.4	NA	< 0.236	NA	< 0.236	49600	4
	1	GP-10-14-059	8/16/2010	13:00	59	NA	< 19.1	NA	1,21 JB	NA	2400	> 500	NA	15.6	NA	< 0.59	NA	< 0.59	NA_	5
		GP-10-14-069	8/16/2010	14:35	69	5160	< 19.1	NA	< 1,20	5260	5110	> 500	NΛ	19,6	NA	< 0.590	NA	< 0.590	38500	3
		GP-10-14-079	8/17/2010	07:45	79	8270	<19.1	1.73 J	<1.20	17300	15100	> 500	58.4	22.6	<0.590	<(),590)	<0.590	<0,590	29900	3
	GP-10-15	GP-10-15-039	8/11/2010	9:30	39	NΛ	18.5 J	NΛ	< 0.480	NA	1740	> 500	NΛ	124	NΛ	< 0.236	NΛ	< 0.236	NΛ	4
		GP-10-15-049	8/11/2010	11:25	40	2080	< 10.1	NA	< 1.20	17200	16600	70	NA	17.3	NA	< 0.590	NA	< 0.590	47700	4
		GP-10-15-050	8/11/2010	14:45	50	NA	3.15	21	n 49 J	17.7	278	. 80	2.7	- %-	1.7	- 0.050	2.7	0.059	11/	3
	GP-10-16	GP-10-16-024	8/17/2010	16:15	24	41800	7.68 JB	2.92	0.26 J	170	1.81	5	249	5.73	2.53	<(),()54)	0.671	<0.059	30600	1
		DUP-081710	8/17/2010	16:15	24	44600	11.8 B	2.88	0.2 J	164	3.87		255	5.99	2.55	< 0.059	0.66 J	< 0.059	30600	1
		GP-10-16-034	8/18/2010	07:55	34	79600	42.3	3.2.1	0.51	333 J	1.97	5	558	8.23	6.35	< 0.059	1,36 J	<0.059	57800	
	10 1	GP-10-16-054	8/18/2010	11:20	54	4030	16.9	2.82	0.8	19,9	1.89	< 5	25.9	8,15	0.34 J	< 0.059	0.19 J	<0.059	35200	3
		Dup-081810	8/18/2010	11:20	54	5710	18.9	3.6	0.64	26	2.05	NA	32.5	8.34	0.45 J	<0.059	0.17.J		-	3
		GP-10-16-064	8/18/2010	13:40	64	NA.	4.17 J	NA	0.28 J	NA NA	445	100000	12.00m			THE CLASSICAL STREET	100000	<0.059	33600	
		GP-10-16-074	8/19/2010	07:45	74	11	44.56	INA	1 300/2-00	- 377.07		100	NA.	39.2	NA	<0.059	NA	<0,059	NA	3
					-	3540	7.02 J	1 20 1	0.42 J	248 J	216 J	100	59	36.3	0.17 J	< 0.059	< 0.059	< 0.059	52200	5
	3	GP-10-16-084	8/19/2010	09:40	84	906	< 7.64	1.39 J	< 0.48	256	248	100	64.3	56.6	< 0.236	< 0.236	< 0,236	< 0.236	125000	1:
		DUP-081910 GP-10-16-094	8/19/2010 8/19/2010	09:40 12:35	94	1460 2880	14.1 J 5.34 J	0.81 J	< 0.48 0.23 J	19.3	3.44	NA < 5	67.4 35.8	59.4 10.1	< 0.236 0.3 J	< 0.236	< 0.236 0.07 J	< 0.236 < 0.059	128000 39200	1 3
	CB 10 12	OB 10 17 000	0.00000						1100						0.54	- 0,057	0.073	V 0.039	37200	
	GP-10-17	GP-10-17-009 GP-10-17-019	8/2/2010 8/2/2010	11:40 12:20	9	NA NA	NA NA	NA NA	NA NA	0.58	0.46 J 0.39 J	< 5 < 5	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	
	1	DUP-080210	8/2/2010	12:20	19	NA	NA	NA	NA	0.66	0.49 J	NA	NA	NA	NA	NA				-
	A .	GP-10-17-029	8/2/2010	16:00	29	NA.	NA NA	NA	NA NA	0.78	0.25 J	< 5	NA NA	NA NA	0.000	NA NA	NA NA	NA.	NA NA	
		GP-10-17-039	8/2/2010	16:45	39	NA	NA.	NA	NA NA	1950	1860				NA NA		NA NA	NA NA	NA.	-
		GP-10-17-049	8/2/2010	17:30	49	1000	170-2	220			200	500	NA	NA	NA	NA	NA	NA	NA	
		GP-10-17-049 GP-10-17-056	8/2/2010	17:30	56	NA NA	NA NA	NA NA	NA NA	17.7 26.4	20.8 5.38	5	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	
	GP-10-18	GP-10-18-007	8/2/2010	18:34	7	NIA	N/A	NIA	NA.	0.02	0.77									
	GF-10-18	GP-10-18-017	8/2/2010	8:25	17	NA NA	NA NA	NA NA	NA NA	0.93	0.73	NA .	NA NA	NA	NA NA	NA	NA NA	NA	NA.	
			4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	12.732			NA NA	NA	NA	1.87 J	1.26 J	< 5	NA	NA	NA	NA	NA	NA	NA	100
	1	GP-10-18-027	8/3/2010	9:00	27	NA	NA	NA	NA	117	107	80	NA	NA	NA	NA	NA	NA	NA	-
	1	DUP-080310	8/3/2010	9:00	27	NA	NA	NA	NA	118	107	144	NA	NA	NA	NA	NA	NA	NA	
		GP-10-18-037 GP-10-18-047	8/3/2010 8/3/2010	11:00	37 47	NA NA	NA NA	NA NA	NA NA	274 373	262 390	60 80	NA. NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	H
			1.4.4.4.44	12.77	- 177		5.05	. 200	, , ,	-70	270	30	1975	14/3	INA.	N/A	1474	INA	MA	
	GP-10-19	GP-10-19-009	8/3/2010	14:35	9	NA	NA	NA	NA.	0.57	0.38 J	< 5	NA	NA	NA	NA	NA.	NA	NA	
		DUP2-080310	8/3/2010	14:35	9	NA	NA	NA	NA	0.53	0.35 J	NA	NA	NA	NA	NA	NA	NA	NA	
		GP-10-19-019	8/3/2010	15:15	19	NA	NA.	NA	NA	3.07	0.6	< 5	NA	NA	NA	NA	NA	NA	NA	1
	1	GP-10-19-029	8/3/2010	16:05	29	NA.	NA	NΛ	NA	886	810	100	NA	NA	NA	NA	NA NA	NA	NA.	
		GP-10-19-039	8/3/2010	17:00	39	NA	NA	NA	NA	690	677	100	NΛ	NA	NA	NA.	NA.	NA NA	NA.	
		GP-10-19-046	8/3/2010	18:15	46	NA	NA	NA	NΛ	23,3	3.92	5	NA.	E 180 CH 94				. (THE PARTY OF THE P	1
			1	10,15	10	1100	1 1264	1464	144.8	4111	3:72		1977	NΛ	NA	NA	NA	NA	NA	1

l'ABLE 2 Groundwater Frofile Results Shepley's Hill Landfill, Devens, MA

					Alun	ninum	Anti	mony.		Arsenic		Ba	rium	Bery	llium	Cad	lmium	Ca	leium
Boring			Time		Total	Dissolved	Total	Dissolved	Total	Dissolved	Field Kit	Total	Disselved	Total	Dissolved	Total	Dissolved		Dissolve
Location	Sample ID	Date	(Military Format)	Depth	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L
iP-10-20	GP-10-20-009	8/4/2010	9:30	9	N/A	NΛ	NA	NA	1.6	0.41	< 5	NA	NA	NA	NA	NA	NA		NA
	GP-10-20-019	8/4/2010	10:10	19	488	5.49.1	NΛ	NA	2,94	1.02	< 5	NA	NA	NA	NA NA	NΛ	NA.	0.000	1210
	DUP-080410	8/4/2010	10:10	19	573	5.81 J	NΛ	0.21 J	3.11	0.066	NA.	NA	32.1	NA	< 0.500	NA NA	0.08 1	THE RESIDENCE OF	
	GP-10-20-029	8/4/2010	11:00	29	NΛ	NΛ	NA	NA.	220	235	40	NA.	10000		100000000000000000000000000000000000000		1	Calcin Total (ug/L) NA 13100 12500 NA NA 22100 21600 NA	1250
	GP-10-20-039	8/4/2010	13:00	39	NA -	- NA	NA	NA.	446	429	50	NA NA	NA NA	NA	NA NA	NA	NA NA		NV
			1,5,5,110		1,77	1773	13.5	1323	441)	427	507	INA	NΛ	NA	NΛ	NA	NΛ	NA	NA
7P-10-21	GP-10-21-011	8/4/2010	15:05	11	NA	NΛ	NΛ	NA	3,98	0.31 J	< 5	NA	NΛ	NA	NΛ	NΛ	NΛ	NΛ	NΛ
	GP-10-21-021	8/4/2010	15:45	21	446	6.21.1	NA	NA	1.71	0.62.1	< 5	NA	NA	NA	NA	NA	NA	22100	21600
	DUP2-080410	8/4/2010	15:45	21	344	8.05.1	NΛ	NA	1.48	0.63.1	NΛ	NA	NΛ	NΛ	NΛ	NA	NA	21600	2290
	GP-10-21-031	8/4/2010	16:30	31	NA	NA	NA	NA	5.05	3.64	< 5	NA	NA	NA	NΛ	NA	NA		NA
	GP-10-21-041	8/4/2010	17:00	41	NA	NA	NA	NA	322	349	60	NA	NA	NA	NA	NA	NA		NA
	GP-10-21-051	8/4/2010	18:05	51	NA	NA	NA	NA.	18.7	12.3	< 5	NA	NA	NA	NA	NA	NA		NA
	GP-10-21-060	8/4/2010	19:00	60	NA .	N.1	N.A	NΛ	145	146	40	NA	NA	NΛ	NA.	NΔ	NA.	10000	NA.
P-10-22	GP-10-22-011	8/10/2010	14:40	- 11	NA	NA NA	NA	N74	0.51	0.261					res J				
11-10-22	GP-10-22-021 ·	8/10/2010	15:00	21	NA ·		NA *NA	NA	0.51	0.37 J	< 5	NA *	NA	NA	NA	NA	NA	-	NA
	GP-10-22-031	8/10/2010	(a () () () () () () () () ()	1 4 4 1		NA	NA.	NA	1.71	0.51	< 5	- NA	NA ·	NA -	NA	· NA	NA.	NA	NA
			15:50	31	NA	NA	NA	NA	2.65	0.75 J	< 5	NA	NA	NA	NA	NA	NA	NA	NA
	GP-10-22-041	8/10/2010	16:30	41	NA	NA	NA	NA	15.8	14.5	< 5	NA	NA.	NA	NA	NA	NA	NA	NA
	GP-10-22-051	8/10/2010	17:30	51	NA	NΛ	NA	NA	5.02	< 1.13	< 5	NA	NA	NA	NA	NA	NA	NA	NA
	GP-10-22-061	8/10/2010	18:30	61	NA	NΛ	NA	NA	6.56	3,53	< 5	NA	NA	NA	NA	NA	NΛ	NΛ	NA
iP-10-23	GP-10-23-017	8/5/2010	11:00	17	59.8	6.6.1	NΛ	NA	0.52	0.38 J	< 5	NΛ	NΛ	NA	NA	NA	NA	0880	968
	DUP-080510	8/5/2010	11:00	17	49.2	5.6.1	NA	0,15 J	1.45	1.4	NA	NA	13.5	NA NA	<0.059	NΛ	< 0.059		1030
	GP-10-23-027	8/5/2010	11:45	27	735	5.22.1	NΛ	NA	2.86	0.6 J	< 5	NΛ	NA NA	NA	NA NA	NA		100000000	The state of
	GP-10-23-037	8/5/2010	12:25	37	NA -	NA	NA.	NA	5.38	0.28.1	< 5	NA NA	NA NA	NA NA	NA.	Land Street or	- NA	Territoria de la compania	1630
	GP-10-23-047	8,5,2010	14:20	47	NI	NA	NA	N.A	010	000	500					NA	NA.	13100 12500 NA NA NA 22100 21600 NA	N.
	GP-10-23-057	8/5/2010	16:05	57	2900	×9.50	- NA	NA.	1060	(070	500	NA NA	1.7.1	NI	N.A	NA -	NA NA		N
	DUP2-080510	8/5/2010	16:05	57	4180	<9.56	NA	<0.600	1160	1100	NA.	NA	NA 43.8	NA NA	NA <0.295	N.A NA	N \ <0.295	N. Carlotte and Ca	8500 8650
GP-10-24	GP-10-24-015	0/0/2010	16.14	12	120	W 70 I							36.00			. *			
117-117-24	DUP-080910	8/9/2010 8/9/2010	15:44 15:44	15 15	138	8.52 J 8.15 J	NA NA	NA <0.240	2,06 1,52	0.94 J	<5 NA	NA NA	NA 43.4	NA NA	NA <0.118	NA NA	NA COLIS	K. C.	1750
	GP-10-24-025	8/9/2010	16:30	25	NA	NA	NA	NA	1.61	0.39 J	< 5	NA	NA NA	NA	NA NA	-	<0.118	12500 NA NA NA 22100 21600 NA	1860
	GP-10-24-035	8/9/2010	17:05	35	NA	NA	NA	NA NA	5.03	0.89 J	< 5	NA	4000		1,500	NA	NA NA		NA
	GP-10-24-045	8/9/2010	17:45	45	NA	NA	NA	NA	303	310	125	NA NA	NA NA	NA NA	NA NA	NA	NA NA		NA
	GP-10-24-055	8/9/2010	18:30	55	NA	NA NA	NA	NA NA	629	615	250	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	1000	NA NA
														- Or s	1374	(32)	100	14/4	197
3P-10-25	GP-10-25-025	8/10/2010	10:00	25	NA	NA	NA	NA_	44	0.4 J	< 5	NA	NA	NA	NA	NA	NA	NA	NA
	GP-10-25-035	8/10/2010	10:45	35	4660	18.7 J	NA	NA	10.9	0.58 J	< 5	NA	NA	NA	NA	NA	NA	20100	1860
	DUP-081010	8/10/2010	10:45	35	4580	6.72 J	NA	< ().24	10.9	1.18	NA	NA	38.8	NA	< 0.118	NA	< 0.118	19500	1940
	GP-10-25-045	8/10/2010	11:50	45	2060	11.3.1	NA	NA	37.3	35,1	.5	NA	NA	NA	NA	NA	NA		4360
	DUP2-081010	8/10/2010	11:50	45	2300	9.92 J	NA	< 0.48	38	34.9	NA	NA	51.9	NA	< 0.236	NA.	< 0.236		4280
3P-10-26	GP-10-26-011	8/11/2010	9:20	- 11	94	12.4	NA	NA	0.6	0.18 J	< 5	NA	NΛ	NA	NA	NA	NIA	NIA.	1887
and and the	GP-10-26-021	8/11/2010	10:20	21	777	12.2	NA	NA NA	2.07	0.18 J	< 5	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	1000000	NA NA
	DUP-081110	8/11/2010	10:20	21	584	9.64.1	NA	< 0.120	1.72	0.65	NA NA	NA	15.3		< 0.059				NA 1576
	GP-10-26-031	8/11/2010	10:35	31	NA.	NA NA	NA	NA NA	2.86	0.54	< 5	NA NA	NA	NA NA	2.27	NA.	< 0.059	100,000	1570
	GP-10-26-041	8/11/2010	11:05	41	NA	NA NA	NA	NA.	4	0.45 J	< 5		the second continues of		NA NA	NA	NA NA		NA
	GP-10-26-051	8/11/2010	12:15	51	NA NA	NA NA	NA	NA.	4.86 J	< 1.13	< 5	NA	NA NA	NA	NA NA	NA.	NA	377.0	NA
	GP-10-26-061	8/11/2010	13:40	61	NA.	NA NA	NA	NA NA	6.48	COLUMN TO SECURE AND ADDRESS OF THE PARTY OF	-	NA	NA	NA	NA	NΛ	NA		NA
	GP-10-26-071	8/11/2010	14:10	71	NA NA	NA NA	NA NA	NA NA	3.58 J	< 1.13 1.96 J	< 5 < 5	NA NA	NA NA	NA NA	NA NA	NA	NA NA	2.372	NA
									2,200	1,70,1		14/4	14/7	1974	INA	NA.	NA	NA	N/
iP-10-27	GP-10-27-025	8/11/2010	16:05	25	891	16.2	NA	NA	2.77	1.03	< 5	NA	NA	NA	NA	NA.	NA	5570	521
	DUP2-081110	8/11/2010	16:05	25	789	17.1	NA	< 0.120	1.11	0.38 J	NA	NA	14.8	NA	< 0.059	NA	< 0.059	1 1 2000 2000	538
	GP-10-27-035	8/11/2010	17:00	35	NA	NA	NA	NA.	24.7	0.78 J	< 5	NA	NA	NA	NA	NA	NA.	NA	N/
	GP-10-27-045	8/11/2010	17:25	45	NA	NA	NA	NA	199	200	70	NΛ	NA	NA	NA.	NA	NA NA	NA	N/
	GP-10-27-055	8/11/2010	17:50	55	NA	NA	NA	NA	288	328	70	NA	NA NA	NA	NA NA	NA	NA NA	NA NA	N/
	GP-10-27-065	8/11/2010	18:45	65	NA	NA	NA	NA	1100	1040	> 500	NA	NA.	NA	NA.	NA	Design Co.		NA NA
			The second secon		-				7.00	10.10	200	1974	1304	13/3	14/1	1974	NA	NA	1 1

ug/L is micrograms per liter

J means estimated results

TABLE 2 Groundwater Profile Results Shepley's Hill Landfill, Devens, MA

Boring Location	Sample ID			Depth	Chro	mium	Co	balt	Co	pper	, in	00	1	.ead	Mag	nesium	Man	iganese	Me	reury
		Date	Time (Military Format)		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolve
					(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
GP-10-11	GP-10-11-039	8/3/2010	14:10	39	2 32	NA	NA	NA	NA.	NA	67200	66400	0.74.)	NA.	2610	NA	2120	NA	NΛ	NA.
	GP-10-11-049	8/3/2010	15:15	49	271	NA	NA.	NA	NA	NA	164000	49300	68.3	NΛ	13200	NA	5240	NA.	NA	NA
	DUP3-080310	8/3/2010	15)15	10	254	NA	NA.	NA	NA	NA	149000	52200	58	NA	9680	NA	5260	NA	NA	NA
	GP-10-11-059	8/3/2010	19:00	55	264	< 0.744	NA.	19,5	NA .	0.72 1	148000	28500	76.6	< 0.200	15600	3930	7700	5580	NA NA	0.09013
	GP-10-11-064	8/4/2010	14:30		744		1000000	100 1000			was transfer	10.000	1000	100000	100000000000000000000000000000000000000	7570 J	7160	The second second		
	G):-10-17-004	8/4/2///0	-11:50	64	- 744	0.6	NA	3.39	NA	0.49 J	180000	3440	65.2	0.18.1	30600 J	(3/01)	7100	1,0011	- NA	0.03814
GP-10-12	GP-10-12-044	8/5/2010	13:05	44	66.9	< 1.86	NA	10.9	NA	< 1.18	122000	83700	496	< 0.500	5900	2080	7180	5860	NA.	0.02717
SH, 11/1/51-2	GP-10-12-054	\$ 5/2010	1500	54	1.4	<1.80	NA.	4.18.1	N1	51.18	N.A.	74800	NA	*11.500	NA	7590	NA	5200	NA.	0.03853
	GP-10-12-065	8/9/2010	8:20	65	NA		NA.					100000000000000000000000000000000000000	100		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		100,700	4400	36.2	
	GP+105127003	8/9/2010		00	14/1	<0.744	- NA	- 1.7.1	NA NA	1,66.0	NA:	10000	NA	0,23 J	NA.	5730	NA	4400	NA.	0.1247
GP-10-13	GP-10-13-039	8/9/2010	14:45	39	136	2,22	NA	1.49	NA	0.32 J	148000	99500	38.9	0.05 J	17600	7600	1950	1380	NA	0,1389
20.000	GP-10-13-049	8/9/2010	17:00	49	NA	2.66	NA	6.98	NA.	2.62	NA	7840	NA	0.54.1	NA.	19200	NA	6700	NA	< 0.01
	GP-10-13-059	8/10/2010	9:05	59	48.4	1.55	NΛ	0.79	NΛ	0.38 J	87100	74500	17	< 0.05	16400	14100	682	592	NA	< 0.01
	GP-10-13-069	8/10/2010	11:15	69	NA	< 1.86	NA.	10,5	NA	< 1.18	NA	79800	NA.	< 0.5	NA.	7960	NA	3630	NA	< 0.01
4 4	- GP-10-13-079	8/10/2010	13:10	79	NA NA	0.26 J	*NA	1.43	NA	0.98	NA.	5580	NA.	0.12 J	NA:	3850	NA NA	218	- NA -	< 0.01
	+ GL-10-13-075	9/10/2010	10.10			0.203	14/1		11/2		. DA	2200	- INA	0.123	INA	3630	INA	210	No.	> 0.01
3P-10-14	GP-10-14-039	8/16/2010	09:50	39	15.2	0.61	NA.	0.31.1	NA	0.27 J	22800	18700	4.17	< 0.050	7610	7010	783	670 J	NA	0.01239
	GP-10-14-049	8/16/2010	11:20	49	7.8:	< 0.744	NΛ	1,51 J	NΛ	< 0.472	66000	66900	3.61	< 0.200	4370	3880	2420	2540	NA	< 0.01
	DUP-081610	8/16/2010	11:20	49	14.2	< 0.744	NA	141	NA	< 0.472	69800	64200	9.02	< 0.200	5130	3750	2510	2440	NA	< 0.013
	GP-10-14-059	8/16/2010	13:00	59	NA	< 1.86	NΛ	13	NA	< 1.18	NA	88200	NA	< 0.500	NA	4730	NA	6800	NA	< 0.01
	GP-10-14-069	8/16/2010	14:35	69	22.1	< 1.86	NA.	21.5	NA	< 1.18	95400	85400	5.56	< 0.500	4250	3020	3700	3540	NA	< (0.0)
	GP-10-14-079	8/17/2010	07.45	79	20.9	<1.86	14.2	8.83	24	<1.18	80300	71800	10.3	0.59 J	5100	3390	5850	5540	<0.0120	0.0566
	- CONTROL ACTUAL	1000 CENTO					7.70			10-4422	A. C. (7)	7,5-307			31123		19650	100000	10.200	200000
GP-10-15	GP-10-15-039	8/11/2010	9:30	39	NA	1.52.1	NA.	8.62	NA	< 0.472	NA	101000	NA.	< 0.200	NA.	4500	NA.	3410	ŅΛ	0.0427
	GP-10-15-049	8/11/2010	11/25	49	5.05.1	< 1.85	NA	31.2	NA	< 1.48	126000	119(00)	2.98.1	< 0.500	7360	6920	10500	10500	NΛ	0.0320
	(31510-155050	8/11/2010	1.1.15.	50	NA	0.51	NI	0.04	1.7	2.02	38.1	300	2.1	0.050	21.	1050	1:4	466	8.1	un(,
SP-10-16	GP=10=16=024	8/17/2010	16:15	24	106	0.22 J	71	2.02	010	20.72.4	52.700)	222	100.7	20.160	Current	1170	7500	102	nn)ett t	20 102
01-10-10	DUP-081710	8/17/2010	16:15	24	113	0.38 J	71 73.2	3.85 4.22	83.8 87.2	0.25 /	56700 59500	323 349	40.7	< 0.050	117000	1170	2500 2650	182	0.04641.1	0.103-
	THE WAY MONEY WAY	The Street Control of	100000			100000000000000000000000000000000000000	2.4			100000000000000000000000000000000000000	200	1.30.0		The second secon	100000000000000000000000000000000000000	100	The second second		100000000000000000000000000000000000000	-95,000,000
	GP-10-16-034	8/18/2010	07:55	34	284	0,22 J	127	3,2	272	0.33.1	145(00)()	138	245	0.063	24700 J	2030	5080	580	0.2714.1	<0.012
	GP-10-16-054	8/18/2010	11:20	54	25	0,43.1	3.84	0.74	23.6	1:45	8900	277	22	0.07 J	4860	3500	180	84	<0.0120	<0.013
	Dup-081810	8/18/2010	11:20	54	30	0.38 J	4.57	0.75	27.4	1.21	11400	300	25,6	0.08 1	5310	3610	200	86	0.03683 J	< 0.013
	GP-10-16-064	8/18/2010	13:40	64	NA	0.36 J	NA.	26	NA	0.47 J	NA	44700	NA	0.13.1	NA	6080	NA	777	NA	< 0.012
	GP-10-16-074	8/19/2010	07:45	74	44.2	0.75	6.41	4.66	14.5	0.86	75900	64200	4.79	0.07 J	12800	11800	1420 J	1330 J	< 0.012	< 0.01
	GP-10-16-084	8/19/2010	09:40	84	10.5	< 0.744	7.11	5.45	9.33	0.61 J	20600	17200	1.73.1	< 0.2	18900	18200	3120	2920	< 0.012	< ().()
	DUP-081910	8/19/2010	09:40	84	12.7	< 0.744	7.3	5.56	9.19	1.04.1	21500	17400	2.23	0.2 J	19700	18300	3130	2990	< 0.012	< 0.01
	GP-10-16-094	8/19/2010	12:35	94	48.8	< 0.186	5.08	1.54	192	4.32	17500	625	8.58	0.1.1	5320	4100	620	368	< 0.012	< 0.01
3P-10-17	GP-10-17-009	8/2/2010	11:40	9	NA	NA.	NA.	NA.	NA.	NA.	1900 T	1620	NA	NA	MA	NI A	NIA	N/A	NA	NIA
ar their	GP-10-17-019	8/2/2010	12:20	(9	NA.	NA.	NA.	NA NA	NA NA	NA NA	1800 J 1870	1620 1800	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	DUP-080210	8/2/2010	12:20	19																
	GP-10-17-029	8/2/2010	16:00	79	NA NA	NA NA	NA NA	NA NA	NA.	NA NA	1840	1870	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA
			7.50.00								1810	1240	NA NA		NA NA	NA NA	-			NA NA
	GP-10-17-039	8/2/2010	16:45	39	NA	NA	NA	NA	NA	NA	65200	60700	NA	NA	NA	NA	NA	NA	NA.	NA
	GP-10-17-049	8/2/2010	17:30	49	NA	NA.	NA	NA	NΛ	NA.	10100	5210	NA	NA	NA.	NA.	NA.	NA	NA	NA
	GP-10-17-056	8/2/2010	17:45	56	NA	NA	NA.	NA	NA	NA	30600	6100	NA	NA	NA.	N.A	NA.	NA	NA.	NA
GP-10-18	GP-10-18-007	8/2/2010	18:34	7	NA	NA.	NA.	NA	NA	NA	1390	1360	NA	NA	NA	NA.	NA.	NA.	NA.	NA
	GP-10-18-017	8/3/2010	8:25	17	NA.	NA.	NA	NA	NA	NA	1190	857	NA	NA.	NA.	NA.	NA	NA	NA.	NA.
	GP-10-18-027	8/3/2010	9:00	27	NA	NA.	NA.	NA.	NA	NA NA	35400	32000	NA	NA.	NA	NA	NA.	NA.	NA.	NA NA
	DUP-080310	8/3/2010	9:00	27	NA.	NA.	NA.	NA.	NA	NA.	34600	32800	NA	NA.	NA.	NA.	NA.	NA NA	NA.	NA NA
	GP-10-18-037	8/3/2010	11:00	37	NA.	NA.	NA.	NA.	200	A	100 to 10	18800			7.6		NA.	III I III III II VOLI II I		72.3
	GP-10-18-047	8/3/2010	12:10	47	NA NA	NA NA	NA.	NA NA	NA NA	NA NA	21300 35200	32300	NA NA	NA NA	NA NA	NA.	NA NA	NA NA	NA NA	NA NA
	-30 m. 32 cast.	12-3/2982	1977		1330	7.00				5,0,3	0.000	F 16 (1)		500.5			- 434	1.70		
GP-10-19	GP-10-19-009	8/3/2010	14:35	9	NA	NA:	NA	NA	NA	NA:	1040	908	NA	NA:	NA.	NA.	NA.	NA	NA.	NA
	DUP2-080310	8/3/2010	14:35	9	NA	NA.	NA.	NA	NA	NA	1030	982	NA	NA.	NA	NA.	NA.	NA	NA.	NA
	GP-10-19-019	8/3/2010	15:15	19	NA	NA	NA	NA	NA	NA.	3680	831	NA	NA	NA	NA	NA	NA.	NA.	NA.
	GP-10-19-029	8/3/2010	16:05	29	NA	NA.	NA.	NA	NA	NA	89800	73300	NA	NA	NA	NA	NA	NA.	NA.	NA
	GP-10-19-039	8/3/2010	17:00	39	NA	NA.	NA	NA	NA	NA	65600	58800	NA	NA.	NA	NΛ	NA	NA.	NA.	NA
	GP-10-19-046	8/3/2010	18:15	46	NA.	NA.	NA	NA NA	NA	NA.	14400	4280	The Land Control of the Control		NA.	NA.	NA NA	NA.	NA.	NA
	STEENS LEGIS	W.Sr.2010	1000	70	(36)	1977	1375	1.475	0.73	OI/A	1.49000	7.2014	NA	NA.	1373	1875	1373	1967	1975	1974

I AB).E 2 Groundwater Profile Results Shepley's Hill Landfill, Devens, MA

Boring Location	Sample 1D	Date	Time (Military Format)	Depth	Chro	mium	C	balt	Co	pper	Iron		Lead		Magnesium		Manganese		Mercury	
					Total	Dissolved	Total	Dissolved	Total Dissolved		Total	Dissolved		Dissolved	Total Dissolve		Total	Dissolved	Total	-
					(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	100000000000000000000000000000000000000	100000000000000000000000000000000000000	Dissolve
GP-10-20	GP-10-20-009	8/4/2010	9:30	9	NA	NA.	NΛ	NΛ	NA	NA.	2000	1260						(ug/L)	(ug/L)	(ug/L
	GP-10-20-019	8/4/2010	10:10	19	3.25	0.51	NA.	NA.	NA	2.5	100000000000000000000000000000000000000		NA	NA	NA	N/A	NA	NA	NA.	NA
	DUP-0804(0	8/4/2010	10:10	19	3.31	0.43.1	NA	2.09	-	- NA	2910	1500	0.79 1	0.06.1	1840	1570	489	920	NA .	NA
	GP-10-20-029	8/4/2010	1 (.90	29	NA				NΛ	2.50	2630	1630	(),99 J	< 0,030	1750	1620	949	933	NA.	< 0.012
	GP-10-20-039	8/4/2010	Company of the Compan	Perfect Cold (Cold Cold Cold Cold Cold Cold Cold Cold		NA -	NA.	NA NA	NΛ	NA	53000	56800	NA	NA.	NA	NA	NA	NA	N.A.	NA.
	VIII-10-20-059	8/4/2010	1,3:00	39	NA	NA	NA	NA	NA	NA	16800	13300	NA	NA	NA	NA	NA.	NA.	NA	NA
OP (0.3)	CD 10 31 70 7	2000000000	1000		-															
GP-10-21	GP-10-21-011	8/4/2010	15:05	III	NA	NA	NA	NA.	NA	NA.	2550	501	NA	NA	NA	NA.	NA	NA	NA.	NA
	GP-10-21-021	State 2010	15:45	21	3.23	0.43.1	NN	NA	NA	NA	1.730	984	0.531	< 0.010	2760	2580	1050	1020 J	NA	NA
	DUP2-080410	8/4/2010	15/45	21	2,76	0.52 J	NA	NA.	NΛ	NΛ	1550	1030	0.93	< 0.100	2690	2780	1020	1080	NA	NA
	GP-10-21-031	8/4/2010	16;30	31	NA.	NA.	NA	NA	NA	NA	3100	1840	NA.	NΛ	NA	NA	NA	NA	NA	NA
	GP-10-21-041	8/4/2010	17:00	41	NA	NA .	NA	NA.	NA	NA	42500	43700	NA.	NΛ	NA	NA	NA	NA.	NA	NA
	GP-10-21-051	8/4/2010	18:05	51	NA	NA.	NA	NA	NA	NA	11900	6320	NA	NA	NA	NΛ	NA.	NA.	NA	A STATE OF THE PARTY OF THE PAR
	GP-10-21-060	8/4/2010	192(B)	60	NA	NA.	NA	NA 1	NA	NA.	21200	15300	NA	NA.	NA	NI	NA.	NA	NA.	NA.
	14										11300	15,5,7,7	- 22	100	14.1	N.A	38.7	387	14.7	N.A
GP-10-22	GP-10-22-011	8/10/2010	14:40	II-	NA.	NA.	' NA	NA	NA	NA	844	753	NA	NA	NA	NA .	NIA	* NIA	MA	AVA
40	GP-10-22-021	8/10/2010	15:00	21	NA.	NA	NA	NA .	NA	'NA -	2310	1120	NA NA	'NA	- NA	NA .	NA NA	NA.	NA	NA.
	GP-10-22-031	8/10/2010	15:50	31	NA	NA	NA	NA	NΛ	NA NA	3240	1780	100000	I British Andrews	44			. NA	NA	NA
	GP-10-22-041	8/10/2010	16:30	41	NA	NA.	NA	NA.	NA	NA NA			NA.	NA_	NA	NA	NA	NA	NA	NA
	GP-10-22-051	8/10/2010	17:30	51	NA.	NA	NA.	NA NA		-	35300	36100	NA NA	NA .	NA.	NA	NA	NA.	NA	NA
	GP-10-22-061	8/10/2010	18:30	61	NA.	NA	NA.	alc'tAt	NA	NA	7580	5010	NA	NA	NA	NA	NA	NA	NA	NA.
	01.111.54.401	Br10/2010	18,50	01	1975	N/A	N/A	NA.	NA NA	NA	6750	4490	NA	NA	NA	NA_	NA	NA	NA.	NA
GP-10-23	GP-10-23-017	8/5/2010	11:00	17	10.12.1	021	N/A	110	177		2116	-								
1.0-111-2	DUP-080510	8/5/2010	11:00	17	0.331	0.21	NA _	NΛ	NA	NA	1110	1040	0.12.1	0.06 J	1450	1450	2.1	21,1	NA	NA
		The state of the s	0.000		0.46.1	0.22 J	NA	0.37.1	NA	0.491	1180	1070	0.111	<0.050	1540	1530	23.9	21.8	NA	0.1147
	GP-10-23-027	8/5/2010	11:45	27	5,24	<0.372	NA	NA NA	NV	NA	2170	701	1.62	<0.100	1760	1640	189	172	NA	NΛ
	GP-(0-33-037	875/2010	12:25	37	NA	NA	NA	NA	NI	NA	5400	1890	NA	394	NA.	NA.	NA	NA.	NA	NA
	400-10-23-047	3(5,2010)	(4:20	4.	NI	74.5	NA	NV	[V;-\	NA	78500	-784000	14	1 16	NA	5.1	14	NI	N.V	NA
	(ip-)11-23-1157	852010	16:05	57	32.4	0.930	NI	NI	NA	N.A.	73200	68400	3.15	<(1, 250)	(5700)	15400	3660	3730	NX	NA.
	DOI:3-080210	8/5/2010	16:05	.57	45	0.951	NA.	27.5	NA	<0.590	82000	70000	4,25	<(),250	17300	15600	4050	3820	NA	0,07912
CH 10 01	ALISTA III WANTAN A	11.55.57					NA	-			-				200		11.2, Jul 64	5 NEWS		130/1237
GP-10-24	GP-10-24-015	8/9/2010	15:44	15	0.57.1	< 0.372	NA	NA	NA	NΛ	928	758	0.161	<0.100	2220	2090	28,1	24.9	NA.	NA.
	DUP-080910	8/9/2010	15:44	15	0.511	< 0.372	NA.	0.42.1	NA	0.62 J	880	765	0.161	<0.100	2200	2210	26.7	30,6	NA	< 0.012
	GP-10-24-025	8/9/2010	16;30	25	NA.	NA	NA	NA	NA	NA	2260	1180	NA	NA.	NA	NA	NA	NA.	NA	NA
	GP-10-24-035	8/9/2010	17:05	35	NA.	NA.	NA	NA	NA	NA	5550	2630	NA	NA.	NA	NA	NA	NA	NA	NA.
	GP-10-24-045	8/9/2010	17:45	45	NA	NA	NA	NA	N2C	NA	99000	100000	NA	NΛ	NA	NA	NA	NA	NA.	NA.
	GP-10-24-055	8/9/2010	18:30	55	NA	NA	NA.	NA	NA	NA	91100	81500	NΛ	NA	NA	NA	NA	NA	NA	NA.
																2.00	7,000	3.00	1.00.0	1474
GP-10-25	GP-10-25-025	8/10/2010	10:00	25	NA	NA	NA	NA	NA	NA	35700	1770 J	NA	NA	NA	NA	NA	NA	NA	NA.
	GP-10-25-035	8/10/2010	10:45	35	74.3	1.08	NA	NA	NA	NA	15600	2250	25.5	0.153	3420	2200	801	618	NA	JAPA.
	DUP-081010	8/10/2010	10:45	35	74.1	0.94 J	NA	1.15	NA	0.72.1	15300	2320	25.7	< 0.1	3350	2280	772	658	NA.	< 0.013
	GP-10-25-045	8/10/2010	11:50	45	55	0.781	NA.	NA	NA	NA	76700	71000	13.8	< 0.2	5530	5170	4540	4550	Annual Contract	< 0,01
	DUP2-081010	8/10/2010	11:50	45	57.4	< 0.744	NA	45.2	NA	< 0.472	76700	69000	12.5	< 0.2	3510	5070	4460	4430	NA NA	>001
	11.04.1.00				4000	100000		1200		1.500,000	10000	45044	12.5	- 0.2	22111	20.10	9400	4430	NA	< 0.01
GP-10-26	GP-10-26-011	8/11/2010	9:20		NA	< 0.186	NA	NΛ	NΛ	NA	854	716.1	0.14.1	0.08 J	1240	1190	67.1	59.8	Ari	NIA.
	GP-10-26-021	8/11/2010	10:20	21	NΛ	0.32.3	NA	NA	NiA	NA	2090	1170	0.63	0.13.1	1960				NA	NA
	DUP-081110	8/11/2010	10:20	21	3 99	0.22 J	NA	1.31	N/A	0.63	1800	1140	0.54			1990	129	103	NA	NA
	GP-10-26-031	8/11/2010	10:35	31	NA.	NA	NA	NA NA	NA	NA.		At the Market	1-2-A	< 0.050	1820	1900	120	103	NA.	< 0.013
	GP-10-26-041	8/11/2010	11:05	41	NA.		-				4180	1350	NA.	NA NA	NA	NA	NA	NA.	NA.	NA
	GP-10-26-051	8/11/2010	12:15	51	10	NA	NA.	NA NA	NA	NA	6290	1940	NA	NA	NA	NA	NA	NA	NA	NA
	GP-10-26-061	8/11/2010	13:40		NA NA	NA	NA NA	NA	NA	NA	7180	3140	NA.	NA.	NA	NA	NA.	NA.	NA	NA.
			7457 75	61	NA.	NA.	NΛ	NA	NV	NA	11900	3840	NA.	NΛ	NA	NA.	NA	NA	NA	NA
	GP-10-26-071	8/11/2010	14:10	71	NA.	NA.	NA	NA	NA NA	NA	6430	3310	NA	NA	NA	NA	NA.	NA	NA	NA
GP-10-27	GP-10-27-025	8/11/2010	16.05	24	3.20	0.244		100	- 50											
	DUP2-081110	8/11/2010	16:05 16:05	25	3.71	0.34 J	NA	NA	N.A	NA	1640	773	2,03	0.08 J	1140	960	56.2	44.9	NA	NA
		The second second		25	3.16	0.33.1	NA	0.56	NA	0.44 .1	1510	804	1,73	0.06.1	1120	984	53	45.5	NA	< 0.013
	GP-10-27-035	8/11/2010	17:00	35	NA.	NA	NA	NA	NA	NA	15000	1100	NΛ	NA	NA	NA	NA	NA.	NA	NA
	GP-10-27-045	8/11/2010	17;25	45	NA	NA	NA	NΛ	NA	NA	88800	83800	NA	NΛ	NA.	NA	NA	NA	NA	NA
	GP-10-27-055	8/11/2010	17:50	55	NA	NA	NA	NA	NA.	NA	84100	91300	NΛ	NA	NA	NΛ	NA	NA	NA.	NA.
	GP-10-27-065	8/11/2010	18:45	65	NA	NA:	NA	NA	NA	NA	73400	61300	NΛ	NA	NA	NA	NA	NA	NA	NA
		1				1					-		1		100000000000000000000000000000000000000		- 146		1374	344

TABLE 2 Groundwater Profile Results Shepley's Hill Landfill, Devens, MA

- N. S.						ckel	Pota	asium	Sele	nium	S	ilver	So	dium	Tha	allium	Van	adium	7	Line
Boring	44.5.5.5.5.		Time		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolve
Location	Sample ID	Date	(Military Format)	Depth	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L.
GP-10-11	GP-10-11-039	8/3/2010	14:10	39	9.34	NA	3070	NA	NA	NA	NA.	NΛ	8650	NA	NA	NA	NΛ	NA .	NA	NA
	GP-10-11-049	8/3/2010	15:15	49	134	NA	11900	NA	NA	NA	NA	NA	16600	NA	NA	NA	NA	NA	NA	NA
	DUP3-080310	8/3/2010	15:15	49	112	NA	10700	NA	NA.	NA	NA	NA	16000	NA	NA	NA	NA	NA	NA	NA.
1	GP-10-11-059	8/3/2010	19:00	55	142	5.81	10500	4240	NA	< 1.62	NA	< (),34()	25300	20000	NA.	< 0.124	NA	< 0.308	NA	8.81
	GP-10-11-064	8/4/2010	11:30	64	207	7.33	40200	25400 J	NΛ	0.42 J	NΛ	< 0.085	61200	49200 J	NA	< 0.031	NA	0.2 J	NA NA	1.81
	The second second	1	10000	-	10	10000000		255-707/		1,576.2			01200	172007	and the same of	- 0.051	1974	0.23	14/4	1,67
GP-10-12	GP-10-12-044 GP-10-12-054	8/5/2010	13:05	44 54	56.1	20.3	7630	4670	NA	< 4.06	NA_	< 0.850	5160	3650	NA	< 0.310	NA	< 0.770	NA	44.4
		8.5-2010	15:00		NA	10,6	NA	=3.40	N/I	-4.06	NI	0.850	NA.	8450	N/	*:0.310	NI	-0.370	N.A	38.2
	_ GP-10-12-065	8/9/2010	8:20	65	- NA	8,34	NA	17200	NΛ	<1.62	NA_	<0,340	NA .	31000	NA.	< 0.124	NA	<0.308	NA	24.5
GP-10-13	GP-10-13-039	8/9/2010	14:45	39	72.1	4.85	19000	14300	NA	0.57 J	NA	<0.085	19400	16800	NA	<0.031	NA	0.71	NA	4.39
	GP-10-13-049	8/9/2010	17:00	49	NA	6.88	NA	19200	NA	< 2.03	NA	< 0.425	NA	51600	NA	< 0.155	NA	< 0.385	NA	12.9
	GP-10-13-059	8/10/2010	9:05	59	35.4	4.75	18400	17400	NA	0.57 J	NA	< 0.085	26900	24600	NA	< 0.031	NA	0.34 J	NA	1.98
	.GP-10-13-069	8/10/2010	11:15	69	NA	9.15	NA	9000	NA	< 4.06	NA	< 0.85	NA	13900	NA	< 0.31	NA	< 0.77	NA	26.6
16	GP-10-13-079	8/10/2010	13:10	79	" NA	4.42	¹ NA	4700	NA.	< 0.406	NA.	< 0.085	·NA	35900 '	NA.	< 0.031 -	'NÁ	0.14 J	NA:	7.59
CD 10 14	CD 10 14 020	0.00.00.00	×. ×.	4.	1 1			200			. 41	1				J				
GP-10-14	GP-10-14-039 GP-10-14-049	8/16/2010 8/16/2010	09:50 11:20	39 49	11.2 9.25	3.05	4860 7640	4160 7140	NA NA	0.54 J < 1.62	NA NA	< 0.085	16800	17800	NA NA	< 0.031	NA NA	0.36 J	NA	4.59
	DUP-081610	8/16/2010	11:20	49	18.1	2.95	8080	6940	NA NA		NA NA	< 0.340	7280	7780	NA NA	< 0.124	NΛ	1.81 J	NΛ	< 6,.
	GP-10-14-059	8/16/2010	ACM250		1000000		1 2 2 2 2 2	2000	35.44	< 1.62	NA	< 0.340	7600	7390	NA	< 0.124	NA	1.62 J	NA	< 6.
		-	13:00	59	NA 21.2	4.75 J	NA	6940	NA	< 4.06	NA	< 0.850	NA	14000	NA	< 0.310	NA	< 0.770	NA	23.6
	GP-10-14-069	8/16/2010	14:35	69	21,2	8.73	7860	6680	NA	< 4.06	NA	< 0.850	5580	5180	NA	< 0.310	NA	< 0.770	NΛ	< 16
	GP-10-14-079	8/17/2010	07:45	79	27.6	14	5480	3780	<4.06	<4.06	<0.850	< 0.850	6270	5720	<0,310	<0.310	10.1	<0.770	73.2	40.2
GP-10-15	GP-10-15-039	8/11/2010	9:30	39	NA	8.06	NA.	8240	NΛ	< 1.62	NA	< 0.340	NA	7280	NA	< 0.124	NA	< 0.308	NA	9.26
	GP-10-15-049	8/11/2010	11:25	49	23.5	19.5	8130	7520	NA	< 4.06	NA	< 0.850	12200	12000	NA	< 0.310	NΛ	< 0.770	NΛ	18,7
	GP-10-15-050	\$ 11 2010	1.4:45	Şn	NA	5 lo	NA.	6100	11%	0.406	2/7	0.085	NI	32,300	NY	0.04.1	NI	2.23	11	3.05
GP-10-16	GP-10-16-024	8/17/2010	16:15	24	130	4.82	8990	2520	3.17 J	<0.406	0.38.1	<0.085	1050	2000	0.7.1.6	1000 E	14.7	0.12.1	1.72	
SIL TILLITO	DUP-081710	8/17/2010	16:15	24	136	5.22	9420	2700	2.9.1	< 0.406	< 0.34	10 march 10 m	4950 4880	2960	0.64.1	0.04 J	46.6	0.13 J	157	3.53
	GP-10-16-034	8/18/2010	07:55	34	229	2,93	17100	6630	6.39 1	9.75	100000000000000000000000000000000000000	< 0.085		3060	0,613	< 0.031	50.2	0.14.1	160	3,36
	GP-10-16-054	8/18/2010	11:20	54	14.4	2.21	5840	1	1000	<0.406	0.58 J	<0.085	17600	9100	1,91.1	0.13	109	0,2 J	298	3,37
	Dup-081810	8/18/2010	11:20	54	18	2.27	6060	4810	0.82 J	0.43 J	0.29 J	<0.085	35600	36000	0.1.1	0.04 J	7.83	0.29 J	40.2	6.0
	GP-10-16-064	8/18/2010	13:40	64	100	10000		5040	0.93 J	<0.406	<0.085	<0.085	35800	36700	0.1 J	<0.031	10.4	0.42 J	47.5	4.15
					NA 24.6	12.8	NA 21500 I	12000	NA	<0.406	NA	<0.085	NA	16600	NA	<0.031	NA	0.21 J	NA	3.97
	GP-10-16-074	8/19/2010	07:45	74	24.6	16.6	21500 J	20400 J	0.64 J	0.47 J	< 0.085	< 0.085	33000 J	31700 J	0.06 J	< 0.031	3.08	0.1 J	24	6.8
	GP-10-16-084	8/19/2010	09:40	84	12.2	7.8	6240	5370	< 1.62	< 1.62	< 0.34	< 0.34	45200	42200	< 0.124	< 0.124	1.71 J	< 0.308	13.9 J	14.2
	DUP-081910	8/19/2010	09:40	84	13.7	8.2	6570	5500	< 1.62	< 1.62	< 0.34	< 0.34	45200	42100	< 0.124	< 0.124	2.54	< 0.308	13.9.1	14.4
	GP-10-16-094	8/19/2010	12:35	94	23.3	8.07	6660	5210	0.58 J	< 0.406	< 0.085	< 0.085	36600	34200	0.07 J	< 0.031	3.78	0.22 J	24.7	4.84
GP-10-17	GP-10-17-009	8/2/2010	11:40	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA	NA
	GP-10-17-019	8/2/2010	12:20	19	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/
	DUP-080210	8/2/2010	12:20	19	NA	NA	NA	NA	NA	NA	NA	NA	NΛ	NA	NA.	NA	NA	NA	NA	NA
	GP-10-17-029	8/2/2010	16:00	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	GP-10-17-039	8/2/2010	16:45	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	GP-10-17-049	8/2/2010	17:30	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.
	GP-10-17-056	8/2/2010	17:45	56	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA.	NA	NA NA
GP-10-18	GP-10-18-007	8/2/2010	18:34	7	NA	NA	NA	NA	NA	NIA	NA	D14	N/4	N/2	21.	100				
31,-10,10	GP-10-18-017	8/3/2010	8:25	17	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA.	NA NA	NA NA	NA NA	NA NA	N/
	GP-10-18-027	8/3/2010	9:00	27	NA NA	NA NA	NA NA	20%	5,325		2007		NA NA	NA NA	NA.	NA	NA	NA	NA	NA.
	DUP-080310	8/3/2010	9:00	27	NA NA	NA NA		NA NA	NA NA	NA NA	NA	NA	NA	NA NA	NA	NA	NA	NA	NA	N/
	GP-10-18-037	8/3/2010	11:00	37	100	2000	NA	NA NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.
	GP-10-18-047	8/3/2010	12:10	47	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	N/
	40 14 14 4 14	27,20,0	15118			ear.	1974		14/4	MA	INA	INZA	IVA	NA	NA	NA NA	NA	NA	NA	N/
GP-10-19	GP-10-19-009	8/3/2010	14:35	9	NA	NA.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/
	DUP2-080310	8/3/2010	14:35	9	NA.	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA NA	NA NA	1 200	30.00	0.72
	GP-10-19-019	8/3/2010	15:15	19	NA	NA	NA	NA	NA	NA.	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	N/
	GP-10-19-029	8/3/2010	16:05	29	NA NA	NA NA	NA NA	NA	NA.	NA NA	The second second				-			NA NA	NA NA	N/
	GP-10-19-039	8/3/2010	17:00	39	NA NA	7/37	10.00	2000		-CA	NA NA	NA NA	NA.	NA.	NA	NA	NA	NA	NA	N/
	The second second second	Committee than the little	THE RESERVE AND ADDRESS.	-	-	NA NA	NA	NA NA	NA	NA .	NA	NA	NA	NA	NΛ	NA	NA	NΛ	NA	NA
	GP-10-19-046	8/3/2010	18:15	46	NA	NA	NA	NA.	NA	NA.	NA	NA	NA	NA.	NA	NA	NA	NA	NA	N/

TABLE 2 Groundwater Profile Results Shepley's Hill Landfill, Devens, MA

					Ni	ekel	Pot	ısium	Sele	nium	S	ilver	Sne	dium	The	allium	Ven	adium	79	ine
Boring	and the second		Time		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	1		_
Location	Sample ID	Date	(Military Format)	Depth	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	Dissolved (ug/L)	Total	Dissolve
GP-10-20	GP-10-20-009	8/4/2010	9:30	()	NA	NA	NA	NA	NΛ	NA.	NA.	NA.	NA	NΛ	NA.	_			(ug/L)	(ug/L)
	GP-10-20-019	8/4/2010	10:10	19	8.04	4.71	4290	3700	NA	NA.	NA	NA	1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Allen Arthur	36-5-	NΛ	NΛ	NΛ	NA	NA.
	DUP-080410	8/4/2010	10:10	19	7.24	5.21	1170	3700	NA.	In Proceedings and Complemental Pro-		- 100 C 100 pm	129000	119000	NA	NA	NA	NA	NA	NA _
	GP-10-20-024	8/4/2010	11:00	20	77.2	2000		100000		0.59 J	NΛ	< 0.085	128000	122000	NA	0.07.1	NΛ	0,15.1	NA	5.18
	and the property of the party o	1998 3 10 10 10 10			NA NA	- NA	NΛ	NA.	NA.	NA.	NA.	NΛ	NΛ	NA	NA .	NA.	NA	NA	NA.	NA
	GP-10-20-039	8/4/2010	13:00	30	NA	NA.	NA	NA	NA	NA.	NA.	NA	NA	NΛ	NA	NA.	NA.	NA	NA	NA
GP-10-21	GP-10-21-011	8/4/2010	15.05	2.0	N/A	804	211		111											
(11-11-21	GP-10-21-02)	8/4/2010	15:05 15:48	71	NΛ	NA.	NV	NA	NΛ	NA	NA.	NA.	NA	NA	NΛ	NA.	NA	NA	NA.	NA.
	DUP2-080410	The state of the s	4.506 K		851	7.25	4690	4520	NA	NA	No.	NA	155000	153000	NA.	NA	NzV	NA:	NA	NA
	A STATE OF THE RESERVE AND ADDRESS OF THE RESERV	8/4/2010	15:45	21	8.01	7.48	454()	4790	NA	NA.	NV	NA.	147000	149000	NA.	NA:	NA	NA	NA	NA
	GP-10-21-031	8/4/2010	16:30	31	NA	NA	NA	NA	NA	NA	NA.	NA.	NA.	NA	NA	NA	NA	NA	NA	NA
	GP-10-21-041	8/4/2010	17:00	41	NA	NA	NA	NA	NA	NA	NA.	NA.	NA	NA	NA.	NA.	NA.	NA	NA	NA
	GP-10-21-051	8/4/2010	18:05	51	NA.	NA.	NΛ	NΛ	NA	NA.	NA.	NA.	NA.	NA.	NA	NA.	NA	NA.	NA	NA
	GP-10-21-060	8/4/2010	19:00	(61)	NA	NA	NA	NV	NΛ	NA	NΛ	NA	NΛ	NA.	NA.	NA	NA.	NA	NA.	NA
GP-10-22	GP-10-22-01f	8/10/2010	14/40		1 377	- 20	7 223	1	-				100				- 200			
GP-10-22	GP-10-22-021		14:40	11	NA	NA NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA.	NA	NA
		8/10/2010	.15:00	21	NA.	· NA	'NA -	NA	NA '	NA .	NA "	. NV	NA	NA *	-NA	. NA	" NA	NA -	NA ·	NA'
	GP-10-22-031	8/10/2010	15:50	31	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NΛ	NA.	ÑA	NA
	GP-10-22-041	8/10/2010	16:30	41	NA NA	NA	NA	NA	NA	NA	NA.	NA.	NA	NA	NA	NA.	NA	NA.	NA.	NA
	GP-10-22-051	8/10/2010	17:30	51	NA	NA	NA	NA	NA	NA.	NA.	NA.	NA.	NA.	NA	NA	NA.	NΛ	NA	NA.
	GP-10-22-061	8/10/2010	18:30	61	NA	NA _	NA	NA	NA	NA	NA.	NA.	NA	NA	NA.	NA.	. NA	NA	NA	NA
GP-10-23	GP-10-23-017	8/5/2010	00:11	17	2.00	1.02	2240	7170												
dism-23	DUP-080510	8/5/2010			1.04	1.83	2260	2130	NA	NA_	NA.	NA	67100	65000	NA.	NA:	NA	NA	NA	NA.
			11:00	17	2.04	1.87	2330	2300	NA	<0.406	NA	<0.085	71000	69100	NA.	<0.031	NA	0.12.1	NA	1.95.1
	GP-10-23-027	8/5/2010	11:45	27	1.88	2.13	4670	4640	NA	NA	NA	NA	218000	217000 J	NA.	NA.	NA	NA	NA	NA
	GP-10-23-037	8/5/2010	12:25	37	NA	NV.	N.A	NA	NA.	N.A.	NA.	NA	NΛ	NA	NA.	NA.	NA.	NA	NA.	NA
	(1P-1)(-23-)(4 -	\$5.2010	1.4:20	1	1.15	3.48	1.16	1.4	1. 1.	18	1. 6	is.A	NA	1.20	NA	N.V	1.6	1.56	1.4	8.4
	GP-10-23-057	8/5/2010	16:05	37	34.6	24.4	12000	11300	NI	NA.	N.A.	N.A	36600	36100	NA	NA	NA	NA	N ₂ \	N.V
	DUP2-080510	8/5/2010	16:05	57	39,0	25	13300	11500	NA_	<2.03	NA.	<0.425	38000	37200	NA	<0.155	NA.	< 0.385	NA	32.6
GP-10-24	60.10.21.015	B/0/2/110	15.16													500000. 14,000				
C117-110-24	GP-10-24-015 DUP-080910	8/9/2010 8/9/2010	15:44 15:44	15 15	1.5	1.34	3890	3690	NA	N.A	NA	NA.	147000	135000	NA_	- NA	NA.	NA	MA	NA-
	The state of the s					1.37	3810	3920	NΛ	< 0.812	NA.	<0, [76]	147000	143000	NA.	<0.062	NA.	< 0.154	NA.	6.33 /
	GP-10-24-025	8/9/2010	16:30	25	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA.	NA	NA.	NA	NA	NA	NA
	GP-10-24-035	8/9/2010	17:05	35	NA	NA	NA	NA	NA_	NA.	NA	NA	NA	NA.	NA.	NA.	NA.	NA	NA	NA
	GP-10-24-045	8/9/2010	17:45	45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA
	GP-10-24-055	8/9/2010	18:30	55	NA NA	NA	NΛ	NA NA	NA	NA	NA NA	NA	NA.	NA	NA	NA	NA	NA	NA	NA
GP-10-25	GP-10-25-025	8/10/2010	10:00	25	5) A	50.4	211		111											
G1-10-23	GP-10-25-035	8/10/2010	10:45	35	NA 28.2	6.42	NA 6650	NA 5240	NA	NA.	NA.	NA	NA .	NA	NA.	NA	NA	NA.	NA:	NA
	DUP-081010	8/10/2010	10:45	35		34.72		5240	NA	NA	NA	NA	198000	186000	NA	NA.	NA	NA	NA.	NA.
	GP-10-25-045				27.4	6.51	6500	5590	NA	< 0.812	NA.	< 0.17	196000	202000	NA.	0.11 J	NA	< 0.154	NA	15:7
	The second secon	8/10/2010	1);50	45	23.5	9,54	7680	7120	NA	NA	NA	NA	52500	51900	NA	NA	NA.	NA.	NA	NA.
	DUP2-081010	8/10/2010	11:50	45	24.5	9.69	7790	7040	NA	< 1.62	NA	< () 34	50700	52600	NA	0,21 J	NA	< 0.308	NA	35.9
GP-10-26	GP-10-26-011	8/11/2010	9:20	11	3.15	2.99	3570	3390	NΛ	NA.	NA	NIA	12100	14700	NI.A	***	***	533	146	
	GP-10-26-021	8/11/2010	10:20	21	5.68	4.15	3160	3280	NA	NA NA	NA NA	NA NA	13100	14300	NA	NΛ	NA.	NA	NA	NA
	DUP-081110	8/11/2010	10:20	21	4,99	3.98	3020			THE RESERVE AND ADDRESS OF THE PERSON NAMED IN	1	NA - P. P. P. P.	33100	35000	NA.	NA	NA	NA.	NA NA	NA
	GP-10-26-031	8/11/2010	10:35	31		40.00		3210	NA.	0.79 J	NA	< 0.085	37300	34200	NA	< 0.031	NA.	0.191	NA.	11.8
		-			NA.	NA NA	NA.	NA_	NA	NA.	NA.	NA	NA	NA NA	NA	NA	NA.	NA	NA	NA
	GP-10-26-041	8/11/2010	11:05	41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA
2	GP-10-26-051	8/11/2010	12:15	51	NA	NA	NA	NA.	NΛ	NΛ	NA.	NA	NA	NΛ	NA	NA.	NA	NA	NA	NA
	GP-10-26-061	8/11/2010	13:40	61	NA	NA	NA	NΛ	NΛ	NA.	NA	NA	NA	NA.	NΛ	NA	NΛ	NA.	NA	NA
	GP-10-26-071	8/11/2010	14:10	71	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA.	NA	NΛ	NA	NA	NA	NA
GP-10-27	GP-10-27-025	8/11/2010	16:05	25	371	0.17	2100	2220	NV	NV:	100	2.0	2000							
3(310-27	DUP2-081110		A 25 4 5		3.71	2,37	3180	3260	NA	NA	NA	NA	55200	52600	NA	NA	NA.	NA	NA	NA
		8/11/2010	16:05	25	3.48	2.17	3160	3210	NA	< 0.406	NA	< 0.085	57400	53000	NA	< 0.031	NA	0.21 J	NA	3,27.1
	GP-10-27-035	8/11/2010	17:00	35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA.	NA.	NA	NA	NA
	GP-10-27-045	8/11/2010	17:25	45	NA	NΛ	NA.	NA	NA.	NA	NA	NΛ	NA	NA.	NΛ	NA	NA	NA	NA	NA
	GP-10-27-055	8/11/2010	17:50	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA
	GP-10-27-065	8/11/2010	18:45	65	NA	NA	NΛ	NΛ	NA	NA	NA	NA	NΛ	NA	NA.	NA	NA	NA	NA	NA.
		The second second			1						-	11-11-11						7.003	1,463	1404

ug/L is micrograms per liter

J means estimated results

TABLE 2 Groundwater Profile Results Shepley's Hill Landfill, Devens, MA

Boring Location	Sample ID	Date	Time (Military Format)	Depth	Turbidity NTU	DO mg/L	рН	Temp Celcius	Spec Cond uS/cni	ORP mV	Color	Hardness mg/l	Alkalinity mg CaCO3/L	TDS mg/l	TSS mg/l	Chloride mg/l	Ammonia mg/l	Nitrite mg/l	Nitrate mg/l
GP-10-11	GP-10-11-039	8/3/2010	14:10	39	14.5	0.44	5.61	16.26	302	56.2	Clear	NA	170	NA	200	21	2.29	< 0.002	0.031.1
Mejwerr	GP-10-11-049	8/3/2010	15:15	19	5373	0.27	6.2	18.09	278	-43.7	Cloudy	NA	180	NA	7700	13	3,36	< 0.002	0.046.1
	DUP3-080310	8/3/2010	15:15	49	NΛ	NA NA	NA	NA.	NA NA	NA.	NA NA	NA	NA NA	NA	NA	NA.	N/A	NA	NA NA
	GP-10-11-059	8/3/2010	19:00	55	203	0.78	6.3	24.09	354	-46.3		NA NA	210	NA NA	13000	25	0.0281 J	< 0.002	0.04 J
		100000000000000000000000000000000000000	20000			1,000,000		CO MIN	439		Cloudy		553					< 0.002	100000000000000000000000000000000000000
	GP-10-11-064	8/4/2010	11:30	64	Max	- 0.11	7.74	20,99	439	-150.4	Silty	NA NA	380	NA	55000	22	129	V 0,002	(),()45,
iP-10-12	GP-10-12-044	8/5/2010	13:05	44	203	0.43	5,97	18,23	385	17.6	Sl Cloudy	NA	230	NA	1300	3.3	3.6	< 0.002	0.028
	GP-10-12-054	8 5 2010	15,00	54	Max	0.16	6.11	21.93	368	-17,1	Silty	NA	220	NA	NA	7.6	3,14	~0,002	0.05
	GP-10-12-065	8/9/2010	8:20	65	Max	0.13	6.79	12,95	543	-103.3	Silty	NA -	240	NA	NΛ	26	1.09	0.01 J	0.14
GP-10-13	GP-10-13-039	8/9/2010	14:45	39	1409	0.18	5.36	21.58	740	101.2	Cloudy	NA	460	NA	2500	-11	14.2	<0.002	0.03
	GP-10-13-049	8/9/2010	17:00	49	144	0.48	6.17	21.68	858	45.5	Cloudy	NA	490	NA	NA	46	17.3	< 0.002	0.024
	GP-10-13-059	8/10/2010	9:05	59	565	0.16	6.4	18.34	800	-33,3	Cloudy	NA	470	NA	890	17	14.3	< 0.002	0.06
	GP-10-13-069	8/10/2010	11:15	69	151	0.81	6.09	21.32	545	-2.1	Cloudy	NA	310	NA	NA	20	5.91	< 0.002	0.07
4 . 10	GP-10-13-079	8/10/2010	13:10	79	128	* 8.68	6.37	21.89	338	- 15.9 .	· Cloudy	· NA	77	NA	NA ·	- 66	0.384	0.01 J	0.37
6. %	1 14		- KO - 1	*	1 .	4.00	- 0	1 - 200					10000			5 W	7.50	1. 1 ×	
iP-10-14	GP-10-14-039	8/16/2010	09:50	39	49.9	0.36	5.54	15.86	510	50.8	Cloudy	NA	300	NA	270	11	11.5	< 0.002	0.04
	GP-10-14-049	8/16/2010	11:20	49	22.5	0.41	5.86	15.99	474	14,9	Clear	NA	290	NΛ	320		7.44	< 0.002	0.028
	DUP-081610	8/16/2010	11:20	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA 0.000	NA
	GP-10-14-059	8/16/2010	13:00	59	1129	0.17	5.86	16.31	553	-0.9	Silty	NA	340	NA	NA	9.6	6.46	< 0.002	0.03
	GP-10-14-069 GP-10-14-079	8/16/2010 8/17/2010	14:35	69 79	38.8	0.18	5.82 6.18	17.71	444 395	-8.7 34.2	Cloudy Clear	NA NA	270 210	NA NA	620 170	3.3 5.7	4.65 2.67	< 0.002 0.01 J	0_014
	(R-10-14-0/9	0/1//2010	117:43	- 19_	20.0	0.31	0.10	14.71	393	34,2	Cical	NA	210	INA	170	3.7	2,07	0.01.5	(7.0)
iP-10-15	GP-10-15-039	8/11/2010	9:30	39	25,52	0.25	5.81	17.99	543	-6.4	Silty	NA	340	NA	NA.	5	7,52	< 0.002	0.06
	GP-10-15-049	8/11/2010	11:25	49	41.3	0.45	6	20.68	589	-40.5	Clear	NA	330	NA	190	12	2,61	< (),()()?	0.05
	GP-10-15-059	2.11.50 br	14.45	50)	20-	5.11	8,3	21.89	313	181.1	Clouds	NA	80	1.1	2.7	201	0,508	1.10,0	0,48
P-10-16	GP-10-16-024	8/17/2010	16:15	24	1235	3.06	6.27	12,58	107	101.1	Silty	NA	33	NA	3900	3.6	0.0455 J	<()_()()2	0.65
	DUP-081710	8/17/2010	16:15	24	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA
	GP-10-16-034	8/18/2010	07:55	34	609	12.11	8.25	13,91	350	78.3	Silty	NA	51	NA -	3000	15	0.079	<0.002	0.24
	GP-10-16-054	8/18/2010	11:20	54	101.4	12.62	7,43	16.85	398	27.4	Cloudy	NA	74	NΛ	160	64	0.173	0,01 J	0.44
	Dup-081810	8/18/2010	11:20	54	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA	NA	NA
	GP-10-16-064	8/18/2010	13:40	64	21,5	2.45	6.57	14.73	492	-78.8	Clear	210	210	NA	NA	7.1	6.98	< 0.002	< 0.0
	GP-10-16-074	8/19/2010	07:45	74	122	0.66	6.94	11.26	720	-140.3	Cloudy	NA	160	NA	390	56	1.71	0.01 J	0.43
	GP-10-16-084	8/19/2010	09:40	84	16.6	0.9	6.95	14.92	837	-104.8	Clear	NA	420	NA	290	43	0.224	0.01 J	< 0.0
	DUP-081910	8/19/2010	09:40	84	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	GP-10-16-094	8/19/2010	12:35	94	180	5.06	6.9	17.45	382	-21.4	Cloudy	NA.	110	NA	170	68	0.159	0.02	0.48
GP-10-17	GP-10-17-009	8/2/2010	11:40	9	20.1	4.91	1.65	14.07	1035	178,2	Clear	NA.	NA.	NA	9.8	NA.	NA	NA	NA
IF-10-17	GP-10-17-019	8/2/2010	12:20	19	NA.	NA	NA	NA NA	NA.	NA	NA.	NA NA	NA NA	NA	43	NA NA	NA NA	NA NA	NA NA
	DUP-080210	8/2/2010	12:20	19	NA NA	NA.	NA NA	NA.	NA NA	NA	NA NA	NA.	NA NA	NA	11	NA	NA NA	NA NA	NA.
	GP-10-17-029	8/2/2010	16:00	29	6.06	2,17	6,01	13.72	747	63.4	Clear	NA NA	NA NA	NA	8,5	NA.	NA NA	NA NA	NA.
	GP-10-17-039	8/2/2010	16:45	39	37.9	0.26	6.83	13.9	542	-138.2	Clear	NA NA	NA NA	NA	95	NA.	NA	NA	NA
	GP-10-17-049	8/2/2010	17:30	49	65.6	1.4	6.52	14.8	670	-28.3	Little Cloudy	NA.	NA NA	NA	290	NA.	NA	NA.	NA NA
	GP-10-17-056	8/2/2010	17:45	56	660	0.24	6.73	14.68	666	-84.3	Cloudy	NA NA	NA NA	NA.	1700	NA NA	NA NA	NA NA	NA NA
iP-10-18	GP-10-18-007	8/2/2010	18:34	7	18.3	0.27	6.06	17,64	729	58.7	Clear	NA	NA NA	NA NA	13	NA NA	NA NA	NA NA	NA NA
	GP-10-18-017	8/3/2010	8:25	17	10.6	0.44	6.14	12.87	673	55.8	Clear	NA	NA	NA	7.5	NA	NA NA	NA NA	NA
	GP-10-18-027	8/3/2010	9:00	27	199	0,44	6.3	13.55	681	-45.1	Little Cloudy	NA	NA	NA	65	NA	NA NA	NA	NA
	DUP-080310	8/3/2010	9:00	27	NA	NA	NA	NA	NA 1833	NA	NA NA	NA	NA	NA	NA	NA	NA	NA	NA
	GP-10-18-037	8/3/2010	11:00	37	84.7	0.44	6,4	13.61	628	-45.5	Little Cloudy	NA NA	NA NA	NA	48	NA NA	NA NA	NA NA	NA NA
	GP-10-18-047	8/3/2010	12:10	47	127	0.45	6.54	14.6	809	-80.7	Little Cloudy	NA	NA	NA	160	NA.	NA	NA	NA.
GP-10-19	GP-10-19-009	8/3/2010	14:35	9	1.1	3,55	5.85	17,73	174	98,5	Clear	NA	NA	NA	<5.0	NA.	NA	NA	NA
	DUP2-080310	8/3/2010	14:35	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA
	GP-10-19-019	8/3/2010	15:15	19	141	2.19	6.01	14.88	759	90.4	Clear	NA	NA	NA	70	NA	NA	NA	NA
	GP-10-19-029	8/3/2010	16:05	29	66.6	0.53	6.64	13.88	682	-(1)	Clear	NA	NA	NA	160	NA	NA	NA	N/
	GP-10-19-039	8/3/2010	17:00	39	36.6	1,65	6,6	15.59	736	-77.7	Clear	NA	NA	NA	89	NA	NΛ	NA	NA.
	GP-10-19-046	8/3/2010	18:15	46	< 1000	1.88	650	14.58	737	-44.1	Cloudy	NA NA	NA NA	NA.	440	NA NA	NA -	NA NA	NA NA
	31.10.175190	3/3/5010	10/13	70	2.15/8/07	1.00	0.50	1 1,50	1.57	4 341	C Really	1504	100	1973	1.50	1383	13.0	13.5	147

TABLE 2 Groundwater Profile Results Shepley's Hill Landfill, Devens, MA

Boring Location	Sample ID	Date	Time (Military Format)	Depth	Turbidity NTU	DO mg/L	11q	Temp Celeius	Spec Cond uS/cm	ORP mV	Color	Hardness	Alkalinity	TDS	TSS	Chloride	Ammonia	Nitrite	Nitrat
GP-10-20	GP-10-20-009	8/4/2010	9,30	9	12.5	6.46	6.22				an an	mg/l	mg CaCO3/1.	mg/l	mg/l	mg/l	mg/l	mg/I	mg/l
r11-10-70	GP-10-20-019	8/4/2010	10:10	19			100000000000000000000000000000000000000	16.7	262	60.4	Clear	NA.	NA	NΑ	150	NA	NA.	NA	NΛ
		T. S. College, Charles	The second second second second	The second secon	17.2	0.67	6.09	14.35	609	50.6	Clear	NA.	NA.	NA	16	NA	NA.	NA	NA
	DUP-080410 GP-10-20-029	8/4/2010	10:10	19	NA	NA	NΛ	NA	NA	NA	NA.	NA.	NA	NA	NA	.NA	NA.	NΛ	NA
	The State of the Control of the Cont	8/4/2010	11:00	29	139	0,33	6.7	13.44	521	-92.8	st. Cloudy	NA	NA	NA	180	NΛ	NA	NA	NΛ
	GP-10-20-039	8/4/2010	13;00	39	91.6	0.37	6,49	13.51	649	-38.8	Clear	NA	NA	NA	120	NA	NA	NΛ	NA
GP=10-21	GP-10-21-011	8/4/2010	15:05	11	54.1	6.33	6.14	15.57	182	101.5	Clear	NA	NA	NΛ	88	NA	NA.	NA	NA
	(95-10-51-051	8.4/2010	15045	21	134	1,43	6.07	14.29	728	97.5	Little Cloudy	NA.	NA	NA.	53	N.A	NA.	NV	NA.
	DUP2-080410	8/4/2010	15:45	21	NA.	NA	NA.	NΛ	NA	NA	NA	NA	NΛ	NA	NA.	NA	NA.	NA	NA
	GP-10-21-031	8/4/2010	16:30	31	34.7	1,54	6.35	13.78	503	44.9	Clear	NA.	NΛ	NA	50	NA	NA.	NA.	N/
	GP-10-21-041	8/4/2010	17:00	41	83.7	0.42	6.66	14.14	627	-80.2	Clear	NA	NA	NA	130	NA	NA.	NA	N.A
	GP-10-21-051	8/4/2010	18:05	51	315	0.32	6.56	16.8	277	60.9	Silty	NA	NA	NA	240	NA	NA.	NA.	
	GP-10-21-060	8/4/2010	[9:00	60	<1000	0.72	6.68	16.59	828	-64.2	Silly	NA	NA	NA.	240	NA	NA.	NA	NA NA
3P-10-22	GP-10-22-011	8/10/2010	14:40	* 11	6,27	7.43	5.92	14.7	306	115.8	Clear	NA NA	NA NA	NIA		30	101		-
- 4	GP-10-22-021 -	8/10/2010	15:00	21.	- 45	0.63	6.19	- 13.42	440	75.5	Clear	NA.	NA NA	NA NA	< 5	NA NA	NA NA	NA NA	N/
	GP-10-22-031	8/10/2010	15:50	31	54	0.72	6,22	13.22	766	68.1	Clear	NA.	1.00	NA	48	NA	NA ···	NA *	NA
	GP-10-22-041	8/10/2010	16:30	41	85.4	0.99	6,38	13.3	434	-32,9	Clear		NA NA	NA	51	NA.	NA	NA	N/
	GP-10-22-051	8/10/2010	17:30	51	83.5	0.88	6.55	13.57	585		-	NA.	NA	NA	68	NA	NA	NA	NA.
	GP-10-22-061	8/10/2010	18:30	61	29.9	1,02	6.77	Total Control of the		-20.9	Clear	NA	NA	NA	160	NA.	NA	NA	N/
	GI - IN-12-MIN	6/1///3010	18.30	Q1	29.9	1,02	0.77	13.28	75	-51.1	Clear	NA.	<u>NA</u>	NA	670	NA	NA	NA	N/
GP-10-23	GP-10-23-017	8/5/2010	(1:00)	17	5,37	4.03	5.99	14.46	380	76.2	Clean	NA	NA	NΛ	<5.0	NA	NΛ	NA	N/
	DUP-080510	8/5/2010	11:00	17	NA	NA	NA	NA	NA.	NA	NA.	NA	NΛ	NA		NA.	NA.	NA	N/
	GP-10-23-027	8/5/2(110	11.45	27	58,5	3.35	6.08	13.1	1060	94,3	Clean	NA	NA	NA	24	NA.	NA.	NA	N.
	GP-10-23-037	8/5/2010	12.25	37	58.4	3.41	3.96	13,75	961	90.9	Clear	NA	N.A	NA	9.5	NA	N.A	NA	N
	(11)-10-13-047	8-5-2010	(4.26)	4,	374	1.31	15-41	Ar in	4000	245.4	Cherry	86 h	3.7	25.3	200	7.7	1.76	1.1	N
	CiP-10-23-057	8/5/2010	16:05	57	254	HX6	6.63	14.51	7-13	-(00) 3:	Tittle Cloudy	NA.	NA	NA	3003	NA	N/	NA	N.
	DUP2-080510	8/5/2010	16:05	57	NA.	NA	NA	NA	NA	N.A	NA	NA.	NA	NA	NA	NA	NA.	NA	N/
GP-10-24	GP-10-24-015	3/9/2010	15:44	15	37.4	3.1	5,94	14.28	762	1163	Clear	NA	NA NA	NA:	7.4	NA.	NA	NA.	N/
	DCP-080910	8/9/2010	15:44	15	NA.	NA	NA.	NA	NA.	NA	NA	NA	NA.	NA	NA	NA.	NA.	NA	NA NA
	GP-10-24-025	8/9/2010	16:30	25	44.9	5.21	6.05	13.23	710	104.8	Clear	NA	NA.	NA	36	NA.	NA NA		-
	GP-10-24-035	8/9/2010	17;05	35	45.3	1.12	5.94	14.08	9.14	92.4	Clear	NA	NA	NA	64	NA.	NA NA	NA.	N/
- 11	GP-10-24-045	8/9/2010	17:45	45	98.6	1.07	6.54	13.61	1332	-71,5	Clear	NA	NA.	NA	96	NA.		NA	N/
	GP-10-24-055	8/9/2010	18:30	55	< 1000	0.77	6.61	13.41	914	-95.3	Cloudy	NA NA	NA NA	NA	440	NA NA	NA NA	NA NA	N/
GP-10-25	GP-10-25-025	8/10/2010	10;00	25	889	3,57	6.03	13.07	506	69.3	Cloudy	NA		×r.	700				
	GP-10-25-035	8/10/2010	10:45	35	223	1.69	5.94	13.1	745	69.3	Little Cloudy		NA	NA	730	NA	NA	.NA	N/
	DUP-081010	8/10/2010	10:45	35	NA.	NA	NA.	NA.	NA NA	NA	The second secon	NA	NA	NA	240	NA	NA	NA	N/
	GP-10-25-045	8/10/2010	11:50	45	137	1.13	6.56	12.86	-		NA.	NA NA	NA NA	NA	NA	NA	NA	NA.	N/
	DUP2-081010	8/10/2010	11:50	45	NA NA	NA	NA.	NA.	6,22 NA	-74.4 NA	Little Cloudy NA	NA NA	NA NA	NA NA	160	NA	NA	NA	N/
		TA SA PAGE			9.3.2	10.5	0.00	756	300	06	.575	NA.	1977	1974	NA	NA	NA.	NA	N,
GP-10-26	GP-10-26-011 GP-10-26-021	8/11/2010 8/11/2010	9:20 10:20	21	9.11 33.7	6.78 3.01	5.59	14.08	123	139.4	Clear	NA	NA	NA	13	NA	NA	N۸	N/
	DUP-081110	8/11/2010	10:20	21		1-2-	6.05	12,5	275	84.4	Clear	NA NA	NA	NA	22	NA	NA	NA	N/
	GP-10-26-031				NA .	NA	NA.	NA	NA	NA	NA	.NA	NA	NA	NA	NA.	NA	NA	N/
		8/11/2010	10:35	31	84.8	2.67	6.04	11.74	652	84.5	Clear	NA.	NA	NA	56	NA	NA	NA.	N/
	GP-10-26-041	8/11/2010	11:05	41	207	0,72	6.05	12,11	631	61.5	Little Cloudy	NA	NA	NA	320	NA	NA	NA	N/
)	GP-10-26-051	8/11/2010	12:15	51	76.1	1,02	6.27	12.65	485	36.3	Clear	NA NA	NA.	NA	120	NA	NA	NA	N/
	GP-10-26-061	8/11/2010	13:40	61	376	1,49	6.45	12,74	74.1	-6.8	Little Cloudy	NA	NΛ	NA	2300	NA	NΛ	NA	N.
	GP-10-26-071	8/11/2010	14:10	71	< 1000	0,95	6,58	13.96	860	-36.1	Cloudy	NA _	NA NA	NA	160	NA	NA NA	NA	N
6P-10-27	GP-10-27-025	8/11/2010	16:05	25	21.6	1.33	6.46	14.8	332	47.7	Clear	NA	NA.	NA	40	NA.	NA NA	NA.	N
	DUP2-081110	8/11/2010	16:05	25	NA	NA	NA	NA	NA	NA	NA	NA	NA NA	NA	NA.	NA.	NA NA	NA	1
	GP-10-27-035	8/11/2010	17:00	35	101.1	1.07	5.87	13.44	1022	76.8	Clear	NA NA	NA NA	NA NA	470	NA NA			N
	GP-10-27-045	8/11/2010	17:25	45	339	0.71	6.58	13.58	647	-93.6	Cloudy	NA.	NA	NA	620	NA NA	NA NA	NA	N
	GP-10-27-055	8/11/2010	17:50	55	294	0.95	6.65	13,28	644	-108.8	Little Cloudy	NA NA	NA NA		2300		NA	NA	N
	GP-10-27-065	8/11/2010	18245	65	<1000	1.1	6.66	13.37	766	-93.3	Entire Citiony	NA NA	0000	NA		NA.	NA	NA	N
		**************************************	1.00 145	3.524	21000	4.3	0.00	1.001	700	- 73.3	1	DVA:	NA NA	NA	980	NA.	NA.	NA.	N

ug/l, is micrograms per liter

J means estimated results

188 - Total Suspended Solids

ORP - Oxygen Reduction Potential

TABLE 2
Groundwater Profile Results
Shepley's Hill Landfill, Devens, MA

	Boring Location	Sample ID	Date	Time (Military Format)	Depth	Sulfide mg/I	Sulfate mg/l	COD mg/l	TOC mg/l	DOC mg/l	DIC mg/l	Notes		
	GP-10-11	GP-10-11-039	8/3/2010	14:10	39	< 0.10	6.5	<7	NA	3.6	63	, we		
		GP-10-11-049	8/3/2010	15:15	49	< 0.1	19	160	NA	2,8	52		1	
	1 1	DUP3-080310	8/3/2010	15:15	49	NA	NΛ	NA	NA	NA	NA			
	1 1	GP-10-11-059	8/3/2010	19:00	55	< 0.10	49	180	NA	3,1	37			
		GP-10-11-064	8/4/2010	11:30	64	< 0.10	32	160	NA	2.8	44			
		Lung result	21-22-0							11000000				
	GP-10-12	GP-10-12-044	8/5/2010	13:05	44	< () 1()	1.6	13.1	NA.	4.1	72	-91-11-11-11-11-11-11-11-11-11-11-11-11-		
		(iP-10-12-054	8/5/2010	15:00	54	# (f. J(f	3.1	7,0)	NA	4.7	66			
		GP-10-12-065	8/9/2010	8:20	65	<0,10	9.2	38	NA.	7.1	- 56			
	GP-10-13	GP-10-13-039	8/9/2010	14:45	39	<0.10	<0.12	40	NA	6.8	160			
	100000	GP-10-13-049	8/9/2010	17:00	49	< 0.1	0.58 J	36	NA	7.7	170			
	1 1	GP-10-13-059	8/10/2010	9:05	59	< 0.1	< 0.12	38	NA	7,8	130			
		GP-10-13-069	8/10/2010	11:15	- 69	< 0.1	0.56 J	47	NA.	5.2	100			
× 1 + × 1 + 1 + 1		GP-10-13-079	8/10/2010	13:10	79	< 0.1	- 8.7	13 J	NA	1.7	20		the state of the state	120
	4		+		4-1	F 100 X	No.						year that in the interest of	1 2500
	GP-10-14	GP-10-14-039	8/16/2010	09:50	39 49	< 0.10	< 0.12	26	NA.	6.1	78	21901		
	1	GP-10-14-049	8/16/2010	11:20		< 0.10	0.51 J	38	NA	6	77			
	1	DUP-081610	8/16/2010	11:20	49	NA 10.10	NA	NA	NA	NA	NA			
	1 1	GP-10-14-059	8/16/2010	13:00 14:35	.59	< 0.10	2	- 43	NA	4.7	82			
	1 1	GP-10-14-069 GP-10-14-079	8/16/2010 8/17/2010	07:45	69 79	< 0.10	3.8	33	NA NA	3,9	76			
		VII - 11/-19-07.2	6/1//2010	07743	14	×0.10	3,8	23	NΛ	4.2	53			
	GP-10-15	GP-10-15-039	8/11/2010	9:30	39	< (),1()	0,58.1	25	NA	4.9	150		10	
		GP-10-15-049	8/11/2010	11:25		< 0.1	4.2	40	NA	3	64			
		GP-10-15-059	2.11.5010	14/15	49 50	0.10	15	22	XX	1	20.			
		16.00												
	GP-10-16	GP-10-16-024	8/17/2010	16:15	24	<0.10	8.8	9.7.1	NΛ	<1.0	12			
		DUP-081710	8/17/2010	16:15	24	- NA	NA.	NA	NA.	NA	NA 13			
		GP-10-16-034 GP-10-16-054	8/18/2010 8/18/2010	07:55 11:20	34 54	<0.10	11	19.1	NA.	4.2	12			
	1	Dup-081810	8/18/2010	11:20	54	<0.10 NA	12	22	NA.	2.1	14		1	
	1 1	GP-10-16-064	8/18/2010	13:40	64	< 0.01	NA 7.3	NA 24	NA NA	NA 3.7	NA 46			
	1	GP-10-16-074	8/19/2010	07:45	74	< 0.01	9.7	790	NA NA	15	47	1		
	1 3	GP-10-16-084	8/19/2010	09:40	84	< 0,1	0.59 J	43	NA NA	5.6	86	*		
	1 1	DUP-081910	8/19/2010	09:40	84	NA	NA	NA	NA	NA	NA			
		GP-10-16-094	8/19/2010	12:35	94	< 0.1	11	48	NA	7.3	32			
	GP-10-17	GP-10-17-009	8/2/2010	11:40	0	MA	SIA	814	514	2.0	12			
	G1-10-17	GP-10-17-019	8/2/2010	12:20	19	NA NA	NA NA	NA NA	NA NA	2.8	13			
		DUP-080210	8/2/2010	12:20	19	NA NA	NA.	NA	NA NA	1.2	13	(il-sidminos de l		
	V I	GP-10-17-029	8/2/2010	16:00	29	NA	NA.	NA	NA.	1.1	12			
	1	GP-10-17-039	8/2/2010	16:45	39	NA	NA	NA	NA	4.1	72			
	100	GP-10-17-049	8/2/2010	17:30	49	NA	NA.	NA	NA	3.6	72			
		GP-10-17-056	8/2/2010	17:45	56	NA	NA	NA	NA	3.7	77			
	GP-10-18	GP-10-18-007	8/2/2010	18:34	7	NA	NA	NA.	NIA	1.4	34		1	
	G1-10-10	GP-10-18-007	8/3/2010	8:25	17	NA NA	NA.	NA NA	NA NA	1.4	32			
		GP-10-18-027	8/3/2010	9:00	27	NA NA	NA NA	NA NA	NA NA	3.6	76			
		DUP-080310	8/3/2010	9:00	27	NA	NA	NA	NA.	****	7.0			
		GP-10-18-037	8/3/2010	11:00	37	NA	NA	NA	NA	5	57			
		GP-10-18-047	8/3/2010	12:10	47	NA	NA.	NA	NA	6.6	98			
	CD IA IA	CD IA IA CO	D/3/3610	11.12		100	- 201			- 20				
	GP-10-19	GP-10-19-009	8/3/2010	14:35	9	NA	NA	NA	NA	13	6.4			
		DUP2-080310	8/3/2010	14:35	9	NA.	NA.	NA	NA	NA	NA.			
	1	GP-10-19-019	8/3/2010	15:15	19	NA NA	NA NA	NA NA	NA NA	1.	26	i i i i i i i i i i i i i i i i i i i		
		GP-10-19-029 GP-10-19-039	8/3/2010 8/3/2010	16:05 17:00	29 39	NA NA	NA NA	NA NA	NA NA	4.7	62			
		GP-10-19-046	8/3/2010	18:15	46	NA -	NA NA	NA NA	NA NA	5.1 4.9	71			
	1	Gr. IV:12-070	0/3/2010	19/15	40	19/1	1924	INA	NA	4.7	85			

TABLE 2 **Groundwater Profile Results** Shepley's Hill Landfill, Devens, MA

Boring	Camel III	D	Time	Donath	Sulfide	Sulfate mg/l	COD mg/I	TOC mg/l	DOC	DIC	Notes
Location	Sample ID	Date	(Military Format)	Depth	nig/l				mg/l	mg/l	Notes
GP-10-20	GP-10-20-009	8/4/2010	9:30	9	NA	NA	NA	NΛ	1.2	9.8	
	GP-10-20-019	8/4/2010	10:10	19	NA	NA	NA	NA	1,6	37	
	DUT-080410	8/4/2010	10:10	19	NΛ	NA	NA	NA	NA	NA	
	GP-10-20-029	8/4/2010	11:00	29	NA	NA	NΛ	NΛ	4.2	61	
	GP-10-20-039	8/4/2010	13:00	39	NA	NA	NA	NA	4,9	82	
GP-10-21	GP-10-21-011	8/4/2010	15:05	10	NA	NA	NA	NΛ	<1	9.1	
20,000	GP-10-21-021	8,4,2010	15:45	21	NA	NA	NA	N.A	1.2	27	
	DUP2-080410	8/4/2010	15:45	21	NA	NA	NA.	NA	NA	NA	
- 1	GP-10-21-031	8/4/2010	16:30	31	NA	NA	NA	NA	3.9	65	н.
	GP-10-21-041	8/4/2010	17:00	41	NA	NA	NA	NA	5.2	79	
	GP-10-21-051	8/4/2010	18:05	51	NA	NA	NA	NA NA	4.7	100	
	GP-10-21-060	8/4/2010	19:00	60	NA	NA.	NA.	NA.	4,4	84	
							-			-	
GP-10-22	GP-10-22-011	8/10/2010	14:40	11	NA.	NA "	NA.	NA	1.4	15	
100	GP-10-22-021	8/10/2010	15:00	21	NA_	- NA	· NA	- NA	2.4	24	
- 4	GP-10-22-031	8/10/2010	15:50	31	NA	NA.	NA	NA	1.5	26	
	GP-10-22-041	8/10/2010	16:30	41	NA	NA	NA	NA	2.8	36	
	GP-10-22-051	8/10/2010	17:30	51	NA	NA	NA.	NA	3	68	
	GP-10-22-061	8/10/2010	18;30	61	NA	NA	NΛ	NA .	2.3	63	
GP-10-23	GP-10-23-017	8/5/2010	11:00	17	NΛ	NA	NΛ	ŇΛ	1.9	22	
211-777-20-11	DUP-080510	8/5/2010	11:00	17	NA.	NA	NA	NA	NA	NA -	
	GP-10-23-027	8/5/2010	11:45	27	NA.	NΛ	NΛ	NA	2,1	20	
(GP-10-23-037	8/5/2010	12:25	37	N1	NA NA	NA.	NA.	1.1	26	
	GP-10-23-047	8.8.2010	14:20	47	NA	NA	N-1	N.	4.1	33	
		Selection of the select	A-0.0			NA -					
	GP-10-23-057	8/5/2010	16:05	57	NA NA	922	NA	N.A	6	87	
	DUP2-080510	8/5/2010	16:05	57	NA_	NA	NA	NA.	NA	NA.	n
GP-10-24	GP-10-24-015	8/9/2010	15:44	1.5	NA.	NA.	NA	NA.	<1,()	20	
	DUP-080910	8/9/2010	15:44	15	NΛ	NA	NA	NA	NA	NA	
	GP-10-24-025	8/9/2010	16:30	25	NA	NA	NA	NA	<	15	
	GP-10-24-035	8/9/2010	17:05	35	NA	NA	NA	NA	1.5	37	
	GP-10-24-045	8/9/2010	17:45	45	NA	NA	NA	NA	4.4	60	
	GP-10-24-055	8/9/2010	18:30	55	NA	NA	NA	NA	5.9	96	
GP-10-25	GP-10-25-025	8/10/2010	10:00	25	NA	NA	NA	NA	1.4	13	
01-10-23	GP-10-25-035	8/10/2010	10:45	35	NA	NA	NA.	NA.	1.6	43	
		8/10/2010	10:45		NA NA	7.00	90.5	17	NA		
	DUP-081010		the state of the s	35		NA NA	NA NA	NA NA		NA	
	GP-10-25-045	8/10/2010	11:50	45	NA NA	NA	NA NA	NA NA	3.6	61	
	DUP2-081010	8/10/2010	11:50	45	NA	NA	NA	NA	NA	NA	
GP-10-26	GP-10-26-011	8/11/2010	9:20	11	NA.	NA	NΛ	NA	<1	14	
	GP-10-26-021	8/11/2010	10:20	21	NA	NA	NA	NA	<1	17	
	DUP-081110	8/11/2010	10:20	21	NA	NA	NA	NA	NA	NA	
	GP-10-26-031	8/11/2010	10:35	31	NA	NA	NA	NA	< 1	22	
	GP-10-26-041	8/11/2010	11:05	41	NA	NA	NA	NA	1.7	26	
	GP-10-26-051	8/11/2010	12:15	5.1	NA	NA	NA	NA	2.4	48	The state of the s
	GP-10-26-061	8/11/2010	13:40	61	NA	NΛ	NA	NA	4.5	98	Per
	GP-10-26-071	8/11/2010	14:10	71	NA	NA	NA	NA	3.9	110	
06.00.00	OD 10 05 000	0/11/2016	17.05	26		111				10	
GP-10-27	GP-10-27-025	8/11/2010	16:05	25	NA	NA	NA	NA	<1	12	
	DUP2-081110	8/11/2010	16:05	25	NA	NA	NA	NA	NA	NA	
	GP-10-27-035	8/11/2010	17:00	35	NA	NA	NA	NA	1,3	25	
	GP-10-27-045	8/11/2010	17:25	45	NA	NA	NA	NA	4.4	64	
	GP-10-27-055	8/11/2010	17:50	55	NA	NA	NA	NA	4.5	60	
	GP-10-27-065	8/11/2010	18:45	65	NA	NA	NΛ	NA	5.7	71	
							The second secon				

ug/l, is micrograms per liter

J means estimated results

TOC - Total Organic Carbon

DOC - Dissolved Organic Carbon DIC - Dissolved Inorganic Carbon

TABLE 3
GROUNDWATER MONITORING WELL RESULTS
Sheple'y Hill Landfill, Devens Massachusetts

			Alun	ninum	Ant	imony	Ar	senic	Bar	rium	Bery	llium	Cad	mium	Calc	ium
Boring			Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Location	Sample ID	Date	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
SHM-10-01	SHM-10-01-071310	7/13/2010	76.2	< 7.64	NA	NA.	1.16.1	0.68 J	NA	NA	NA	NA	NA	NA	42400	42700
200000000000000000000000000000000000000	SHM-10-01	8/12/2010	NA	<19.1	NA	NA	NA	3.51 J	NA	NA	NA	NA	NA	NA.	NA	41600
	SHM-10-01-090810	9/8/2010	33.3 J	< 19.1	NΛ	NΛ	8.15	7.87	NA	NA	NΛ	NA	NΛ	NΛ	43100	43500
CHIA 10 00	GHA 10 02 071510	7/15/2010	716	2001			0.71	0.42.4			NIX	NA NA	NA NA	NA.	113000	117000
SHM-10-02	SHM-10-02-071510	7/15/2010	236	2.09 J	NA	NA	0.74	0.43 J	NA	NA	NA	The same of the same of	-	NA NA	114000	he e heartail in him
	Dup-071510 SHM010-02-090710	7 15 2010 9/7/2010	85.3	2.02 J 4,15 J	NA NA	- NA NA	(L50) 1.11	1.07	NA NA	NA NA	NA_ NA	NA NA	N.Y	N.\ NA	115000 1	114000 J
SHM-10-03	SHM-10-03-071410	7/14/2010	388	< 7.64	NA	NA	2,36	0.78 J	NA	NA	NA	NA	NA	NA NA	112000	109000
3HM-10-03	DUP-071410	7/14/2010	810	< 7.64	NA NA	NA NA	4.59	0.5.1	NA	NA NA	NA	NA NA	NA	NA NA	112000	111000
				100,000		NA NA	1.47 J	0.51 J		NA NA		NA NA	NA NA	NA NA	153000	157000
4 27 4	SHM-10-03-090710 DUP-090710	9/7/2010	208	< 7.64	NA NA	NA NA	1.47 J	0.71 J	NA = NA: " -	.NA	NA · ·	NA .	- NA	NA	149000 -	154000
+ 25 4	DUF-090/10	9/.//2010			- NA	, NA	151-3	0.713	= NA	.NA	INA	-NA	- NA	ina	143000	134000
42 T	a w		* 40 - 1		1 12		-	-	1 1					- 14		-
SHM-10-04	SHM-10-04-071410	7/14/2010	473	3.21 J	NA	NA	1.62	0.64	NA	NA	NA	NA.	NA	NA	60300 J	57800
	SHM-10-04-090710	9/7/2010	87,2	< 7,.64	NA	NA	1.3	0.79 J	NA	NA	NA	NA.	NA	NA	72100	72800
SHM-10-05A	SHM-10-05A-071510	7/15/2010	35	2.83.1	NA	NA	4.7	4.6	NA	NA	NA	NA.	NA -	NA	14200	14500
	SHM-10-05A-090810	9/8/2010	43.2	3.8.7	NA	NA NA	5.68	5,21	NA NA	NA	NA	··· NA	NA.	NA	14100	14200
SHM-10-06	SHM-10-06-070810	7/8/2010	1150	3.44 J	NA	NA	2210 J	1680 J	NΛ	NA	NA	NA	NA	NA	40900	41000 J
	DUP-070810	7/8/2010	1270	2.13.1	NA	NA	2520	1520	NA	NA.	NA	N.A.	NA	NA	46500	41100
	SHM-10-06-090810	9 8 2010	~19.1	·- [A], [NA.	N.A	2580	2710	N/V	NI	NA	N.A.	NA	N.V	48200	50300
SHM-10-06A	SHM-10-06A-070710	7/7/2010	38.7.1	12.2	N.A	NA	64.8	61	NA	NΛ	NA	NA	NA	NA	15700	15300.1
	DUP-070710	7/7/2010	27.7	12,4	NA	NA.	65.1	60.1	NA	NA	NΛ	NA	N/A	NA	15800	15500
	SHM-106A-090910	9/9/2010	1910	11.6.1	NA	NA	102	94.2	NA	NA	NA	NA.	NΛ	NA.	33000	33300
	DUP-090910	9/9/2010	1990	8.97 J	NA	NA	102	83	NA	NA	NA	NA	NA	NA.	31800	25300
SHM-10-07	SHM-10-07-052710	5/27/2010	3870	< 19.1	NA	NA	816 J	818 J	NA	NA	NA	NA	NA	NA	62200 J	60600 J
	DUP-052710	5/27/2010	3640	< 19.1	NA	NA	827	825	NA	NA	NA	NA	NA	NA	62600	61100
	SHM-10-07-090910	9/9/2010	538	4.17 J	NA	NA	979	918	NA	NA	NA	NA	NA	NA	47400	43200
SHM-10-08	SHM-10-08-071510	7/15/2010	591	< 3.82	NA.	NA	2.72	0.73 J	NA	NA	NA	NA	NA	NA	160000	152000
	SHM-10-08-090710	9/7/2010	33,2	< 3,82	NA	NA	1.4	1.55	NA	NA	NA	NA	. NA	NΛ	182000	195000
SHM-10-10	SHM-10-10-071310	7/13/2010	88 J	< 19.1	NA	NA	2.J	1.25 J	NA	NA	NA	NA NA	NA	NA	95100	92800
	DUP-071310	7/13/2010	79.1	< 19.1	NA	NA	1,34,1	1.13 J	NA	NA	NA	NA	NA	NA	92400	94600
	SHM-10-10	8/12/2010		<19.1	NA	NA		3.62 J	NA	NA	NA	NA	NA	NA		83800
	SHM-10-10-090810	9/8/2010	27.6 J	< 19.1	NA	NA	2,57.1	2.4 J	NA	NA	NA	NA	NA	NA	107000	96800
	DUP-090810	9/8/2010	86.6 J	< 19.1	NA	NA	2,58 J	6.66	NA	NA .	NA	NA	• NA	NA	96300	101000

TABLE 3
GROUNDWATER MONITORING WELL RESULTS
Sheple'y Hill Landfill, Devens Massachusetts

			Alun	ninum	Anti	mony	Arso	nic	Ba	rium	Bery	llium	Cadr	nium	Cal	cium
Boring Location	Sample ID	Date	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)
SHM-10-11	SHM-10-11	8/30/2010	113	10.2 J	0.26 J	0.53 J	356	342 J	40.3	36.5	<0.118	<0.118	<0.118	<0.118	23900	21200 J
3002-00.01	SHM-10-11-101910	10/19/2010	. 10	< 7.64	0.68 J	0.78 J	470	463	43.2	42.6	< 0.236	< 0.236	< 0.236	< 0.236	21900	22200
SHM-10-12	SIIM-10-12	8/30/2010	50.2 J	27.6 J	1,38 J	2.99.1	2880	3560	44.1	55.7	<(0.590)	< 0.590	<0.590	<0.590	25000	33000
100000000000000000000000000000000000000	DUP-083010	8/30/2010	112	27.5.1	<1.20	1.56.1	3210	3410	50.6	53.7	<0.590	< 0.590	< 0.590	<0.590	27900	30600
	SHM-10-12-102010	10,20,2010	10.8 J	57.4	-0.6	0.6	2980	3120	42.4	42,6	< 0.295	< 0.295	< 0.295	. 0.295	29000	29000
	DUP-102010	10/20/2010	50.2	< 9.56	< ()_60()	< 0.600	3160	3000	42.8	41.9	< 0.295	< 0.295	< 0.295	< 0.295	29200	28300
SHM-10-13	GP-10-13-090110	9/1/2010	233	6.02 J	0.19.1	0,17 J	619.1	575	160	153	<0.059	<0.059	<0.059	<0.059	68000	61400
	SHM-10-13-101910	10/19/2010	305	< 7.64	< 0.48	< 0.48	700	672	154	154	< 0.236	< 0.236	< 0.236	< 0.236	67200	65000
	DUP-101910	10/19/2010	343	< 7.64	, 0.480	0.48 J	648	674	138	154	< 0.236	< 0.236	< 0.236	< 0.236	60300	64200
2		122	. **	24.0		2 1 To 1		The same of	* * * * * * * * * * * * * * * * * * * *	- 14K-0	Y	1 - K - 3 - 0	4 3 4		27	0.5 5,0
.SHM-10-14	SHM-10-14-090210	9/2/2010	262	. < 19.1	< 1.2	< 1.2 .	4280	4100	, 80.5	53.8	. <0.59 ·	< 0.059	< 0.59	< 0.059	69300	55300
	SHM-10-14-101910	10./19/10	811	< 9.56	0.67 J	< 0.600	1. 0995	5860	87.5	43.4	< 0.295	< 0.295	< 0.295	< 0.295	70800	57900
SHM-10-15	GP-10-15-090110	9/1/2010	125	<19.1	1.93 J	1.87 J	7930	8110	55	52.4	<0.590	<0.590	<0.590	<0.590	61300	61500
	SHM-10-15-090110		NA	NA	NA	NA	NA	NΛ	NA	NA	NA	NΛ	NA	NA	NΛ	NA
	DUP-090110	9/1/2010	284	<19.1	<1.20	1.25 J	7610	6460	50.7	39.1	< 0.590	< 0.590	< 0.590	<0.590	58500	46800
	SHM-10-15-102010	10/20/2010	312	< 19.1	< 1.20	< 1,20	6090	6230	42.4	43	< 0.59	< 0.59	< 0.59	< 0.59	51200	51800
SHM-10-16	SHM-10-16-090210	9/2/2010	1180	3.59.1	0.37 J	0.24 J	487	495	72.8	73.4	0.07 J	< 0.059	< 0.059	< 0.059	69700	73900
	DUP-090210	9.2.2010	1300	3.271	0.3≥ 1	11.11	542	489	82.1	(49).4	178 7	- 11,5151	0.059	0.059	-6800	70700
	SHM-10-16-102010	10/20/2010	487	2,53.1	< 0.120	0.16.1	1180	,1090	59.2	51.6	~ n,us9	0.06.1	0.059	0.06.1	73200	68100
SHL-23	SIII23	8/12/2010	NA	20.8	NA .	NA	NA	0.14.1	NA	NA	NA	NA .	NA	NA	NA .	2230
SHM-05-39A	SHM-05-39A	8/12/2010	NA	3.57 J	NA	NA	NA	236	NA	NA	NA	NA	NA	NA	NA	16600
SHM-07-03	SHM-07-03	8/12/2010	NA	П	NA	NA	NA	0.29 J	NA	NA	NA	NA	NA	NA	NA	6580
	DUP2-081210	8/12/2010	NA NA	9,63 J	NA	NA	NA	0.77	NA	NA	NA	NA	NA	NA NA	NA	6860
SHM-07-05	SHM-07-05	8/12/2010	NA	<9.56	NA	NA	NA	3180	NA	NA	NA	NA	NA	NA	NA	21500
	DUP-081210	8/12/2010	NA	< 9.56	NA	NA	NA	3220	NA	NA	NA	NA	NA	NA	NA	21700
SHM-99-31B	SHM-99-31B	8/12/2010	NA	35.8	NA	NA	NA	28.8	NA	NA	NA	NA	NA	NA	NA	16500
SHM-05-041B	SHM-05-041B	8/9/2010	147	2.59 J	NA	NA	1440	1130	NA	NA	NA	NA	NA	NA	16000	14500 J
SHM-05-42A	SHM-05-42A	8/12/2010	NA	6.06 J	NA	NA	NA	1.25	NA	NA	NA	NA	NA	NA	NA	6700
SHP-05-045A	SHP-05-045A	8/9/2010	NA	NA	NA	NA	36,4	33.7	NA	NA NA	NA	NA	NA	NA NA	NA	NA
CIND OF A LOS	CHD of OAC	01012016			214	NA.	50.6	01.4	NA.	NI	NA.	- NA	NA.			
SHP-05-046B	SHP-05-046B	8/9/2010	NA	NA	NA	NA	50.6	81.4	NA	NA	NA	NA	NA NA	NA	NA	NA

NA - Not Applicable

ug/L is micrograms per liter mg/l - miligrams per liter

J means estimated results

B indicates that analyte was detected in the associated method blank

TABLE 3
GROUNDWATER MONITORING WELL RESULTS
Sheple'y Hill Landfill, Devens Massachusetts

			Chro	mium	Co	balt	Co	pper	1	ron	L	ead	Mag	nesium	Man	ganese
Boring Location	Sample ID	Date	Total (ug/L)	Dissolved (ug/L)												
SHM-10-01	SHM-10-01-071310	7/13/2010	< 0.744	< 0.744	NA	NA I	NA	NA	508	373	0.2 J	< 0.2	3700	3680	10500 J	10600
	SHM-10-01	8/12/2010	NA	<1.86	NA	NA I	NA	NΛ	NA	886	NA	< 0.500	NA	3530	NA	10700
	SHM-10-01-090810	9/8/2010	< 1.86	< 1.86	NA	NΛ	NA	NA	1740	1680	< 0.500	< 0.500	3680	3780	10200	10300
SHM-10-02	SHM-10-02-071510	7/15/2010	1.54	0.31 J	NA	NA	NA	NA NA	1190	881	0.42 J	0.05.1	15700	16100	2110	2180
	Dup-071510	7 15 2010	1.28	0.32 J	Ni.A	N.A	N.V	NA	1170	890	0.35 J	0.05.1	15600	16100	2130	2170
	SHM010-02-090710	9/7/2010	0.68 J	< 0.372	NA	NΛ	NA.	NA	973	843	0.18 J	< 0.1	16000	16000	2190	2190
SHM-10-03	SHM-10-03-071410	7/14/2010	2.97	< 0.744	NA	NA NA	NA.	NA	1630	866	3.43	1.12.1	12900	12600	122	153
	DUP-071410	7/14/2010	4.68	< 0.744	NA	NA	NA	NA	2440	843	4.04	2.08	13000	127000	151	134
	SHM-10-03-090710	9/7/2010	2.01	< 0.744	NA	NA	NA	NA	1420	1030	0.49 T	< 0.200	18200	18500	72.8	44
A	DUP-090710	9/7/2010	+ 1.99 J .	< 0.744	+ NA	- NA	- NA	NA -	1480	- 1040	. 0.58 ј	< 0.200	17700	* 18000 *	70.2	.51.7
SHM-10-04	SHM-10-04-071410	7/14/2010	4.77	0.49 J	NA.	NA	NA	NA NA	3800 J	5190	0.59	< 0.05	12300 J	11800	2190	2500
	SHM-10-04-090710	9/7/2010	0.95 J	< 0.744	NA	NA	NA	NA	1880	1650	0.2 J	< 0,200	14500	14600	3210	3100
SHM-10-05A	SHM-10-05A-071510	7/15/2010	0.38 J	0,24,1	NA	NA	NA .	NA	1970	1880	0.07 J	< 0.05	1660	1670	590	620
	SHM-10-05A-090810	9/8/2010	0.59	< 0.186	NA	NA:	NA	NA NA	790	677	0.14.1	(1.09.)	1600	1600	105	122
SHM-10-06	SHM-10-06-070810	7/8/2010	4,65	0.21	NA	NA	NA	NΛ	130000 J	117000	1.76 J	< 0.05	7360	7140	724	699
	DUP-070810	7/8/2010	5_33	0.25 J	NA	NA	NA.	NA	149000	117000	3.34	< 0.05	8400	7200	829	712
	SHA1-10-06-090810	9.8 2010	1,86	1.86	NA	N	NA	N/V	144000	145000	0.500	0.57.1	8270	8800	9.54	9,63
SHM-10-06A	SUM-10-06A-070710	7/7/2010	0.58	0,31 J	NA	NA	NA	NΛ	20900 J	19900 J	0.22 J	0.06.1	2090	2030	1650 J	1620
	DUP-070710	7/7/2010	0.59	0.38 J	NA	NA	NA.	NA	21200	20200	0.13 J	0.07 J	2080	2070	1660	1650
	SHM-106A-090910	9/9/2010	6.92	< 0.744	NA	NA	NA	NA	44600	42900	2.7	< 0.200	4940	4640	3940	4080
	DUP-090910	9/9/2010	7.16	< 0.744	NA	NA	NA	NA	42700	32300	2.69	< 0.200	4810	3280	3820	3130
SHM-10-07	SHM-10-07-052710	5/27/2010	15.8	< 1.86	NA	NA	NA	NA.	75800 J	70600 J	4.72	0,74,1	12200	9590	3230 J	3110.1
	DUP-052710	5/27/2010	15.9	< 1.86	NA	NA	NA	NA	75800	71800	4.62	< 0.5	12100	9660	3280	3130
	SHM-10-07-090910	9/9/2010	2.82	< 0.372	NA	NA	NA	NA	62300	56800	0.95 J	< 0.100	6360	5610	2050	1940
SHM-10-08	SHM-10-08-071510	7/15/2010	4.56	< 0.372	NA	NA	NA	NA NA	2610	1310 J	0.8 J	0.18.1	21100	19900 J	910	885 J
	SHM-10-08-090710	9/7/2010	0.43 J	< 0.372	NA	NA	NA.	NΛ	1270	1260	< 0.100	< 0.100	23600	25000	359	376
SHM-10-10	SHM-10-10-071310	7/13/2010	< 1.86	< 1.86	NA	NA	NA	NA NA	1020	799	< 0.5	< 0.5	12100	11900	24600	24200
	DUP-071310	7/13/2010	< 1.86	< 1.86	NA	NA	NA	NA	925	804	< 0,5	< 0.5	11800	12100	24100	24800
	SHM-10-10	8/12/2010	NA	<1.86	NA	NA	NA	NA	NA	1180	NA	< 0.500	NA	10700	NA	22000
	SHM-10-10-090810	9/8/2010	< 1.86	< 1.86	NA	NA	NA	NA	833	700	1.6.1	< 0.500	13200	12000	27400	25200
	DUP-090810	9/8/2010	< 1.86	< 1.86	NA	NA	NA	NA	825	929	< 0.500	< 0.500	11900	12600	27400	25800

TABLE 3
GROUNDWATER MONITORING WELL RESULTS
Sheple'y Hill Landfill, Devens Massachusetts

			Chro	mium	Co	balt	Co	pper		ron	L	ead	Mag	nesium	Man	ganese
Boring Location	Sample ID	Date	Total (ug/L)	Dissolved (ug/L)												
SHM-10-11	SHM-10-11	8/30/2010	1.44	0.52 J	6.28	5.94	0.75 J	0.45 J	60600	55700	0.34 J	0.15 J	2770	2530	2490	2320
	SHM-10-11-101910	10/19/2010	1.15 J	< 0.744		10.9	0.64 J	< 0.472	60500	61000	0.36 J	0.2.1	2840	2900	2160	2260
SHM-10-12	SHM-10-12	8/30/2010	<1.86	<1.86	6.36	8.34	<1,18	<1.18	78600	104000	< 0.500	<0,500	1940	2500	5400	7000
	DUP-083010	8/30/2010	<1.86	<1.86	6.88	7,64	<1.18	<1.18	89700	96000	0.59.1	<().5()()	2190	2360	6120	6520
1	SHM-10-12-102010	10,20,2010	~ 0,43	1.19.1	7:08	7.38	< 0.59	0.73.1	88700	90000	~ (1,25	0.791	2180	2200	6070	62(10)
	DUP-102010	10/20/2010	0.97.1	< ().93	7.33	6.98	0.62 J	< 0.59	90900	87400	0.7 J	0.27 J	2240	2120	6320	6030
SHM-10-13	GP-10-13-090110	9/1/2010	2.66	0.73	0.84	0.73	0.74	0.34 J	88600	84100	0.13 J	<0.05	10500	9900	1900	1850 J
	SHM-10-13-101910	10/19/2010	4.17	< 0.744	0.87.1	0.75 J	1.17.1	< 0.472	95500	94600	0.42 J	0.32.J	9840	10100	2100	2060
-	DUP-101910	10/19/2010	4.15	< 0.744	0.89.1	0.74 /	1.27 J	2,06	87500	94700	0,44 J	< 0.200	8720	9920	1960	2090
SHM-10-14	SHM-10-14-090210 .	- 9/2/2010.	< 1.86	<1.86	16.	15.6	1.53 J	1.3 J	. , 75200	- 73000 -	-0.76 J	- <.0.5	- 4310	4150	4700 -	4720 .
On Mario	SHM-10-14-101910	10./19/10	3.25	< 0.930	23.8	20	4.67	< 0.590	98300	92700	2,27 J	< 0.250	3980	3720	4350 J	4180
SHM-10-15	GP-10-15-090110	9/1/2010	<1.86	<1.86	28.6	29.3	<1.18	<1.18	62500	63300	0.79 J	<0.500	7700	7880	10400	10700
127.27.106.14	SHM-10-15-090110		NA	NA												
	DUP-090110	9/1/2010	<1.86	<1.86	27	22.4	1,37 J	<1/18	58700	48900	1.09 J	< 0.500	7470	6050	9900	8240
N	SHM-10-15-102010	10/20/2010	< 1.86	< 1.86	22,3	23.3	1.2.1	< 1.18	50400	52000	1.48 J	0.7 J	6440	6530	8440	8680
SHM-10-16	SHM-10-16-090210	0.2/2010	7,12	0.32 /	5,27	4.97	5.87	0.36.1	50200	53100	1.65	< 0.05	13800	14100	1710	1.790
	DOP-090210	30 ₹ 50 FO	8.28	0.34	5,81	4.85	0.88	0.34.1	35100	51100	1,07	0.05	(5000	13500	1800	1080
	SHM-10-16-102010	10/20/2010	3.5	0.28 J	6.56	5_51	2.73	0.54	51800	46900	(1.9)	L803)	131100	12000	1250	1150
SHL-23	SHL-23	8/12/2010	NA	<0,186	_N/\	NA	NΛ	NA	NA -	16.9 J	NA	<0.050	ΝΛ	163	NA	6,87
SHM-05-39A	SHM-05-39A	8/12/2010	NA	<0.186	NA	NA	NA	NA	NA	24500	NA	<0.050	NA	1860	NA	680
SHM-07-03	SHM-07-03	8/12/2010	NA	<0.186	NA	NA	NA.	NA	NA	53.8	NA	0.05 J	NA	550	NA	9,68
	DUP2-081210	8/12/2010	NA	< 0.186	NA	NA	NA	NA	NΛ	58	NA	0.05 J	NA	568	NA	9,66
SHM-07-05	SHM-07-05	8/12/2010	NA	<0.930	NA	NA	NA	NA	NA	22500	NA	<0.250	NA	2990	NA	544
	DUP-081210	8/12/2010	NA	< 0.930	NA	NA	NA	NA	NA	22700	NA	< 0.250	NA	2960	NA	545
SHM-99-31B	SHM-99-31B	8/12/2010	NA	0,56	NA	NA	NA	NA	NA	14600	NA.	0.09 J	NA	1930	NA.	478
SHM-05-041B	SHM-05-041B	8/9/2010	0.5	<0.186	NA	NA	NA	NA	35200	28000	0.6	<0.050	2400	2080	736	656 J
SHM-05-42A	SHM-05-42A	8/12/2010	NA	<0.186	NA	NA.	NA.	NA	NA	388	NA	<0.050	NΛ	1160	NA	140
SHP-05-045A	SHP-05-045A	8/9/2010	NA	NA	NA	NA.	NA	NA	21600	22100	NA .	NA	NA.	NA	NA	NA
CUR OS CASE	OND CC OACD	0/0/2010	874	202	804	516	\$ C A	314	2/200	14000	201	N/A	514	N. A.	214	, , , , , , , , , , , , , , , , , , ,
SHP-05-046B	SHP-05-046B	8/9/2010	NA	NΛ	NA NA	NA	NA	NA	26800	34800	NA	NA	NA	NA	NA	NA NA

NA - Not Applicable ug/L is micrograms per liter

mg/l - miligrams per liter.

J means estimated results

B indicates that analyte was detected in the a

TABLE 3 GROUNDWATER MONITORING WELL RESULTS Sheple'y Hill Landfill, Devens Massachusetts

			Me	reury	Ni	ckel	Pot	issium	Sele	nium	S	ilver	So	dium	Tha	llium
Boring Location	Sample ID	Date	Total (ug/L)	Dissolved (ug/L)												
SHM-10-01	SHM-10-01-071310	7/13/2010	NA.	NA	6.07	5.77	2300	2290	NA	NA	NA	NA	9340	9160	NA	NA
91111 (8 41)	SHM-10-01	8/12/2010	NA	NA	NA	5.75	NA	2230	NA	NA	NA	NA.	NA	11100	NA	NA
	SHM-10-01-090810	9/8/2010	NA	NA	4,09 1	4.31 J	2220	2280	NA	NA	NA	NA.	8880	8770	NΛ	NA
SHM-10-02	SHM-10-02-071510	7/15/2010	NA	NA	9.98	9.79	3880	4010	NΛ	NA	NΛ	NA.	49500	53300	NΛ	NA
	Dup-071510	7 15-2010	N.1	NA	10,2	0.1	3980	4000	NA	NA	NA	N: \	51400	53100	NI	NA
	SHM010-02-090710	9/7/2010	NA	NA	9.58	9,3	4020	4040	NA	NA	NΛ	NA	48100	50700	NA	NA
SHM-10-03	SHM-10-03-071410	7/14/2010	NA	NA	6.24	5.36	6490	6000	NA	NA	NA	NΛ	474000	473000	NA	NA
	DUP-071410	7/14/2010	NA	NA	7.44	5.18	6580	6060	NA	NA.	NA	NA	483000	474000	NA	NA
	SHM-10-03-090710	9/7/2010	NA	NA.	6.6	5,67	6920	6880	NA	NA	NA	NA	536000	536000	NA	NA
79.54	DUP-090710	9/7/2010	NA -	· NA	6.35	5.68.	6670 -	. 6840	NA:	. NA	; NA	. NA:	510000	526000	NA	NA ·
* -	01114 10 04 071410	7// 4/00/0	* 4		0.00		4070	5000	11-	V., *2			724001	75400	N/A	NA.
SHM-10-04	SHM-10-04-071410	7/14/2010	NA	NA	9.98	11.6	4230	5220	NA	NA	NA	NA	33400 J	35400	NA	NA
	SHM-10-04-090710	9/7/2010	NA	NA	8.1	7.66	4050	3990	NA	NA	NA	NA	35800	35200	NA	NA
SHM-10-05A	SHM-10-05A-071510	7/15/2010	NA	NA.	4.02	4.43	1990	1990	NA	NA	NΛ	NA.	22800	23900	NA	NA
	SHM-10-05A-090810	9/8/2010	NA	-NA	1.68	- 1.72	1770	1830	NA	NA	NA	NA	19600	19700	NA	NΛ
SHM-10-06	SHM-10-06-070810	7/8/2010	NA	NΛ	11,6	8.11	11700	11800	NA	NA	NA NA	NA	18200	17900	NA	NA
	DUP-070810	7/8/2010	NA	NA .	12.6	8.27	13100	12300	NA	NA	NA	NA	20700	19000	NA	NA
	\$1181-10-06-090810	9.8-2010	NA	NA.	9.11	9,4	13500	13800	NI	NA	N.X	NI	22800	23700	17.4	NA
SHM-10-06A	SHM-10-06A-070710	7/7/2010	NΛ	NΛ	2.22	1.13	4700	4520	NA	NA	NA .	NA.	7490	7260	NA.	NA
	DUP-070710	7/7/2010	NA	NA	1.16	1.12	4740	4680	NA.	NA	NA	NA	7640	7560	NA	NA.
	SHM-106A-090910	9/9/2010	NA	NA.	7.73	2,34	8130	7640	NΛ	NA	NA	NA	13200	13200	NA	NA
	DUP-090910	9/9/2010	NA	NA	7.97	1,68 J	7970	5990	NA	NA	NA	NA	12900	9240	NA	NA
SHM-10-07	SHM-10-07-052710	5/27/2010	NA	NA	18.5	6.4	17900	16000	NA	NA	NA	NA	36400	35100 J	NA.	NA
	DUP-052710	5/27/2010	NA	NA	17.5	6.3	18100	16100	NA	NA	NA	NA	36900	35700	NA	NA
	SHM-10-07-090910	9/9/2010	NA	NA	7.34	5.28	13200	11400	NA	NA	NA	NA	26400	24400	NA	NA
SHM-10-08	SHM-10-08-071510	7/15/2010	NA	NA	11.3	9,55	5370	4590	NA	NA	NA	NA	44300 J	44500	NA	NA.
	SIIM-10-08-090710	9/7/2010	NA	NA.	8.27	8.57	5240	5470	NA	NA	NA	NA	46400	NA	NA	NA
SHM-10-10	SHM-10-10-071310	7/13/2010	NA	NΛ	21.5	21.2	3580	3600	NA	NA	NΛ	NA	26500	26100	NA	NA
	DUP-071310	7/13/2010	NA	NA	21	21.5	3490	3610	NA.	NA	NA	NA	26500	27500	NA	NA.
	SHM-10-10	8/12/2010	NA	NA		20.8		3590	NA	NA.	NA	NA	10000	28500	NA	NA
	SHM-10-10-090810	9/8/2010	NA	NA	23.5	21.5	3750	3410	NA	NA	NA	NA	29600	27100	NA	NA
	DUP-090810	9/8/2010	NA	NA	21.4	22.2	3380	3560	NA	NA	NΛ	NA	26600	28500	NA	NA

TABLE 3 GROUNDWATER MONITORING WELL RESULTS Sheple'y Hill Landfill, Devens Massachusetts

			Mer	cury	Ni	ckel	Pota	ssium	Sele	enium	Sil	lver	Soc	lium	Tha	llium
Boring Location	Sample 1D	Date	Total (ug/L)	Dissolved (ug/L)												
HM-10-11	SHM-10-11	8/30/2010	< 0.0120	0.01443 J	5,92	5.43	5410	5150	< 0.812	< 0.812	<0.170	<0.170	12400	11800	< 0.062	< 0.062
	SHM-10-11-101910	10/19/2010	0.09993 J	0.1268 J	6.62	6,8	5310	5390	< 1.62	<u> </u>	< (),34()	< 0.340	12700	13000	< 0.124	< 0.124
SHM-10-12	SHM-10-12	8/30/2010	<0.0120	<0.0120	11	13.9	5480	7040	<4.06	<4.06	<(),85()	<0.850	7090	8780	< 0.310	< 0.310
	DUP-083010	8/30/2010	0.03627 J	0.01933.1	12,3	12.4	6190	6480	<4.06	<4.06	< 0.850	< 0.850	7880	8610	< 0.310	< 0.310
	SHM-10-12-102010	10 20 2010	0.06209.1	0.00511.1	11.	12.3	482-	4900	2.03	2.03	(),425	0,425	5220	5060	0.155	0.155
	DUP-102010	10/20/2010	0.1153.1	0.0624 J	12.3	11.4	4940	4670	< 2.03	≈ 2.03	< 0.425	< 0.425	5210	4870	< 0.155	< 0.155
SHM-10-13	GP-10-13-090110	9/1/2010	<0.0120	<0.0120	3	2.6	12500	12200	0.54 J	< 0.406	<0.085	<0.085	15300	14500	<0.031	<0.031
	SHM-10-13-101910	10/19/2010	0.07162 J	0.07162.1	2.95	2.54	12300	12500	< 1.62	< 1.62	< 0.340	< 0.340	15600	15900	< 0.124	< 0.124
	DOb-101410	10/19/2010	0.1218.1	0.1059 J	2.87	2,48	11000	12200	~1.62	~ 1.62	~0.340	~ 0.340	13900	16100	~ 0.124	< 0.124
SHM-10-14 .	SHM-10-14-090210	9/2/2010	< 0.012	< 0.012	8.07	9.16	18800	17600 J	< 4.06	< 4.06	< 0.85	≤ 0.85	15500	15200	< 0.31	< 0.31
3HW-10-14	SHM-10-14-101910	10./19/10	0.0965 J	0.1246 J	11.2	7.62	11400	101000	< 2.03	< 2.03	< 0.425	< 0.425	8500	8080	< 0.155	< 0.155
SHM-10-15	GP-10-15-090110	9/1/2010	<0.0120	<0.0120	20	20.3	6910	6880	<4.06	<4.06	<0.850	<0.850	13700	13900	<0,310	<0.310
	SHM-10-15-090110								1							
	DUP-090110	9/1/2010	<0.0120	< 0.0120	18.5	15.3	6390	5200	<4.06	<4.06	< 0.850	< 0.850	13100	11200	< (),31()	<0.310
	SHM-10-15-102010	10/20/2010	0.07762.1	0.0551 J	16.2	15.8	5350	5500	< 4.06	~ 4.06	< ().85()	< 0.850	11600	12400	< ().31()	< 0.31
SUM-10-16	SHM-10-16-090210	9/2/2010	0.102776.1	< 0.012	6.39	3,54	14600	15500	0,59.1	0,7,1	< 0.85	< 0.085	30800	31400	0.05.1	0.05 J
	(91).ls=(mi)5/(p)	n 5 3010	0.014664	0.002	-116	2.3=	15800	14.00	6-11	0.613	0.085	11.05=	32,400	0.05	0.054	1.85
	SHM-10-16-102010	10/20/2010	0.09046 [0.03837 J	5.28	3.06	12500	11800	0.43.1	11:44 I	≥ 0.085	≈ 0.085	31500	30700	< 0.031	0.06.1
SHL-23	SIII23	8/12/2010	N.A	NA	NA	1.13	NA.	990	NA	N?	NA .	NA	NA_	1400	NA	NA
SHM-05-39A	SHM-05-39A	8/12/2010	NA	NA	NA	2,46	NA	6530	NA	NA	NA	NA	NA	12300	NA	NA
SHM-07-03	SHM-07-03	8/12/2010	NA	NA	NA	0.28 J	NA	841	NA	NΛ	NA	NA	NA	11600	NA	NA.
	DUP2-081210	8/12/2010	NA.	NA	NA	0,27 J	NA	893	NA	NA	NA	NA	NA	12100	NA NA	NA
SHM-07-05	SHM-07-05	8/12/2010	NA	NA	NA	9.23	NA	4530	NA	NA	NA	NA	NA	11500	NA	NA
	DUP-081210	8/12/2010	NA	NA	NA	9,53	NA	4540	NA	NA	NA	NA	NA	11500	NA	NA
SHM-99-31B	SHM-99-31B	8/12/2010	NA	NA	NA	0,93	NA	3860	NA	NA	NA	NA	NA	8460	NA	NA
SHM-05-041B	SHM-05-041B	8/9/2010	NA	NA	4.83	3.78	10000	8770 J	NA .	NA	NA	NA	14900	12800.1	NA	NA
SHM-05-42A	SHM-05-42A	8/12/2010	NA	NA	NA.	0.88	NA	1470	NA	NA	NA	NA	NA NA	2040	NA	NA
SHP-05-045A	SHP-05-045A	8/9/2010	NA.	NA	NA	NA.	NA NA	NA	NA	NA	NA	NA .	NA	NΛ	NA	NA
31,17,002304374.	3/11-05-V45/V	0/72010	14/4	1173	N/A	1074	INA.			INA	IN IN	1477	14/7	1977	IVA	INA
SHP-05-046B	SHP-05-046B	8/9/2010	NA	NA	NA.	NA										

ug/L is micrograms per liter

mg/l - miligrams per liter J means estimated results

B indicates that analyte was detected in the a

TABLE 3
GROUNDWATER MONITORING WELL RESULTS
Sheple'y Hill Landfill, Devens Massachusetts

	7		Vana	dium	2	Line											1
Boring Location	Sample ID	Date	Total (ug/L)	Dissolved (ug/L)	Total (ug/l.)	Dissolved (ug/L)	Turbidity NTU	DO mg/L	pH	Temp Celcius	Spec Cond uS/cm	ORP mV	Color	Hardness mg/l	Alkalinity mg CaCO3/L	TDS mg/l	TSS mg/l
SHM-10-01	SHM-10-01-071310	7/13/2010	NA	NA	NΛ	NA	3.34	0.18	6.19	12.38	297	63.5	Clear	120	130	190	< 5
DI III.	SHM-10-01	8/12/2010	NA	NA	NA	NA	NA	0.49	6.61	11.86	291	42.2	NA	NA	130	NA	N/
	SHM-10-01-090810	9/8/2010	NA	NΛ	NA	NA	0.15	0.12	6.31	12,68	299	11.3	Clear	120	140	210	< 5
SIIM-10-02	SHM-10-02-071510	7/15/2010	NΛ	NA	NA	NΛ	3,47	0.45	6.42	12.24	836	80.8	Clear	370	250	570	< 5
	Dup-071510	7/15 2010	NA	NI	NI	NA T	NA	NA	NA	NA.	N.I	80.8 N \	NA	360	250	610	5.2
1	SHM010-02-090710	9/7/2010	NA	NΛ	NA	NA	0.64	0.87	5,94	12,45	881	-258.3	Clear	330	260	480	< 5
SHM-10-03	SHM-10-03-071410	7/14/2010	NA	NA	NA	NA	31.7	1.47	6.60	16.09	3331	75.7	Clear	310	96	1,900	28
	DUP-071410	7/14/2010	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA	NA	320	95	1,900	17
4 1	SHM-10-03-090710	9/7/2010	NA	NA	NA	NA.	13.4	1.72	6.31	11.93	3341	148.1	Clear	420	78	1,900	28
(4.45.1)	. DUP-090710	9/7/2010	• 'NA : .	. NA . '×	NA	NA'	NA .	NA "	NA NA	. NA	NA	NA.	NA ·	410 -	75	1,900-	7,8
2 11 1		,		4		1					44.4	200	10 3 3		and the same		
SHM-10-04	SHM-10-04-071410	7/14/2010	NA	NA	NA	NA.	17.7	0.23	6.37	10.82	630	9.9	Clear	200	99	380	34
	SHM-10-04-090710	9/7/2010	NA.	NA	NA	NA	4.28	0.23	5.99	12.1	656	43.7	Clear	220	100	390	5.2
SHM-10-05A	SHM-10-05A-071510	7/15/2010	NA	NA	NA	NA.	5.12	1,42	6.29	19,06	186	31.7	Clear	43	43	120	< 5
	SHM-10-05A-090810	9/8/2010	NA.	· · · · NA	NA .	NA	8.92	3.2	5.27	20.2	200	-29	Clear	41	36	110	< 5
SHM-10-06	SHM-10-06-070810	7/8/2010	NA	NA _	NA	NA NA	21.4	0.55	6.62	21.74	754	-93.8	Cloudy	130	360	310	94
	DOP-070810	7/8/2010	N:N	NA	NA.	NA	NA	NA	NA	NA.	NA	NA	NA	130	370	320	9()
	SHM-10-06-090810	9.8 2010	110	NA.	NA.	N/A	3,72	2,83	6.16	11.59	783	-64.3	Clear	130	300	330	62
SHM-10-06A	SHM-10-06A-070710	7/7/2010	NA	NA	NA	NA.	5,38	1,49	6.51	19.74	209	-22,6	Clear	48	100	120	< 5
-	DUP-070710	7/7/2010	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA	NΛ	52	97	130	< 5
	SHM-106A-090910	9/9/2010	NA	NA	NA	NA NA	40.6	0.39	5.94	10.65	431	-157.3	Cloudy	97	190	200	330
	DUP-090910	9/9/2010	NA	. NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	94	150	180	270
SHM-10-07	SHM-10-07-052710	5/27/2010	NA	NA	NA.	NA.	237	0.15	6,97	13.43	751	-195	Cloudy	210	300	320	120
	DUP-052710	5/27/2010	NA	NA	NA	NA.	NA	NA	NA	NA	NA	NA	NA	210	280	370	640
	SHM-10-07-090910	9/9/2010	NA	NA	NA	NA	15.4	0.43	6.54	12.39	635	-105.6	Clear	130	240	300	53
SHM-10-08	SHM-10-08-071510	7/15/2010	NA	NA	NA	NA	7.15	0.21	6.73	10.95	917	33.7	Clear	480	480	630	12
	SHM-10-08-090710	9/7/2010	NA	NA	NΛ	NA	1.37	3.61	6.19	12,1	1079	-233	Clear	490	500	630	< 5
SHM-10-10	SHM-10-10-071310	7/13/2010	NA	NA	NA	NA	4,52	0,85	6.61	12.10	658	28.7	Clear	270	350	400	< 5
	DUP-071310	7/13/2010	NA.	NA	NA	NA	NA	NA	NA.	NA	NA	NA.	NA	270	350	400	< 5
	SHM-10-10	8/12/2010	NA	NA	NA	NA.	NA.	0.76	6.57	11,27	622	-9.1	NA	NA	320	NA	NA
	SHM-10-10-090810	9/8/2010	NA	NA	NA	NA.	0.71	0.16	6.55	13.13	617	63.3	Clear	260	320	380	< 5
	DUP-090810	9/8/2010	NA.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	260	330	350	< 5

TABLE 3 GROUNDWATER MONITORING WELL RESULTS Sheple'y Hill Landfill, Devens Massachusetts

			Vana	dium		inc											1
Boring			Total	Dissolved	Total	Dissolved	Turbidity	DO	pH	Temp	Spec Cond	ORP	Color	Hardness	Alkalinity	TDS	TSS
Location	Sample ID	Date	(ug/L)	(ug/L)	(ug/L)	(ug/L)	NTU	mg/L		Celcius	uS/em	mV		mg/l	mg CaCO3/L	mg/l	mg/l
HM-10-11	SHM-10-11	8/30/2010	0.31 J	< 0.154	10.9	13.8	4.05	1.68	6.12	13.19	419	-32	Clear	NA	160	NA	15
	SIIM-10-11-101910	10/19/2010	< 0.308	< 0.308	17.6.1	17.9 J	4.28	0.41	6.28	11.57	4.14	-42.1	Cloudy		140	Trans-	17
SHM-10-12	SHM-10-12	8/30/2010	<0.770	<0.770	35,2 J	37.7 J	8.43	3.55	6.04	14.41	460	-34.9	Clear	NΔ	240	NΛ	12
Still-10-12	DUP-083010	8/30/2010	< 0.770	<0.770	46.8 J	36.5 J	NA	NΛ	NA	NA	NA NA	NA	NA NA		74 -117 PH		
	SHM-10-12-102010	10/20 2010	0.385	0.385	26.7	29,2	1.6	0.32	5.93	10,92	432	-14.5	Clear	N.A	240	N.A	16
- 1	DUP-102010	10/20/2010	< 0.385	< 0.385	25.2	27.8	NA NA	NA	NA	NA	NA NA	NA	NA	NA	240230	NA	14
	DOP-102010	10/20/2010	<0.363	< 0.363	23.2	27,0	1477	NA.	1975	No.	1	ina	INA	1477	230	1875	14
HM-10-13	GP-10-13-090110	9/1/2010	0.62	0.22 J	3,49 J	4.66 J	18.8	2,76	6,32	13.57	782	-68.6	Clear		380		43
	SHM-10-13-101910	10/19/2010	0.75 J	< 0.308	14.9 J	17.9.1	12	0.12	6,27	12.48	743	-52.5	Clear	40 mm	360	circle interests and	62
	DUP-101910	10/19/2010	0.64.1	< 0.308	14.7 J	17.8 J	NA	NA	NA	NA	NA	NA	NA		360		56
Sec. 2		Y			24 4 6 6					100			1 2		2 3 4 5	C -	8.6 T
SHM-10-14	SHM-10-14-090210	9/2/2010	< 0.77	< 0.77	54.6	30.6 J	. 34.7	0.18	6.35	. 14.48	645 ,	-87.4	Clear,	NA	360	NA.	72
	SHM-10-14-101910	10./19/10	0.81 J	< 0.385	41	26.9	34.5	0.36	6.35	11.99	693	-38.6	Little Cloudy	11	320	1314	130
SHM-10-15	GP-10-15-090110	9/1/2010	<0.770	<0.770	29.7 J	26.4 J	16.3	0.25	6.21	16.02	503	-52.7	Clear	NA	210	NA NA	170
	SIIM-10-15-090110				***((16.3	0.25	6.21	16.02	503	-52.7	Clear	NA	240	NA	36
	DUP-090110	9/1/2010	< 0.770	<0.770	22.7 J	20.1,1	NA	NA	NΛ	NA	NA	NA	NΛ			III Willes Samuel	
	SHM-10-15-102010	10/20/2010	< 0.770	< 0.77	33.6 J	42,8 J	59.5	0.36	5.94	11.95	510	-10.9	Cloudy	NA	230	NΛ	140
SHM-10-16	SHM-10-16-090210	9/2/2010	1,65	0.08 J	7,99	5,39	78,5	0.17	6.98	11.4	784	-233.8	Little Cloudy	NA	330	NA	150
	[M] [4-03012] [40	9/2/2010	1.85	u.us.1	11.34	3.91.1	NA	2.1	11	11	NA	11	12	10000			1
- 0	SHM-10-16-102010	10.20.2010	0.81	0.13 J	36.7	13	34.6	0.34	6.77	10,63	743	-129.2	Cloudy	NA.	320	NA	170
SIII23	SIIL-23	8/12/2010	NΛ	NA	NA	NA	NA NA	10,06	6.45	10,42	25	209.8	NA	NA .	4,3	NA	NA.
SHM-05-39A	SHM-05-39A	8/12/2010	NA	NA NA	NA	NA NA	NA	0.35	6.45	11.37	263	-52.9	NA	NA	100	NA	NA
CD14 02 02	SHM-07-03	8/12/2010	NΛ	NA NA	NA	NA NA	NA	6.61	5.81	12.25	81	133.9	NA NA	NΛ	18	NA	NA
SHM-07-03				NA NA	NA NA	NA NA	NA NA	NA	NA NA	NA NA	NA NA	NA	NA NA	NA.	10	INA	INA
	DUP2-081210	8/12/2010	NA	NA NA	NA	NA	INA NA	INA	INA	NA NA	INA INA	NA	NA NA			-	
SHM-07-05	SHM-07-05	8/12/2010	NA	NA	NA	NA	NA	0.40	6.45	11.43	256	-21.5	NA	NA	94	NA	NA
	DUP-081210	8/12/2010	NA	NA	NA.	NA	NA	NA	NA	NA	NA	NA	NA				
SHM-99-31B	SHM-99-31B	8/12/2010	NΛ	NA	NA	NΛ	NA	0.19	6.03	10.74	186	33.9	NA	NA	86	NA	NA.
SHM-05-041B	SHM-05-041B	8/9/2010	NA	NA NA	NA	NA	NA	0.32	6.43	11.75	310	42.6	NA	NA	NA	NA NA	45
2104.06.424	CIDA OC 304	8/13/2010	NA.	N1.4	N14	NA NA	NA	1,20	6.50	10,39	61	89.5	NA.	NIA'	10	NA	- N.
SHM-05-42A	SHM-05-42A	8/12/2010	NA	NA	NA	NA	INA	1,20	0.30	10.39	01	89.3	NA	NA	18	NA	NΛ
SHP-05-045A	SHP-05-045A	8/9/2010	NA	NA	NA	NA	NA	0.30	6.20	13.97	294	-32,2	NA NA	NA	NΛ	NA	15
SHP-05-046B	SHP-05-046B	8/9/2010	NA	NA	NA	NA	NA	0.81	5.71	12.93	662	3	NA	NA	NA	NA	- 11

Notes

NA - Not Applicable

ug/L is micrograms per liter mg/l - miligrams per liter J means estimated results

B indicates that analyte was detected in the a

DO - Dissolved Oxygen
ORP - Oxygen Reduction Potential

TDS - Total Dissolved Solids TSS - Total Suspended Solids

TABLE 3
GROUNDWATER MONITORING WELL RESULTS
Sheple'y Hill Landfill, Devens Massachusetts

Boring Location	Sample ID	Date	Ammonia mg/l	Nitrite mg/l	Sulfide mg/l	COD mg/l	TOC mg/l	Chloride mg/l	Nitrate mg/l	Sulfate mg/l	DOC mg/l	DIC mg/l	Notes
SHM-10-01	SHM-10-01-071310	7/13/2010	0.264	< 0.002	< 0.1	113	1.3	12	< 0.01	6.8	NA	NΛ	
EC 21 2 C P E 0	SHM-10-01	8/12/2010	0.241	< 0.002	< 0.10	<7.0	NA.	14	< 0.01	7.0	1.5	31	Test Kit (Filtered) < 5
	SHM-10-01-090810	9/8/2010	0.344	< 0.002	< 0,1	12.1	1,6	111	< 0.01	8,7	1,6	37	17.79
SHM-10-02	SHM-10-02-071510	7/15/2010	0.248	< 0.002	< 0.1	< 7	2,4	160	< 0.01	20	NA	NA	
	Dup-071510	7 15 2010	0.231	0.002	0.1	102	2.5	100	0.01	21	1.1	NA	
	SHM010-02-090710	9/7/2010	0.238	< 0.002	< 0.1	< 7	2.6	120	< 0.01	16	2.5	62	
SHM-10-03	SHM-10-03-071410	7/14/2010	0.035 J	0.02	< 0.1	25	0.64	1000	0.52	38	NA	NA	
	DUP-071410	7/14/2010	0.0269 J	0.02	< 0,1	47	0,73	1000	0,51	36	NA	NA	
	SHM-10-03-090710	9/7/2010	U.U392 J	< 0.002	< 0.1	43	0.66	1100	0.55	34	< 1	26	
10-	DUP-090710	9/7/2010	- 0.0204:I	< 0.002	. < 0.1	- 31∻	0.66	1100	. 0.6	39 11 2	· NA ·	r. NA	* 14 mm - 1 mm -
SHM-10-04	SHM-10-04-071410	7/14/2010	0.0666 J	0.11	< 0.1	13 J	2.7	74	3.8	84	NA	NA	
	SHM-10-04-090710	9/7/2010	0.0585 J	0.5	< 0.1	< 7	2.6	92	3.7	87	2.7	43	
SHM-10-05A	SHM-10-05A-071510	7/15/2010	0.0184 J	U.10.0	< 0.1	< 7	0.93	34	0.38	10	NA	NA	
	SHM-10-05A-090810	9/8/2010 —	0.0335 J	< 0.002	< 0.1	55	0.96	29	0.46	. 11	< 1	20	55 (
SHM-10-06	SHM-10-06-070810	7/8/2010	5.5	< 0.002	< ().1	29	4.8	17	0.03	0.89	NA	NA	
	DUP-070810	7/8/2010	5.58	< (FD(5)	< 0.1	25	4.7	17	0.033	11.8.11	NI	N.A	
	SHM-10-06-090810	9.8.2010	5.13	- 11,002	0,1	33	4,2	15	0.13	0.491	5	93	
SIIM-10-06A	SHM-10-06A-070710	7/7/2010	2,69	< 0.002	< 0.1	16.J	3.4	3,4	0.03.1	2,5 B	N.A	NA	
	DUP-070710	7,7;2010	2.59	< 0.002	1.0 >	20	3.3	3.4	0.032.1	29B	NA	NΛ	
	SHM-106A-090910	9/9/2010	3.9	< 0.002	< 0.1	17 J	4	-11	< 0.01	3.2	3.3	58	- I
	DUP-090910	9/9/2010	5.05	< 0.002	< 0.1	19.1	4.4	11	< 0.01	3.2	NA	NA	
SHM-10-07	SHM-10-07-052710	5/27/2010	6.02	< 0.002	< 0.1	45	3,6	48	L 800.0	8.6	NA	NA NA	101
	DUP-052710	5/27/2010	5.78	< 0.002	< 0.1	58	3.5	48	0.013.J	9.3	NA	NA	
- 2	SHM-10-07-090910	9/9/2010	5.6	< 0.002	< 0.1	29	3.8	41	< 0.01	2.3	3.5	52	
SHM-10-08	SHM-10-08-071510	7/15/2010	< 0.017	< 0.002	< 0,1	< 7	4	71	< 0.01	15	NA	NA	
	SHM-10-08-090710	9/7/2010	0.084	< 0.002	< 0.1	17 J	4.1	79	< 0.01	15	3.8	110	
SHM-10-10	SHM-10-10-071310	7/13/2010	0.155	< 0.002	< 0.1	29	3.6	19	< 0.01	0.56 J	NA	NA	
	DUP-071310	7/13/2010	0.145	< 0.002	< 0.1	40	3.6	18	< 0.01	0.38 J	NA	NA	
	SHM-10-10	8/12/2010	0.201	< 0.002	<0.10	25		23	<0.01	0.79 J	3.9	70	
	SHM-10-10-090810	9/8/2010	0.148	< 0.002	< 0.1	55	3.7	17	< 0.01	0.34 J	3.8	76	
	DUP-090810	9/8/2010	0.168	< 0.02	< 0.1	45	3.9	17	0.019 J	0.26.1	NA	NA	

TABLE 3 GROUNDWATER MONITORING WELL RESULTS Sheple'y Hill Landfill, Devens Massachusetts

SHM-10-12	Sample ID SHM-10-11 SHM-10-11-101910 SHM-10-12 DUP-083010 SHM-10-12-102010 DUP-102010	8/30/2010 10/19/2010 8/30/2010 8/30/2010	mg/l 2.79 3.13	<0.002 0.01 J	mg/l <0.10	mg/l	mg/l	nig/i	mg/l	mg/l		mg/l	Notes
SHM-10-12	SHM-10-11-101910 SHM-10-12 DUP-083010 SHM-10-12-102010	8/30/2010	3.13	Chief of Block Comments and the State of	Commence of the last of the la	1.1	NΛ	24	0.019.1	19	mg/l 3.3	62	
SHM-10-13	DUP-083010 SHM-10-12-102010	-			< (), (i)	19		23	< 0.01	19.1	3.4	71	* * * * * * * * * * * * * * * * * * * *
SHM-10-13	SHM-10-12-102010	8/30/2010	3.7	<0.002	<0.10	31	NΛ	3.7	0.035 J	1.7	4.1	110	
SHM-10-13	THE RESERVE THE PARTY OF THE PA	13/3/1/2010								28.09900			
TO SALCHE REPLY AND A SECOND STREET	DUP-102010	10/20/2010	3.8	- 0,02	4:-0.10		N.V	4.4	0.01	1.4	4.3	130	
TO DATE OF CO. DOM:	200.00	10/20/2010	3.61	< 0.002	< 0.10	41	NΛ	4.4	< 0.01	1.3	4,5	140	
	GP-10-13-090110	9/1/2010	9.7	< 0.002	< 0.1	33	NA	18	0.01 J	< 0.12	5.6	140	
100	SHM-10-13-101910	10/19/2010	9.36	0.01 J	< 0.10	36		21	< 0.01	< 0.12	8.7	140	
	DUP-101910	10/19/2010	9.13	< 0.002	< 0.10	36		20	< 0.01	0.25 J	6.8	150	
SHM-10-14	SHM-10-14-090210	9/2/2010	3.96	< 0.002	<.0,10	43	NA -	6.3	< 0.01	3.7	8.7	120	
the second secon	SHM-10-14-101910	10./19/10	5.28	0.01 J	< 0.10	62		4.8	0.08	0.67 J	62	140	
				AND THE PARTY OF T		100 = 11						are a nameral	The state of the s
SHM-10-15	GP-10-15-090110	9/1/2010	2.67	0.01	<0.10	33	NA	5.7	<0.01	3.8	4.2	82	
***	SHM-10-15-090110		2.26	< 0.002	< 0.10	22	NA	11	< 0.01	8.4	3,2	NA	
_	DUP-090110	9/1/2010									1-1-1		
A Company	SHM-10-15-102010	10/20/2010	2.15	U.01 J	< 0.10	64	NA	12	< 0.01	10	4	95	
SHM-10-16	SHM-10-16-090210	9/2/2010	3.31	< 0.002	< 0,1	36	NA	31	< 0.01	2.9	5.3	91	
	DUP-09021tr	9.2.2010		2000		100							
	SHM-10-16-102010	10/20/2010	3,34	<: 0.002	~ 0.10	57	NA.	28	< 0.01	3.2	10	100	
SHL-23	SHL-23	8/12/2010	0.0496 J	< 0.002	<0.10	<7.0	NA	1.3	0.07	4.9	<1.0	< N	Test Kit (Filtered) < 5
											artie stare con front franc	(*11	
SHM-05-39A	SHM-05-39A	8/12/2010	4.01	<0.002	<0.10	11.1	NA	7.1	1. 900.0	6	2.9	27	Test Kit (Filtered) 100
SHM-07-03	SHM-07-03	8/12/2010	0.0239 J	< 0.002	<0.10	<7.0	NA	8.2	0.59	10	<1.0	12	Test Kit (Filtered) < 5
	DUP2-081210	8/12/2010											
100	0.05 0/2003-00-3				35.05.001.0								musus man same
SHM-07-05	SHM-07-05	8/12/2010	2.42	0.01 J	<0.10	<7.0	NA	8.9	0.06	8,1	2	24	Test Kit (Filtered) > 500
	DUP-081210	8/12/2010											
SHM-99-31B	SHM-99-31B	8/12/2010	4.1	<0.002	<0.10	11 J	NA	4	<0.01	3	6.5	28	Test Kit (Filtered) 5
_				11-11-00-									
HM-05-041B	SHM-05-041B	8/9/2010	NA.	NA	NA	NA NA	NA	NA NA	NA NA	NA	2.6	32	Test Kit (Filtered) 500
SHM-05-42A	SHM-05-42A	8/12/2010	0.0189.J	<0.002	<0.10	<7,0	NA	1.6	<0.01	5.6	<1.0	9.4	Test Kit (Filtered) < 5
SHP-05-045A	SHP-05-045A	8/9/2010	NΛ	NA	NA NA	NA	NΛ	NA	NA	NA	3.6	48	Test Kit (Filtered) 10
SHP-05-046B	SHP-05-046B	8/9/2010	NA	NA	NA	NA	NA	NA NA	NA	NA	14	150	Test Kit (Filtered) 80

NA - Not Applicable ug/L is micrograms per liter mg/l - miligrams per liter

J means estimated results

B indicates that analyte was detected in the a

COD - Chemical Oxygen Demend TOC - Total Organic Carbon

DDC - Dissolved Organic Carbon DiC - Dissolved Inorganic Carbon TABLE 4
SOIL SAMPLING RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Boring Location	Sample ID	Date	Depth	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	TOC % Replicate 1	TOC % Replicate 2	Total Solids %
SP-10-07	SP-10-07-029	5/21/2010	29	< 0.092	48 J	< 0.262	5.33	14.2	0.01	0.011	83
	SDUP-052110	5/21/2010	29	< 0.086	45 J	< 0.246	4.57	13.6	0.012	< 0.01	84
	SP-10-07-041	5/21/2010	41	< 0.083	120	< 0.238	10.1	28.8	0.012	0.02	91
	SP-10-07-053	5/21/2010	53	< 0.766	510 J	< 2.19	49	109	0.032	0.032	99
SP-10-11	SP-10-11-003	8/12/2010	3	3.5	<24	< 0.26	5.3	13	0.055	0.065	92
	SP-10-11-005	8/12/2010	5	1	120	< 0.25	10	66	0.45	0.618	94
	SP-10-11-007	8/12/2010	7	2.2	61 J	< 0.27	7.9	33	0.904	0.805	88
	SP-10-11-012	8/12/2010	12	0,24 J	92	< 0.25	6.9	27	0.469	0.397	96
	SP-10-11-015	8/12/2010	15	14	85	< 0.25	7.8	48	1.2	1.12	95
	SP-10-11-020	8/12/2010	20	0.84	73 J	< 0.24	9.4	25 J	1.52	1.55	99
	SDUP-081210	8/12/2010	20	0.3 J	59 J	< 0.24	9.2	22	***		98
	SP-10-11-023	8/12/2010	23	0.24 J	66 J	< 0.25	7.1	18	0.03	0.043	95
	SP-10-11-025	8/12/2010	25	0.063 J	43 J	< 0.27	5.6	12	0.025	0.025	89
	SDUP8-081210	8/12/2010	25	0.67	24 J	< 0.25	8,2	14	-	-	94
	SP-10-11-033	8/12/2010	33	0.041 J	44 J	< 0,30	4.7	11	< 0.01	< 0.01	79
	SP-10-11-040	8/12/2010	40	0.063 J	57 J	< 0.27	5	10	0.036	0.036	90
	SP-10-11-055	8/12/2010	55	0.1 J	59 J	< 0.27	5	11	< 0.01	0.014	90
	SP-10-11-062	8/12/2010	62	6.4	180	<0,25	25	48	0.017	0.018	96
SP-10-12	SP-10-12-001	8/12/2010	1	0.2 J	61 J	<0.25	6.2	95	3.83	3.97	97
	SP-10-12-005	8/12/2010	5	0.82	240	< 0.27	16	210	5.87	7.56	89
	SP-10-12-009	8/12/2010	9	0.23 J	<23	< 0.25	8.4	16	0.744	0.714	98
	SP-10-12-015	8/12/2010	15	0.59	32 J	< 0.26	5.3	12	0.185	0.129	94
	SP-10-12-017	8/12/2010	17	0.13 J	51 J	< 0.26	3.8	8.5	0.094	0.058	91
	SP-10-12-025	8/12/2010	25	0.13 J	30 J	< 0.26	4.7	12	<0.010	< 0.010	91
	SP-10-12-035	8/12/2010	35	0.041 J	40 J	< 0.30	4.9	17	0.062	0.152	81
	SDUP2-081210	8/12/2010	35	0.038 J	48 J	< 0.29	4.9	17	-	-	84
	SP-10-12-040	8/12/2010	40	< 0.03	50 J	< 0.26	4.6	15	0.117	0.089	91
	SDUP3-081210	8/12/2010	40	0.032 J	28 J	< 0.26	4.6	16	-	**	90
	SP-10-12-042	8/12/2010	42	< 0.03	<26	< 0.28	5	12	< 0.010	< 0.010	86
	SP-10-12-052	8/12/2010	52	< 0.03	66 J	< 0.26	4.3	11	0.019	< 0.010	89
	SP-10-12-055	8/12/2010	55	0.029 J	<27	< 0.29	4.6	11	< 0.010	< 0.010	81

TABLE 4
SOIL SAMPLING RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Boring Location	Sample ID	Date	Depth	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zīnc (mg/kg)	TOC % Replicate 1	TOC % Replicate 2	Total Solids %
SP-10-13	SP-10-13-001	8/12/2010	1	0.091.1	<21	< 0.23	5.7	1.1	0.057	0.061	100
	SP-10-13-005	8/12/2010	5	0.16 J	130	< 0.26	10	22	0.332	0.320	93
	SP-10-13-008	8/12/2010	8	0.12 J	<24	< 0.26	13	29	0.570	0.396	94
	SP-10-13-010	8/12/2010	10	0.15 J	42 J	< 0.25	4.8	13	0.075	0.090	93
	SP-10-13-011	8/12/2010	11	0.026 J	<23	< 0.25	4.4	9.7	< 0.010	0.014	99
	SP-10-13-015	8/12/2010	15	0.22 J	44.1	< 0.26	4.6	9	0.020	0.023	93
	SP-10-13-017	8/12/2010	17	0.027 J	27 J	< 0.23	4.8	11	0.036	0.039	99
	SP-10-13-020	8/12/2010	20	0.1 J	38 J	<0.25	5.6	13	0.061	0.073	95
	SP-10-13-023	8/12/2010	23	0.68	3200	< 0.52	14	13000	5.37	5,5	90
	SP-10-13-025	8/12/2010	25	0.051 J	<25	< 0.27	7.2	20	0.343	0.324	89
	SP-10-13-027	8/12/2010	27	0.35 J	700	< 0.44	4.3	2000	12.5	12.2	55
	SP-10-13-030	8/12/2010	30	0.042 J	<24	< 0.26	3.4	10	9.48	7.37	93
	SP-10-13-032	8/12/2010	32	0.074 J	<23	<0.25	3.6	9.8	0.102	0.082	96
	SDUP4-081210	0812/2010	32	< 0.03	<23	≤0,25	3.4	9.1	***		94
	SP-10-13-035	8/12/2010	35	< 0.03	43 J	< 0.29	3.7	9.5	0.225	0.166	79
	SP-10-13-040	8/12/2010	40	0.08 J	150	< 0.33	14	34	0.412	0.410	73
	SP-10-13-050	8/12/2010	50	< 0.03	<24	< 0.26	5	12	< 0.010	< 0.010	90
	SP-10-13-065	8/12/2010	65	<0.03	<24	<0.26	3.8	8.1	<0.010	<0.010	92
	SP-10-13-067	8/12/2010	67	<0.03	25 J	< 0.27	4.8	10	< 0.010	< 0.010	84
	SDUP5-081210	8/12/2010	67	< 0.03	<26	<0.28	4.5	9.8	~	~0.010	85
	SP-10-13-070	8/12/2010	70	0.13 J	<22	< 0.24	8.1	15	<0.010	0.017	96
	SP-10-13-072	8/12/2010	72	0,1 J	47 J	< 0.25	6	13	<0.010	<0.017	94
	SP-10-13-075	8/12/2010	75	0.28 J	52 J	<0.27	7.2	16	<0.010	<0.010	90
	SP-10-13-077	8/12/2010	77	0.093 J	52 J	<0.27	4,5	22	<0.010	<0.010	89
	SP-10-13-083	8/12/2010	83	2.2	420	< 0.26	2,1	85	<0.010	<0.010	91
SP-10-14	SP-10-14-005	8/17/2010	5	0.067 J	40 J	<0.26		14			
01-10-14	SP-10-14-010	8/17/2010	10	0.37 J	100	<0.25	6.1	91	0.077	0.073	93
	SP-10-14-015	8/17/2010	15	0.15 J	130	<0.30	5,7		0.752	0.858	93
	SP-10-14-020	8/17/2010	20	0.31 J	84 J	<0.26	39	160	0.293	0.287	80
	SP-10-14-023	8/17/2010		0.034 J	28 J	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		120	5.11	4.63	91
	SP-10-14-023 SP-10-14-027	8/17/2010	23 27	<0.09	28 J 260 J	<0.28	5.6	36	0.160	0.127	86
	SP-10-14-027 SP-10-14-030	8/17/2010	30	<0.03	34 J	<0.90 <0.32	2 4.8	56	23.9	25.0	27
	SDUP-081710	8/17/2010						11	4.76	5.41	72
			30	<0.03	<27	<0.29	6.1	16			81
	SP-10-14-031 SP-10-14-035	8/17/2010 8/17/2010	31	<0.10	150 J	< 0.98	4.4	12	14.7	14.3	24
	I The second sec	Name of the last o		<0.05	82 J	<0.51	7.1	26	5.63	5,58	46
	SP-10-14-040	8/17/2010	40	<0.03	41 J	<0.34	7.2	27	1.26	1.23	70
	SP-10-14-044	8/17/2010	44	0.044 J	<25	< 0.27	4.8	13	0.039	0.043	85
	SP-10-14-046	8/17/2010	46	<0.03	<25	<0.28	4.6	12	0.046	0.073	87
	SP-10-14-055	8/17/2010	55	<0.03	<26	<0.28	4.7	12	0,013	0.016	85
	SDUP2-081710	8/17/2010	55	<0.03	32.1	<0.28	4	11	-		85
	SP-10-14-060	8/17/2010	60	<0.03	<27	<0.29	6.8	15	<0.010	0.017	81
	SP-10-14-070	8/17/2010	70	< 0.03	<26	< 0.29	7.2	15	<0.010	<0.010	80
	SP-10-14-075	8/17/2010	75	<0.03	28.1	<0.28	5,3	16	0.011	0.013	84
	SP-10-14-080	8/17/2010	80	0.54	350	< 0.25	6.5	31	0.032	0,025	93

TABLE 4
SOIL SAMPLING RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Boring Location	Sample ID	Date	Depth	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	TOC % Replicate 1	TOC % Replicate 2	Total Solids %
SP-10-15	SP-10-15-001	8/12/2010		0.1 J	<22	< 0.24	6	13	0.034	0.027	99
	SP-10-15-004	8/12/2010	4	1.3	95	< 0.25	12	83	1.50	1.81	96
	SP-10-15-005	8/12/2010	5	0.71	85	< 0.25	8.8	55	0,742	0.618	98
	SP-10-15-010	8/12/2010	10	12	100	< 0.30	6.2	53	1,24	1.53	83
	SP-10-15-015	8/12/2010	15	1.1	120	< 0.30	5.6	140	0.341	0.499	80
	SP-10-15-017	8/12/2010	17	0.32 J	100	< 0.26	10	86	1.52	2.45	93
	SP-10-15-018	8/12/2010	18	1.2.1	940	<1.8	6.4	1000	9.38	7.54	65
	SP-10-15-020	8/12/2010	20	3	93	< 0.27	17	110	4.47	7.27	88
	SP-10-15-025	8/12/2010	25	0.8	210	< 0.31	37	220	5.45	4.80	76
	SDUP6-081210	8/12/2010	25	0.72	210	< 0.32	30	380			76
	SP-10-15-028	8/12/2010	28	0.037 J	27 J	< 0.29	8.5	11	0,473	0.358	80
	SP-10-15-030	8/12/2010	30	0.15 J	51 J	< 0.31	5.6	13	0.188	0.038	78
	SDUP7-081210	8/12/2010	30	0.074 J	40 J	< 0.30	4.6	-11			80
	SP-10-15-035	8/12/2010	35	0.034 Ĵ	55 J	< 0.29	4.4	9.5	0.111	0.074	81
	SP-10-15-040	8/12/2010	40	0.033 J	41.1	<0.31	4	9.7	0.056	0.026	77
	SP-10-15-055	8/12/2010	55	1.2	220	<0.26	2.2	48	0.039	0.027	91
SP-10-16	SP-10-16-036	9/1/2010	36	0.098 J	25.1	< 0.26	16	29	0.037	0.036	92
	SDUP-081910	9/1/2010	36	0.098 J	<24	< 0.26	19	34		-	93
	SP-10-16-050	9/1/2010	50	< 0.03	<27	< 0.29	4.8	12	< 0.010	0.018	84
	SP-10-16-053	9/1/2010	53	< 0.03	36 J	< 0.26	4.8	13	0.02	0.014	88
	SP-10-16-060	9/1/2010	60	0.038 J	39 J	< 0.27	8.5	18	0.015	0.016	87
	SP-10-16-065	9/1/2010	65	< 0.03	39 J	< 0.26	4_6	13	< 0.010	0.014	90
	SDUP2-081910	9/1/2010	65	0.032 J	34 J	< 0.27	5.5	13			90
	SP-10-16-070	9/1/2010	70	0.041 J	41 J	< 0.26	9.7	18	0.022	0.021	93
	SP-10-16-080	9/1/2010	80	0.047 J	64 J	< 0.27	7.6	16	< 0.01	0.013	85
	SP-10-16-093	9/1/2010	93	0.45	380	< 0.26	9.9	33	0.04	0.045	90

- 224 10pm

Notes:

mg/kg means milligrams per kilograms

ug/kg means micrograms per kilograms

J means estimated results

B indicates that analyte was detected in the associated meth

< means less than

> means greater than

TOC - Total Organic Carbon

TABLE 4
SOIL SAMPLING RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Boring Location	Sample ID	Date	Depth	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)
SP-10-15	SP-10-15-001	8/12/2010	D	3,700	< 0.17	8.6	10	0.34	< 0.03	420	6.8	2.7
	SP-10-15-004	8/12/2010	4	5,500	0.66 J	17	25	0,49	0.7	930	16	2.9
	SP-10-15-005	8/12/2010	5	4,300	0.47 J	12	20	0.34	0.24 J	2,700	9.7	2.6
	SP-10-15-010	8/12/2010	10	4,300	0.35 1	LI COM	16	0.27	0.14 J	920	11	2.7
	SP-10-15-015	8/12/2010	15	3,800	0.41 J	8.9	12	0.24 J	< 0.04	830	11	2.4
	SP-10-15-017	8/12/2010	17	4,300	0.64 J	6.2	41	0.3	0.26 J	790	8.4	2,1
	SP-10-15-018	8/12/2010	18	9,300	11 J	25	120	< 0.09	< 0.24	9,000	69	14
	SP-10-15-020	8/12/2010	20	6,000	5:9	17	38	0.46	0.14 J	3,000	14	3.8
	SP-10-15-025	8/12/2010	25	4,900.	4.0	16	170	0.35	0.27 J	4,500	35	4.5
	SDUP6-081210	8/12/2010	25	5,800	2.5 J	18	140	0.54	0.26 J	5,600	36	6.1
	SP-10-15-028	8/12/2010	28	4,800	<0.20	7.9	12	0.27	<0.04	340	10	1.5
	SP-10-15-030	8/12/2010	30	3,600	0.71 J	39	7.6	0.32	< 0.04	390	7.1	2.3
	SDUP7-081210	8/12/2010	30	3,000	0.25 J	22	7	0.29	< 0.04	490	5	1.9
	SP-10-15-035	8/12/2010	35	2,900	<0.21	15	6.4	0.23 J	< 0.04	540	5,9	2
	SP-10-15-040	8/12/2010	40	2,700	0.27 J	15	5.8	0.2 J	<().()4	450	5.4	1.6
	SP-10-15-055	8/12/2010	55	3,600	0.26 J	58	14	0.78	0.19 J	1,500	4.4	1.6
SP-10-16	SP-10-16-036	9/1/2010	36	8,800	0,24 J	4,2	19	0.66	< 0.03	920	32	5.7
	SDUP-081910	9 1 2010	36	9,600	0.24 J	6	23	0.76	0.03	770	.32	6.5
	SP-10-16-050	9/1/2010	50	3,100	0.24 J	1.1	4.9	0.21 J	<0.04	330	7.6	2.1
	SP-10-16-053	9/1/2010	53	3,100	0.32 J	1.2	6.5	0.24	<0.04	400	8.8	2
	SP-10-16-060	9/1/2010	60	4,800	0,5 J	5	9.2	0.38	< 0.04	490	16	3.5
	SP-10-16-065	9/1/2010	65	3,200	0.21 J	1.2	7.3	0.24	< 0.03	390	8	2.4
	SDUP2-081910	9/1/2010	65	3,500	0.2 J	1.3	7.1	0.26	< 0.04	390	9	2.6
	SP-10-16-070	9/1/2010	70	5,300	0.47 J	8.8	7.5	0.34	< 0.03	520 J	16 J	3.4
	SP-10-16-080	9/1/2010	80	3,900	0.21 J	4.8	12	0.39	< 0.04	880	12	2.6
	SP-10-16-093	9/1/2010	93	5,300	0.51	J	33	0.92	< 0.03	3,700	17	4.3

Notes:

mg/kg means milligrams per kilograms

ug/kg means micrograms per kilograms

J means estimated results

B indicates that analyte was detected in the associated method blank

< means less than

> means greater than

TABLE 4
SOIL SAMPLING RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Boring Location	Sample ID	Date	Depth	Copper (mg/kg)	lron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)
SP-10-07	SP-10-07-029	5/21/2010	29	3.69	4,4()()	2.1	900 J	47.7	< 0.003	5.6	690	< 0.169
	SDUP-052110	5/21/2010	29	3.6	4,000	2.22	750	42.3	< 0.003	5.11	570	< 0.158
	SP-10-07-041	5/21/2010	41	9.8	9,100	5.36	3,100	129	< 0.003	16.2	1,400	0.175 J
	SP-10-07-053	5/21/2010	53	29,6	41,000	29.3	21,000	74()	-= 0.002	101	11,000	1,45 J
SP-10-11	SP-10-11-003	8/12/2010	3	6.8	5,300	5,9	1200	89	< 0.02	6.1	500	< 0.12
	SP-10-11-005	8/12/2010	5	8.1	9,700	110	2500	190	0.15	11	880	< 0.12
	SP-10-11-007	8/12/2010	7	9.3	7,700	22	1,900	180	< 0.02	9.7	710	< 0.12
	SP-10-11-012	8/12/2010	12	7,3	6,600	21	1,400	150	<0.02	8.4	570	0.14 J
	SP-10-11-015	8/12/2010	15	33	12,000	1.4- 24	1,600	130	0.03 J	16	570	0.12 J
1 ×4 × 1	SP-10-11-020	8/12/2010	20 · ·	- 13 J	9,200	16 +	2;600	110 J	.<0.02	12	680 J	0:24 I
	SDUP-081210	8/12/2010	20	1.1	8,400	17	1,800	88	< 0.01	12	720	0.33 J
	SP-10-11-023	8/12/2010	23	7.5	7,900	10	2,000	150	< 0.02	12	660	< 0.12
	SP-10-11-025	8/12/2010	25	5.7	6,300	5,2	1,800	120	< 0.02	9.3	400	< 0.12
	SDUP8-081210	8/12/2010	25	6.2	7,700	6.3	2,500	120	<().02	12	490	< 0.12
	SP-10-11-033	8/12/2010	33	4.7	5,000	4.6	940	120	<0.02	6.9	380	<0.14
	SP-10-11-040	8/12/2010	40	4.7	5,600	4.9	1,400	100	< 0.02	7.8	350	0.14 J
	SP-10-11-055	8/12/2010	55	5.1	5.200	4.3	1,200	62	< 0.02	7.7	450	<0,12
	SP-10-11-062	8/12/2010	62	12	19,000	13	11,000	440	<0.02	45	5,600	< 0.23
SP-10-12	SP-10-12-001	8/12/2010	i	40	7,500	95	980	110	0.068 J	6.6	350	0.32 J
	SP-10-12-005	8/12/2010	5	260	31,000	510	2200	410	0.75	17	890	0.84 J
	SP-10-12-009	8/12/2010	9	7.3	8,500	8.5	1,900	76	< 0.02	9.3	410	0.26 J
	SP-10-12-015	8/12/2010	15	6.6	5,100	7.9	990	62	< 0.01	5.6	620	< 0.12
	SP-10-12-017	8/12/2010	17	7.9	3,700	3.5	660	43	< 0.02	3.2	490	< 0.12
	SP-10-12-025	8/12/2010	25	4.7	5,300	4.6	920	90	< 0.02	5.8	490	< 0.12
	SP-10-12-035	8/12/2010	35	9.7	5,300	16	1,200	80	0.43	5.9	330	0.18 J
	SDUP2-081210	8/12/2010	35	9	5,300	14	1,200	84	0.48	5.9	440	0.14 J
	SP-10-12-040	8/12/2010	40	12	5,200	12	1,100	70	0.22	5.8	360	< 0.12
	SDUP3-081210	8/12/2010	40	14	4,800	16	1,000	70	0.79	5.7	390	0.13 J
	SP-10-12-042	8/12/2010	42	4	4,900	4.4	1,100	84	< 0.02	5.9	480	< 0.13
	SP-10-12-052	8/12/2010	52	5.4	5,200	4.8	970	120	0.017 J	5.9	460	0.13 J
	SP-10-12-055	8/12/2010	55	4.5	4,600	4.1	1,200	57	<0.02	6.1	330	< 0.13

TABLE 4
SOIL SAMPLING RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Boring Location	Sample ID	Date	Depth	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)
SP-10-13	SP-10-13-001	8/12/2010	T	5	6,000	5.9	1200	97	<0.02	6	470	< 0.11
	SP-10-13-005	8/12/2010	5	7.4	7,400	20	2300	120	< 0.02	12	1000	< 0.12
	SP-10-13-008	8/12/2010	8	7.7	9,000	9.4	2,700	130	1.6	9.6	1,500	0.14 J
	SP-10-13-010	8.15.5010	10	4.9	5.000	5,8	1,200	62	< 0.02.	6.7	360	0.211
	SP-10-13-011	8/12/2010	11	4	4,700	4.3	870	89	< 0.02	5.2	430	0.12 J
	SP-10-13-015	8/12/2010	15	3.6	4,200	3.7	880	71	< 0.02	4,4	560	< 0.12
	SP-10-13-017	8/12/2010	17	4.4	5,100	4.5	1,000	96	< 0.02	5.4	520	0.15 J
	SP-10-13-020	8/12/2010	20	5,2	6,000	.5.7	1,400	100	< 0.02	8.7	440	0.12 J
	SP-10-13-023	8/12/2/010	23.	33	. 17,000	49	2,100	3000	0.18	. 15	1,200	1.5
	SP-10-13-025	8/12/2010	25	5.3	6,100	.5.3	1,600	64	< 0.02	8.2	480	.0.14 J
	SP-10-13-027	8/12/2010	27	15	9,700	53	990	660 35	0.17	5.5	280	3.0
	SP-10-13-030	8/12/2010	30	0.83	3,100	2.5	940	35	< 0.02	3.9	160	0.14 J
	SP-10-13-032	8/12/2010	32	3.1	3,200	3.6	930	34	< 0.02	5,6	320	< 0.12
	SDUP4-081210	0812/2010	32	2.7	3,100	3.5	900	34	< 0.02	5.3	310	< 0.12
	SP-10-13-035	8/12/2010	35	4.5	3,400	3,5	1,000	32	<0.02	5.8	330	<0.14
	SP-10-13-040	8/12/2010	40	71	16,000	13	3,400	150	<().()2	23	1,400	< 0.16
	SP-10-13-050	8/12/2010	50	4,5	4,000	3,8	1400 J	44 J	< 0.02	6.7	400	<0.12
	SP-10-13-065	8 12 2010	65	3, 1)	3900 T	3.3	930 1	33-1	~0.02	5.6	120	- 0.12
	SP-10-13-067	8/12/2010	67	4.7	5,400	4,5	1,200	42	<()_()2	7.2	380	< 0.13
	SDUP5-081210	8/12/2010	67 70	4.5	4,900	4	1,100	39 82	<0.02	6.7	430	< 0.13
	SP-10-13-070	8,12/2010	70	6.2	8,500	7,1	2,200	82	< 0.02	9,2	450	< 0.11
	SP-10-13-072	8/12/2010	72	5.5	9,200	7.3	1,600	130	< 0.02	7.6	390	< 0.12
	SP-10-13-075	8/12/2010	75	5.9	7,300	6.6	1,700	170	< 0.02	8	600	< 0.13
	SP-10-13-077	8/12/2010	77	3.4	4,800	9.4	1,100	230	< 0.02	5.2	610	< 0.12
	SP-10-13-083	8/12/2010	83	23	5,700	49	510	600	< 0.02	2.5	2,000	< 0.12
SP-10-14	SP-10-14-005	8/17/2010	.5	6.2	6,600	6.0	1600	98	< 0.02	8.5	520	0.16 J
	SP-10-14-010	8/17/2010	10	11	9,600	180	2500	140	0.23	14	790	0.16 J
	SP-10-14-015	8/17/2010	15	18	21,000	150	1,300	160	< 0.02	16	300	0.44 J
	SP-10-14-020	8/17/2010	20	15	13,000	42	4,100	130	<0,02	23	1,500	0.14 J
	SP-10-14-023	8/17/2010	23	5.9	5,400	6.6	1,400	65	< 0.02	8.8	460	< 0.13
	SP-10-14-027	8/17/2010	27	6.9	9,300	10	1,500	400	< 0.06	3 J	260 J	2.1 J
	SP-10-14-030	8/17/2010	30	4.6	4,100	4.7	1,200	41	< 0.02	6.1	260	0,35 J
	SDUP-081710	8/17/2010	30	4.6	5,800	6	1,400	58	< 0.02	7.9	280	0.14 J
	SP-10-14-031	8/17/2010	31	6.4	950	1.6 J	430	22	< 0.07	4.2	<140	1.4 J
	SP-10-14-035	8/17/2010	35	6.1	4,900	3.9 J	1,200	57	< 0.03	8.4	230	0.63 J
	SP-10-14-040	8/17/2010	40	7.3	8,000	6.6	1,400	54	< 0.02	15	480	0.8 J
	SP-10-14-044	8/17/2010	44	4.5	4,100	4	1,300	39	< 0.02	6.1	400	< 0.13
	SP-10-14-046	8/17/2010	46	3.3	4,000	3,2	1,200	46	< 0.02	5.5	450	< 0.13
	SP-10-14-055	8/17/2010	55	6	4,100	3.7	1,200	44	< 0.02	5.6	310	< 0,13
	SDUP2-081710	8/17/2010	55	5	3,600	4.1	1,100	37	< 0.02	5.5	270	< 0.13
	SP-10-14-060	8/17/2010	60	6.3	6,200	5.6	1,400	60	< 0.02	8.1	550	< 0,14
	SP-10-14-070	8/17/2010	70	5.2	6,000	4.9	1,300	86	<0.02	7.3	850	< 0.13
	SP-10-14-075	8/17/2010	75	4.1	5,200	5.3	1,400	170	< 0.02	7.3	600	<0.13
	SP-10-14-080	8/17/2010	80	5.3	6,900	17	1,700	230	<(),()2	8.7	2,200	< 0.12

TABLE 4
SOIL SAMPLING RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Boring Location	Sample ID	Date	Depth	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)
SP-10-15	SP-10-15-001	8/12/2010	1	5.9	5,900	5.7	1400	110	<().()2	7.1	470	< 0.11
	SP-10-15-004	8/12/2010	4	24	9,400	110	2100	120	0,33	12	810	0.19 J
	SP-10-15-005	8/12/2010	5	10	11,000	39	1,600	230	0.049 J	9.3	550	0.16 J
	SP-10-15-010	8.12.2010	10	8.2	8,100	21	1,800	100	0.037 J	11	410	0.16.1
	SP-10-15-015	8/12/2010	15	7.1	7,000	12	1,600	81	<0.02	9.6	330	0.17 J
	SP-10-15-017	8/12/2010	17	11	12,000	38	1,400	130	0.17	9.0	420	0.33 J
	SP-10-15-018	8/12/2010	18	310	140,000	1200	600	1100	0.44	75	380 J	2.9 J
	SP-10-15-020	8/12/2010	20	14	9,900	220	1,800	110	0.067 J	12	530	0.39 J
	SP-10-15-025	8/12/2010	25	. 38	24,000	260	1,900	240.	0.32	20	480.	0.46·J ·
	SDUP6-081210	. 8/12/2010	25 +	41	23,000	. 390	. 2,600	. 240	0.15	. 23 .	- 930	0,44 J
	SP-10-15-028	8/12/2010	28	3.7	5,800	5.3	2,000	58	<0.02	6.3	320	< 0.13
	SP-10-15-030	8/12/2010	30	5.6	7,800	5.8	1400 J	64 J	<0.02	7.8	360	0.27 J
	SDUP7-081210	8/12/2010	30	4.4	5,600	4.6	1,100	50	< 0.02	6.3	350	< 0.14
	SP-10-15-035	8/12/2010	35	5	5,100	4.6	1,200	62	<0.02	6.6	300	< 0.14
	SP-10-15-040	8/12/2010	40	4.1	6,300	4.8	1,200	310	< 0.02	5.9	270	< 0,14
	SP-10-15-055	8/12/2010	55	4.3	4,100	21	590	680	<0.02	2.5	1,200	<0.12
SP-10-16	SP-10-16-036	9/1/2010	36	13	12,000	9.6	5700	100	<0.02	20	1400	<0.12
	SDUP-081910	9/1/2010	36	- 13	13,000	12	6400	120	= 0.02	24	2000	~0.12
	SP-10-16-050	9/1/2010	50	3.1	4.300	3.9	1500	40	< 0.02	8.7	330	<0.14
	SP-10-16-053	9/1/2010	53	3.8	4,100	4	1,600	40	< 0.02	9.6	420	< 0.12
	SP-10-16-060	9/1/2010	60	18	8,800	8.2	2,700	72	<(),()2	15	520	<0.12
	SP-10-16-065	9/1/2010	65	4.3	4,000	3.8	1,500		< 0.02	9.7	420	< 0.12
	SDUP2-081910	9/1/2010	65	5.2	4,500	5.2	1,800	43	<0.02	11	430	<0.12
	SP-10-16-070	9/1/2010	70	6.6	9,400	8.2	3,100	82 J	<0.02	14.0	500	< 0.12
	SP-10-16-080	9/1/2010	80	4.8	7,100	6.4	2,200	100	< 0.02	9.4	900	< 0.13
	SP-10-16-093	9/1/2010	93	12	12,000	14	2,700	310	< 0.02	7.9	2,300	< 0.12

Notes:

mg/kg means milligrams per kilograms

ug/kg means micrograms per kilograms

J means estimated results

B indicates that analyte was detected in the associated meth

< means less than

> means greater than

TABLE 4
SOIL SAMPLING RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Boring Location	Sample ID	Date	Depth	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	TOC %	TOC	Total Solids
SP-10-07	SP-10-07-029	5/21/2010	29	< 0.092	48 J	< 0.262	5.33	14.2	0.01	0.011	83
	SDUP-052110	5/21/2010	29	< 0.086	45.1	< 0.246	4.57	13.6	0.012	< 0.01	84
	SP-10-07-041	5/21/2010	41	< 0.083	120	< 0.238	10.1	28.8	0.012	0.02	91
	SP-10-07-053	5/21/2010	53	< 0.766	510 J	< 2.19	49	109	0.032	0.032	99
SP-10-11	SP-10-11-003	8/12/2010	3	3.5	<24	< 0.26	5.3	13	0.055	0.065	92
	SP-10-11-005	8/12/2010	5	1	120	<0.25	10	66	0.45	0.618	94
	SP-10-11-007	8/12/2010	7	2.2	61 J	< 0.27	7.9	33	0.904	0.805	88
	SP-10-11-012	8/12/2010	12	0.24 J	92	< 0.25	6.9	27	0.469	0.397	96
1 4 4 4	SP-10-11-015	8/12/2010	15	. 14 .	85	<0.25	.7:8	48.	1.2	1:12	95
* 15 118	SP-10-11-020 -	8/12/2010	20	0.84	4 73 J	<0.24	9.4	25 J	1.52	1.55	99
	SDUP-081210	8/12/2010	20	0.3 J	59 J	<0.24	9.2	22	100	**	98
	SP-10-11-023	8/12/2010	23	0.24 J	66 J	< 0.25	7.1	18	0.03	0.043	95
	SP-10-11-025	8/12/2010	25	0.063 J	43 J	<0.27	5.6	12	0.025	0.025	89
	SDUP8-081210	8/12/2010	25	0.67	24 J	< 0.25	8.2	14	42		94
	SP-10-11-033	8/12/2010	33	0.041 J	44 J	< 0.30	4.7	11	< 0.01	< 0.01	79
	SP-10-11-040	8/12/2010	40	0.063 J	57 J	< 0.27	5	10	0.036	0.036	90
	SP-10-11-055	8/12/2010	55	0.1 J	59 J	< 0.27	5	11	< 0.01	0.014	90
	SP-10-11-062	8 12 2010	62	6.4	180	0.25	25	48	0.017	0.018	96
SP-10-12	SP-10-12-001	8/12/2010	1	0.2 J	61 J	< 0.25	6.2	95	3.83	3.97	97
	SP-10-12-005	8/12/2010	5	0.82	240	< 0.27	16	210	5.87	7.56	89
	SP-10-12-009	8/12/2010	9	0,23 J	<23	< 0.25	8.4	16	0.744	0.714	98
	SP-10-12-015	8/12/2010	15	0.59	32 J	< 0.26	5.3	12	0.185	0.129	94
	SP-10-12-017	8/12/2010	17	0.13 J	51 J	< 0.26	3.8	8.5	0.094	0.058	91
	SP-10-12-025	8/12/2010	25	0.13 J	30 J	< 0.26	4.7	12	< 0.010	< 0.010	91
	SP-10-12-035	8/12/2010	35	0.041 J	40 J	< 0.30	4.9	17	0.062	0.152	81
	SDUP2-081210	8/12/2010	35	0.038 J	48 J	< 0.29	4.9	17		**	84
	SP-10-12-040	8/12/2010	40	<0.03	50 J	< 0.26	4.6	15	0.117	0.089	91
	SDUP3-081210	8/12/2010	40	0.032 J	28 J	< 0.26	4.6	16			90
	SP-10-12-042	8/12/2010	42	< 0.03	<26	< 0.28	5	12	<0.010	< 0.010	86
	SP-10-12-052	8/12/2010	52	< 0.03	66 J	< 0.26	4.3	11	0.019	< 0.010	89
	SP-10-12-055	8/12/2010	55	0.029 J	<27	<0,29	4.6	11	< 0.010	< 0.010	81

TABLE 4
SOIL SAMPLING RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Boring Location	Sample ID	Date	Depth	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	TOC	TOC	Total Solids
SP-10-13	SP-10-13-001	8/12/2010		0.091 J	<21	< 0.23	5.7	11	0.057	0.061	100
	SP-10-13-005	8/12/2010	5	0.16.1	130	<0.26	10	22	0.332	0.320	93
	SP-10-13-008	8/12/2010	8	0.12 J	<24	<0.26	13	29	0.570	0.396	94
	SP-10-13-010	8, 12, 2010	10	0.15 1	42 J	- 0.25	4.8	13	0.075	0.090	93
	SP-10-13-011	8/12/2010	11	0.026 J	<23	<0.25	4.4	9.7	<0.010	0.070	99
	SP-10-13-015	8/12/2010	15	0.22 J	44 J	<0.26	4.6	9	0.020	0.014	
	SP-10-13-017	8/12/2010	17	0.027 J	27 J	< 0.23	4.8	11	0.020	0.023	93
	SP-10-13-020	8/12/2010	20	0.1 J	38 J	< 0.25	5.6	13	0.061	0.039	99
	SP:10-13-023	8/12/2010	- 23	0.68	3200	<0.52	14 -	13000	5.37		
	SP-10-13-025	.8/12/2010		- 0.051-J.	<25	<0.27	7.2	20		5.5	90
9.7	SP-10-13-027	8/12/2010	27	0.35 J	700	<0.44	4.3	2000	0.343	0.324	89
	SP-10-13-030	8/12/2010	30	0,042 J	<24	<0.26	3.4		12.5	12.2	55
	SP-10-13-032	8/12/2010	32	0.074 J	<23	<0.25		10	9.48	7.37	93
	SDUP4-081210	0812/2010	32	<0.03	<23	<0.25	3.6	9.8	0.102	0.082	96
	SP-10-13-035	8/12/2010	35	< 0.03	43 J	<0.29	3.4	9.1		**	94
	SP-10-13-040	8/12/2010	40	0.08 J	150	The state of the s	3.7	9.5	0.225	0.166	79
	SP-10-13-050	8/12/2010	50	<0.03	<24	<0.33	14	34	0.412	0,410	73
	SP-10-13-065	8 12 2010	65	0.03	The second secon	< 0.26	5	12	<(),()1()	< 0.010	9()
	SP-10-13-067	8/12/2010	67	<0.03	24	0.26	3.8	8.1	0.010	0,010	92
	SDUP5-081210	8/12/2010	422		25 J	0.27	4.8	10	<0.010	₹0.010	84
	SP-10-13-070	8/12/2010	67	<0.03		<0.28	4.5	9,8		1 221 55	85
	SP-10-13-072	8/12/2010	70	0.13 J	<22	<().24	8.1	15	<().()1()	0.017	96
	SP-10-13-075		72	0.1 J	47 J	<0.25	6	13	< 0.010	< 0.010	94
	SP-10-13-077	8/12/2010	75	0.28 J	52 J	<0.27	7.2	16	< 0.010	< 0.010	90
		8/12/2010	77	0.093 J	52 J	<0.27	4.5	22	<0.010	< 0.010	89
	SP-10-13-083	8/12/2010	83	2.2	420	<0.26	2.1	85	< 0.010	< 0.010	91
SP-10-14	SP-10-14-005	8/17/2010	5	0.067 J	40 J	< 0.26	6.1	14	0.077	0.073	93
	SP-10-14-010	8/17/2010	10	0.37 J	100	<0.25	13	91	0.752	0.858	93
	SP-10-14-015	8/17/2010	15	0.15 J	130	< 0.30	5.7	160	0.293	0.287	80
	SP-10-14-020	8/17/2010	20	0.31 J	84 J	< 0.26	39	120	5.11	4.63	91
	SP-10-14-023	8/17/2010	23	0.034 J	28 J	<0.28	5.6	36	0.160	0.127	86
	SP-10-14-027	8/17/2010	27	<0.09	260 J	<0.90	2	56	23.9	25.0	27
	SP-10-14-030	8/17/2010	30	< 0.03	34 J	<0.32	4.8	11	4.76		
	SDUP-081710	8/17/2010	30	< 0.03	<27	<0.29	6.1	16	4.70	5.41	72
	SP-10-14-031	8/17/2010	31	< 0.10	150 J	<0.98	4.4	12	200	14.2	81
	SP-10-14-035	8/17/2010	35	< 0.05	82 J	<0.51	7.1	26	14.7	14.3	24
	SP-10-14-040	8/17/2010	40	<0.03	41 J	<0.34	7.2	27	5.63	5.58	46
	SP-10-14-044	8/17/2010	44	0.044 J	<25	<0.27	4.8		1.26	1.23	70
	SP-10-14-046	8/17/2010	46	< 0.03	<25	<0.28	4.6	13	0.039	0.043	85
	SP-10-14-055	8/17/2010	55	<0.03	<26	<0.28	4.7	12	0.046	0.073	87
	SDUP2-081710	8/17/2010	55	<0.03	32 J	<0.28		12	0.013	0.016	85
	SP-10-14-060	8/17/2010	60	< 0.03	<27		4	11		55	85
	SP-10-14-070	8/17/2010	70	<0.03		<0.29	6.8	15	<0.010	0.017	81
	SP-10-14-075	8/17/2010	The second secon	The second secon	<26	<0.29	7.2	15	<0.010	<0.010	80
	SP-10-14-073 SP-10-14-080	et . Walter Street Control Control of	75	< 0.03	28 J	<0.28	5.3	16	0.011	0.013	84
	31-10-14-080	8/17/2010	80	0.54	350	<0.25	6.5	31	0.032	0.025	93

TABLE 4
SOIL SAMPLING RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Boring Location	Sample ID	Date	Depth	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)
SP-10-07	SP-10-07-029	5/21/2010	29	2,800	< 0.381	5.61	14.2	0.183 J	< 0.039	640 J	4.7	2.1
	SDUP-052110	5/21/2010	29	2,500	< 0.357	5.15	12	0.172.1	< 0.036	700	4	1.92
	SP-10-07-041	5/21/2010	41	5,900	0.469 J	12.2	19.3	0.298	0.0613 J	1,400	15	4.15
	SP-10-07-053	5/21/2010	53	30,000	< 3.18	32.4	74.6	1.01 J	< 0.322	25,000	68	21.2
SP-10-11	SP-10-11-003	8/12/2010	3	3,300	< 0.19	6.6	8.9	0.32	< 0.04	320	6.4	2.1
	SP-10-11-005	8/12/2010	5	5,600	0.3 J	11	86	0.52	0.21 J	1000	14	3.5
	SP-10-11-007	8/12/2010	7	4,800	< 0.19	10	14	0.39	< 0.04	760	12	2.8
	SP-10-11-012	8/12/2010	12	4,400	< 0.18	12	14	0.38	< 0.03	610	8.4	2.5
- 6.4 *	SP-10-11-015.	8/12/2010	15	4,500	0.43 J	. 12	15	. 0.44	220	- 860	. 42	3
	SP-10-11-020	8/12/2010	20	5,400	0.25 J	.11	38 J. ·	- 0.44	.,2.1 J	680 J., -	- 12 J	2.7
	SDUP-081210	8/12/2010	20	4,700	<0.17	13	20	0.42	0.16 J	580	9.7	2.8
	SP-10-11-023	8/12/2010	23	4,500	< 0.18	12	12	0.36	0.05 J	430	9.1	4.9
	SP-10-11-025	8/12/2010	25	3,200	<0.19	7.8	7.2	0.25	<0.04	490	10	2.1
	SDUP8-081210	8/12/2010	25	4,300	< 0.18	8	8.6	0.35	0.17 J	700	22	2.9
	SP-10-11-033	8/12/2010	33	3,000	< 0.22	9.7	- 11	0.31	< 0.04	800	5.1	1.8
	SP-10-11-040	8/12/2010	40	3,100	< 0.19	9.8	8.9	0.26	< 0.04	410	8.1	1.8
	SP-10-11-055	8/12/2010	55	3,000	<0.19	10	8.4	0.28	< 0.04	520	6.7	2.0
	SP-10-11-062	8 12 2010	62	17.000	-0.18	9,4	58	1.8	0.03	24,000	-59	9.6
SP-10-12	SP-10-12-001	8/12/2010	1	3.200	0,35 J	5.4	13	0,24	<(),()3	630	6.4	2.5
	SP-10-12-005	8/12/2010	5	6,900	2.2 J	12	78	0.59	<0.04	4200	18	5.8
	SP-10-12-009	8/12/2010	9	7,100	0.22 J	13	9.5	0.42	< 0.03	560	9.8	2.6
	SP-10-12-015	8/12/2010	15	3,400	< 0.18	9.6	10	0.35	< 0.03	690	5.6	2.2
	SP-10-12-017	8/12/2010	17	2,200	<0.19	6.2	9.3	0.25	<0.04	700	3.8	1.5
	SP-10-12-025	8/12/2010	25	2,600	< 0.19	9.0	9.2	0.25	< 0.04	760	4.8	2.4
	SP-10-12-035	8/12/2010	35	3,100	<0.22	9.4	8.1	0.2 J	< 0.04	480	6.3	1.7
	SDUP2-081210	8/12/2010	35	3,200	<0.21	9.2	9	0.24	< 0.04	580	6.1	1.7
	SP-10-12-040	8/12/2010	40	3,000	0.2 J	14	7.7	0.21 J	< 0.04	660	7	1.8
	SDUP3-081210	8/12/2010	40	2,800	< 0.19	15	8.7	0.24	< 0.04	640	7.4	1.8
	SP-10-12-042	8/12/2010	42	3,100	< 0.20	29	8.6	0.31	< 0.04	560	5.7	1.7
	SP-10-12-052	8/12/2010	52	2,800	< 0.19	26	8.4	0.28	< 0.04	480	10	2
	SP-10-12-055	8/12/2010	55	2,900	<0.21	34	6.3	0.28	< 0.04	330	6.7	1.6

TABLE 4
SOIL SAMPLING RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Boring Location	Sample ID	Date	Depth	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)
SP-10-13	SP-10-13-001	8/12/2010	1	3,500	0.2 J	8.4	9.4	0.28	< 0.03	500	5.6	2.3
	SP-10-13-005	8/12/2010	5	5,100	<0.18	8.8	18	0.45	<0.03	1100	16	3.2
	SP-10-13-008	8/12/2010	8	6,200	< 0.19	9.1	18	0,66	<().()4	490	18	2.9
	SP-10-13-010	8 12/2010	10	3,400	~ 0.18	5,3	7.2	0.28	< 0.03	570	6.4	1.9
	SP-10-13-011	8/12/2010	11	2,700	<0.18	7.4	8.5	0.27	<0.03	560	4.4	2
	SP-10-13-015	8/12/2010	15	2,800	<0.18	6.2	11	0.29	<0.03	560	5.2	1.8
	SP-10-13-017	8/12/2010	17	3,000	< 0.17	6.7	10	0.28	<0.03	520	4.8	1.9
	SP-10-13-020	8/12/2010	20	3.300	< 0.18	5.6	12	0.26	< 0.03	490	7,6	3.3
3 . 3	SP-10-13-023	8/12/2010	23	5,600	4.4	31.	43	0.49	3.5	2,100	52	4.5
1	SP-10-13-025	8/12/2010	.25	4,200	<0.19	7.5	12	0.31	<0.04	. 460	.8.6	2.5
	SP-10-13-027	8/12/2010	27	1,900	0.9 J	7	81	0.26 J	0.65 J	14,000	3.9	1.6
	SP-10-13-030	8/12/2010	.30	2,600	< 0.19	0.8	5.3	0.13 J	<0.04	390	4.7	1.4
	SP-10-13-032	8/12/2010	32	2,600	< 0.18	1.5	5.4	0.19 J	<0.03	550	4.6	1.4
	SDUP4-081210	0812/2010	.32	2,500	< 0.18	1.6	5,2	0.19 J	<0.03	600	4.4	1.3
	SP-10-13-035	8/12/2010	35	2,800	<0.21	1.7	5.9	0.19 J	<0.04	380	5.4	1.3
	SP-1()-13-040	8/12/2010	40	9,300	< 0.24	5.9	27	0.84	<0.05	2,500	48	5.9
	SP-10-13-050	8/12/2010	50	3,200	<().19	1,3	8.5	0.27	<0.04	480 J	6,9	the second secon
	SP-10-13-065	8 12/2010	65	2500 J	0.18	3.8	0,1	0,19 J	0.03	420	4.6.1	2.3
	SP-10-13-067	8/12/2010	67	3.200	<().2()	5,6	12	0.23	<0.04	450	5.9	1,4
	SDUP5-081210	8/12/2010	67	3,000	<0.20	5.4	13	0.24	<0.04	500	5.3	
	SP-10-13-070	8/12/2010	70	4,900	< 0.17	9,4	12	0.33	< 0.03	360	All a comment of the	1.8 4.3
	SP-10-13-072	8/12/2010	72	3,600	0.22 J	7.6	8.6	0.26	<0.03	680	13	The second second second second
	SP-10-13-075	8/12/2010	75	4,000	< 0.20	13	10	0.34	<0.03	560	8.2 9.3	1.8
	SP-10-13-077	8/12/2010	77	2,700	< 0.19	14	9.9	0.49	<0.04	1,100	6.2	2.3
	SP-10-13-083	8/12/2010	83	3,800	<0.19	23	15	0.94	0.3 J	1,600	6	1.7
SP-10-14	SP-10-14-005	8/17/2010	5	4,100	0.28 J	8,5	91.5			ALL AND DESCRIPTION OF THE PARTY OF THE PART		1,4
DI 10 11	SP-10-14-010	8/17/2010	10	7,400	0.64 J		10	0.32	<0.03	250	8.6	2.7
	SP-10-14-015	8/17/2010	15	4,800	1.5 j	18	27	0.55	0.059 J	3900	16	4.1
	SP-10-14-020	8/17/2010	20	8,000	0.43 J	12	200	0.29	<0.04	1,400	14	4.6
	SP-10-14-023	8/17/2010	23	3,300	0.46 J	18	32	0.72	<0.04	1,100	26	4.6
	SP-10-14-027	8/17/2010	27	1,400	0.48 J	6.0	13	0.28	<0.04	770	6.8	
	SP-10-14-030	8/17/2010	30	4,200		3.8	63	0.24 J	<0.12	19,000	1.5	1.2 J
	SDUP-081710	8/17/2010	30	5,200	0.25 J 0.35 J	9.5	12	0.33	<0.04	1,800	6.2	1.4
	SP-10-14-031	8/17/2010	31	3,000		11	9.8	0.37	<0.04	550	7.6	1.7
	SP-10-14-035	8/17/2010			<0.70	8.5	35	0.35 J	<0.13	6,300	4.8	0.95 J
	SP-10-14-040	8/17/2010	35	3,600	0.38 J	60	13	0.33 J	<0.07	1,700	8.4	4.9
	SP-10-14-044	8/17/2010	40	3,400	0.59 J	34	10	0.37	<0.05	1,100	7.6	4.3
	SP-10-14-044 SP-10-14-046	The state of the s	44	3,100	0,41 J	2.8	7.5	0.22	<0.04	440	5.9	2
	The second secon	8/17/2010	46	2,900	0.3 J	2.6	6.8	0,23	<0.04	760	5.8	1.6
	SP-10-14-055	8/17/2010	55	3,000	0.25 J	4.8	5,8	0.24	<0.04	490	6	1.4
	SDUP2-081710	8/17/2010	55	2,700	0.22 J	5	5.4	0.22 J	<0.04	540	5.6	1.3
	SP-10-14-060	8/17/2010	60	4,800	0.22 J	13	11	0.51	< 0.04	890	7.7	3
	SP-10-14-070	8/17/2010	70	4,400	<0.21	35	15	0,5	<0.04	1,100	7.2	2.1
	SP-10-14-075	8/17/2010	75	3,400	0.32 J	51	11	0.37	<0.04	760	6.7	2.2
	SP-10-14-080	8/17/2010	80	5,7()()	0.26 J	62	20	0.86	<().()3	1,300	15	27

TABLE 4
SOIL SAMPLING RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Boring Location	Sample 1D	Date	Depth	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	TOC %	TOC %	Total Solids %
SP-10-15	SP-10-15-001	8/12/2010	1	0.1 J	<22	< 0.24	6	13	0.034	0.027	99
	SP-10-15-004	8/12/2010	4	1,3	95	<0.25	12	83	1.50	1.81	96
	SP-10-15-005	8/12/2010	5	0.71	85	< 0.25	8.8	55	0.742	0.618	98
	SP-10-15-010	8/12/2010	10	12	100	< 0.30	6.2	53	1.24	1.53	83
	SP-10-15-015	8/12/2010	15	1,1	120	< 0.30	5.6	140	0.341	0.499	83 80
	SP-10-15-017	8/12/2010	17	0.32 J	100	<0.26	10	86	1.52	2.45	93
	SP-10-15-018	8/12/2010	18	1.2 J	940	<1.8	6.4	1000	9.38	7.54	65
	SP-10-15-020	8/12/2010	20	3	93	< 0.27	17	110	4.47	7.27	88
	SP-10-15-025	8/12/2010	25	0.8	210	<0.31	37		5.45	4.80	76
2 - 1	SDUP6-081210	8/12/2010	25	0.72	210	<0.32	30	380	4	-	76
	SP-10-15-028	8/12/2010	28	0:037 J	27 J	<0.29	8.5	11	0.473	0.358	80
	SP-10-15-030	8/12/2010	30	0.15 J	51 J	<0.31	5.6	13	0.188	0.038	78
	SDUP7-081210	8/12/2010	30	0.074 J	40 J	<0.30	4.6	11		-	80
	SP-10-15-035	8/12/2010	35	0.034 J	55 J	< 0.29	4.4	9.5	0.111	0.074	81
	SP-10-15-040	8/12/2010	40	0.033 J	41 J	< 0.31	4	9,7	0.056	0.026	77
	SP-10-15-055	8/12/2010	55	1.2	220	< 0.26	2.2	48	0.039	0.027	91
SP-10-16	SP-10-16-036	9/1/2010	36	0.098 J	25 J	< 0.26	16	29	0.037	0.036	92
	SDUP-081910	9.1.2010	36	0.098.1	-24	0.26	19	34	¥.	-	93
	SP-10-16-050	9/1/2010	50	<(),()3	<27	< 0.29	4.8	1.2	~0.010	0.018	84
	SP-10-16-053	9/1/2010	53	<0.03	36 J	< 0.26	4.8	13	0.02	0.014	88
	SP-10-16-060	9/1/2010	60	0.038 J	39 J	<0.27	8,5	18	0.015	0.016	87
	SP-10-16-065	9/1/2010	65	< 0.03	39 J	< 0.26	4.6	13	<0.010	0.014	90
	SDUP2-081910	9/1/2010	65	0.032 J	34 J	<0.27	5.5	13		9	90
	SP-10-16-070	9/1/2010	70	0.041 J	41 J	<0.26	9.7	18	0.022	0.021	93
	SP-10-16-080 SP-10-16-093	9/1/2010 9/1/2010	80 93	0.047 J 0.45	64 J 380	<0.27 <0.26	7.6 9.9	16 33	<0.01 0.04	0.013 0.045	85 90

Notes:

mg/kg means milligrams per kilograms

ug/kg means micrograms per kilograms

J means estimated results

B indicates that analyte was detected in the associated meth

< means less than

> means greater than

TOC - Total Organic Carbon

TABLE 5
Arsenic Comparison And Field Sampling Parameters
Shepley's Hill Landfill, Devens, MA

						Arsenic		J.	ron	Man	ganese			7			
Boring Location	Sample ID	Date	Time (Military Format)	Depth	Total (ug/L)	Dissolved (ug/L)	Field Kit (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Turbidity NTU	DO mg/L	pН	Temp Celcius	Spec Cond uS/cm	ORP mV
GP-10-01	GP-10-01-009	5/27/2010	10:00	9	0.48 J	0.3 J	<5	NA	827	NA.	21.6	10	5.34	6.25			
	GP-10-01-019	5/27/2010	10:35	19	4.61	0.32 J	<u><5</u>	NA	548	NA	49.7	90	2.61	6.35 5.99	10.08	265	107
	GDUP-052710	5/27/2010	10:35	19	NA	0.27 J	NA	NA NA	525	NA	45.5	20	.2.01		11.36	401	84.3
	GP-10-01-029	5/27/2010	11:20	29	11.4	0.31 J	5	NA	540	NA	196	230	A 205	The second secon	10-01-019	1 302 1	
	GP-10-01-039	5/27/2010	11:45	39	9.39	< 1.13	5	NA	1,860	NA	14,000	80	4.49 0.37	6.08	11.07	385	83.2
	GP-10-01-049	5/27/2010	12:30	49	7.39	< 1.13	5	NA	863	NA	6,450	65	0.37	6.00	11.81	671	62.7
	GP-10-01-059	5/27/2010	13:11	59	18.9	< 1.13	5	NA	2,150	NA	12,100	1000		6.38	12.46	218	36.1
	GP-10-01-069	5/27/2010	15:20	69	11,3	0.97 J	5	NA	4,600	NA.	3,570	170 200	0.23	6.25	11.68	307	15.5
× 1	GP-10-01-075	5/27/2010	16:30	75	2,35	0.89 J	. 5	NA	- 6,380	- NA	3,310	-33	0.35	6.39	12.36	395 469	-40.6 63.8
GP-10-02	GP-10-02-024			24													
GF-10-02	GP-10-02-034	6/7/2010	9:50	24	0.41 J	0.37 J	<5	NA	-1,130	NA	560	2.8	0.41	6.29	11.08	776	24.3
		6/7/2010	10:42	34	0.67	0.33 J	<5	NA	1,560	NA	1,440	13.4	0.29	6.39	11.48	818	14.6
	GDUP-060710	6/7/2010	10:42	34	NA	< 0.226	NA	NA.	1,520	NA	1,380	Dec 19		A CONTRACTOR OF THE PARTY OF TH	10-02-034		
	GP-10-02-044	6/7/2010	11:35	44	1.64	0.74 J	<5	NA	2,140	NA	2,060	41.1	0.28	6.46	11,27	777	11.3
	GP-10-02-054	6/7/2010	12:27	54	2.43	0.41 J	<5	NA	2,150	NA	2,200	85.7	0.29	6.5	12.09	757	2.6
	GP-10-02-064 GP-10-02-074	6/7/2010	13:08	64	5.87	0.41 J	<5	NA	3,500	NA	1,990	454	0.71	6.55	12.01	965	-14.
	The state of the s	6/7/2010	15:05	74	36.9	0.87 J	<5	NA	4,010	NA	2,910	Max	0.32	6.41	12.07	2550	-5.5
	GP-10-02-084	6/7/2010	18:12	84	24.8	4.64	*5	NA	19,600	NA	2,680	Max	0.31	6.57	12,39	2863	-6().
	GP-10-02-094	6.8-2010	9;25	94	127	0.61 J	_ 5	1.7	4.040	WV	3,100	Max	1/15	570	12.54	2831	-97_0
	GP-10-02-102	6:8/2010	(O:10)	102	84.6	8.68	5	NA	25,300	NA	1.270	Max	0.42	6.26	14.33	2345	~169,
GP-1(I-()3	GP-10-03-029	6/10/2010	08:25	29	0.89	0.5	<5	NA	582	NA	71	3.2	7.03	607	10.01	799	79.5
	GP-10-03-039	6/10/2010	9:20	39	6.79	0.61 J	<5	NA	704	NA	59.8	58	2.63	6.3	10.27	1916	29.8
	GDUP-061010	6/10/2010	9:20	39	NA	< 0.452	NA NA	NA.	790	NA	68.4			See GP-	10-03-039		1912
	GP-10-03-049	6/10/2010	10:00	49	14.6	< 0.565	<5	NA	1,580	NA	62.9	404	2	6.85	10.36	2563	14.5
	GP-10-03-059	6/10/2010	10:40	59	42.1	0.92 J	<5	NA	5,210	NA	254	Max	0.86	6.53	10.68	3212	-40.4
	GP-10-03-069	6/10/2010	11:20	69	8.74	3,47	<5	NA.	7,530	NA	633	68.9	0.52	6.72	10.79	3470	-78.6
	GDUP2-061010	6/10/2010	11:20	69	NA	3.85	NA	NA	8,210	NA	710			See GP-	10-03-069		
GP-10-04	GP-10-04-014	6/8/2010	12:40	14	2.26	0.18 J	<5	NA	1170	NA	210	18,7	8.32	6.17	13.34	26	50.1
	GP-10-04-024	6/8/2010	14:00	24	2.19	0.18 J	<5	NA	256	NA	58.1	4.65	6.22	6.07	12.88	34	73.1
	GDUP-060810	6/8/2010	14:00	24	NA	0.16 J	NA	NA	199	NA	63			The second secon	10-04-024	**	
	GP-10-04-034	6/8/2010	14:50	34	1.22	0.18 J	<5	NA	438	NA	84.4	42.1	3.47	5.73	11.22	44	58.5
	GP-10-04-044	6/8/2010	15:10	44	3.37	0.15 J	<5	NA	629	NA	86.6	29.3	1.52	5.13	11.57	224	114.4
	GP-10-04-054	6/8/2010	15:50	54	13.7	0.26 J	<5	NA	3,040	NA	811	784	0.42	5.4	11.29	644	21.9
	GP-10-04-064	6/8/2010	15:25	64	8.02	0.33 J	<5	NA	1,200	NA	510	245	0.57	5.4	11.58	856	30.8
	GP-10-04-074	6/8/2010	17:15	74	24,3	0.33 J	<5	NA	3,000	NA	433	Max	0.38	6.28	11.17	9.35	-91.0
	GP-10-04-084	6/8/2010	17:50	84	26.7	1.27	<5	NA	896	NA	91.4	Max	0.32	6.01	11.53	79.8	-40.3
	GP-10-04-094	6/8/2010	18:30	94	214	15.1	10-20	NA	3,630	NA	3,170	Max	0.29	6.33	12.05	244.5	-1.50
GP-10-05	GP-10-05-015	6/9/2010	9:50	15	2.08	0.31 J	<5	NA	262	NA	483	1.08	0.74				
500004720	GP-10-05-025	6/9/2010	10:25	25	1.02 J	0.58 J	<5	NA	1150	NA	11,200	3.54		6.32	12.82	109	102.9
	GDUP-060910	6/9/2010	10:25	25	NA NA	< 0.565	NA NA	NA,	572		The state of the s	3.34	1.77	5.85	12.55	242	73
	GP-10-05-035	6/9/2010	10:53	35	130	112	150	NA.	12,600	NA	11,200	17.0	7.45	· · · · · · · · · · · · · · · · · · ·	10-05-025	1 400 0	E.
	GP-10-05-045	6/9/2010	11:24	45	86.4	84.7	80-100	11.7		NA	4,610	17.8	1.45	6.21	13.25	214	-56
	G1=10-03-045	0/7/2010	11,24	73	80.4	04.7	80-100	NA	11,200	NA	2,320	36.9	2.24	6.17	2.76	255	-68

TABLE 5
Arsenic Comparison And Field Sampling Parameters
Shepley's Hill Landfill, Devens, MA

						Arsenic		li li	on	Man	ganese	1					
Boring Location	Sample ID	Date	Time (Military Format)	Depth	Total (ug/L)	Dissolved (ug/L)	Field Kit (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Turbidity NTU	DO mg/L	pH	Temp Celcius	Spec Cond uS/cm	ORP mV
GP-10-05A	GP-10-05A-029	6/9/2010	13:20	29	0.93	0.62 J	<5	NA	604	NA	63.8	1.52	992	6	16.24	1194	63.2
20 10 10 10 10	GP-10-05A-039	6/9/2010	14:05	39	13	0.35 J	<5	NA	2,310	NA	221	57.7	2.79	5,22	14.72	209	110
	GDUP2-060910	6/9/2010	14:05	39	NA	0.33.1	NA	NA	2,510	NA	237			See GP-1	0-05A-039	,	
	GP-10-05A-049	6/9/2010	14:55	49	4.86	1.12	≤5	NA	3,360	NA	203	39	4.87	5.81	14.29	172	76
	GP-10-05A-059	6/9/2010	15:57	59	3.48	0.39 J	<5	NA	1,840	NA	214	32.9	1.73	6.18	13.89	208	39
	GP-10-05A-069	6/9/2010	17:15	69	29.8	0.59	<5	NA	797	NA	466			Hand	Pumped	,,	
	GP-10-05A-079	6/9/2010	18:45	79	65	2.18	<5	NA	57.9	NA	114		No R	Readings, Silted	up and Clogged	Screen	
	GP-10-05A-089	6/9/2010	19:20	89	24.5	5.09	<5	NA	467	NA	70.3		No R	teadings, Silted	ip une Clogged	Screen	
2.0	GP-10-05A-099	.6/9/2010	19:40	-99	364	4.16	· <5	NA .	- 558	.NA	294			Readings, Silted	A COLUMN TO THE		50 . 1
1. 2. 2.	GP-10-05A-109	.6/9/2010	20:10	109	911	1.92	<5∙	NA	3,730	NA	1,320	~		Readings, Silted			
GP-10-06	GP-10-06-024	5/24/2010	11:50	24	17.2	10	10	NA	641	NA	112	50	0.19	5.57	9.16	26	127.5
	GP-10-06-034	5/24/2010	12:40	34	120	121	150-200	NA.	14400 J	NA	763	31	0.39	2.99	12.66	103	-12.3
	GP-10-06-044	5/24/2010	13;35	44	155	129	100	NA	34,400	NA	982	800	0.19	5.65	15.69	194	4.9
	GP-10-06-054	5/26/2010	8,50	54	67.5	42.9	5	NA	75,400	NA	3,000	Max	0.19	6.04	12.89	880	-119.6
	GDUP-052610	5/26/2010	8:50	54	NA	49,1	NA	NA	82,000	NA	3,250			See GP-	10-06-054		
	GP-10-06-064	5/26/2010	9:45	64	683	750	150	NA	122,000	NA	2,840	Max	0.14	6	11.63	827	-120
	GP-10-06-074	5/26/2010	11:15	74	2.390	2070	>500	NA	107,000	NA	2,470	Max	0.14	4.08	14.16	725	-124
	GP-10-06-079	5.26.2010	12500	79	2,6(0)	2540	500	- 84	72.200	NA	3,490	Max	0.18	4.34	14,89	669	~109
GP-10-06A	GP=10-06A-034	5/24/2010	15:15	34	0.59	0.37 J	.0	NA	66.4	NA	43.2	2.3	10,04	5.66	16,58	24	194,9
	GP-10-06A-044	5/24/2010	16:00	44	595	55.1	40	NA.	9,710	NA	2,370	140	1.54	5.79	14.66	76	27
	GP-10-06A-054	5/24/2010	17:40	54	1090	18	10	NA.	6,550	NA	6,920	900	1.47	5.8	14.1	166	8:1
	GP-10-06A-064	5/25/2010	9:50	64	170	36.7	20	NA	28,900	NA	2,780	Max	0.1	6.55	15.54	67	-134
	GDUP-052510	5/25/2010	9:50	64	NA	31.4	NA	NA	28,900	NA	2,830			See GP-1	0-06A-064		
	GP-10-06A-074	5/25/2010	11:10	74	134	58.6	30-40	NA	42,200	NA	2,460	Max	0.14	6.37	14.54	292	-115
	GP-10-06A-084	5/25/2010	13:00	84	186	106	60	NA	42,200	NA	3,050	Max	0.17	6.34	14.83	316	-115
	GP-10-06A-094	5/25/2010	14:40	94	382	< 1.13	5	NA	13,300	NA	17,900	Max	0.21	5.81	16.77	508	-119
	GP-10-06A-104	5/25/2010	16:30	104	405	< 1.13	0	NA	5,950	NA	6,530	900	0.17	6.24	17.17	608	-392
	GP-10-06A-110	5/25/2010	17:35	110	333	1.17.1	20	N.A.	8,640	NA	6,670	Max	0.11	6.14	14.66	603	-352
GP-10-07	GP-10-07-039	5/19/2010	14:00	39	1,240	1350	>500	96,400	105,000	2,430	2,660	20	1.15	6.49	12.54	757	-69.6
	GP-10-07-049	5/20/2010	13:45	49	283	58	5-10	251000	27800 J	9140 J	5330 J	NA	0.3	7.31	1.32	637	-242.2
	GPDUP-052010	5/20/2010	13:45	49	304	58.2	5-10	276000	26,800	9200	5,250			See GP-	10-07-049		
GP-10-08	GP-10-08-011	6/3/2010	12:10	1.1	2.08	0.64	<5	NA.	581	NA	70.7	12.7	6.97	6.78	11,73	189	20.1
	GDUP-060310	6/3/2010	12:10	11	NA	0.67	NA	NA	565	NA	69.7			See GP-	10-08-011		
	GP-10-08-021	6/3/2010	13;20	21	3.19	0.76	<5	NA	679	NA	199	17.5	4.68	6.5	10.46	337	31.4
	GP-10-08-031	6/3/2010	14:30	31	3.6	0.31 J	<5	NA	2,040	NA.	2,340	44.4	0.31	6.43	12.57	660	-3.9
	GP-10-08-041	6/3/2010	15:00	41	3.77	0.85 J	<5	NA.	2,090	NA	949	64,9	0.26	6.44	12.02	764	-8.6
	GP-10-08-051	6/3/2010	17:20	51	19.8	1.06	<5	NA.	3,300	NA	777	321	0.24	6.56	11.6	9.64	-42
	GDUP2-060310	6/3/2010	17:20	51	NA	0.92 J	NA.	NA	3,180	NA	769			See GP-	10-08-051		
	GP-10-08-061	6/3/2010	18:05	61	2.07	0.73 J	<5	NA	4,710	NA	1,060	37,4	0.9	6.54	15	244	-4.3

TABLE 5
Arsenic Comparison And Field Sampling Parameters
Shepley's Hill Landfill, Devens, MA

						Arsenic		h	ron	Man	ganese						
Boring			Time		Total	Dissolved	Field Kit	Total	Dissolved	Total	Dissolved	Turbidity	DO	pH	Temp	Spec Cond	ORP
Location	Sample ID	Date	(Military Format)	Depth	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	NTU	mg/L	644	Celcius	uS/cm	mV
GP-10-09	GP-10-09-021	5/28/2010	9:15	21	0.45 J	0.27 J	<5	NA	88.3	NA	34,6	1.13	10.34	6.82	11.93	62	97.1
	GP-10-09-031	5/28/2010	10:00	.31	183	0.15 J	<5	NA	685	NA	82.2	596	6.35	6.11	12.82	223	71.6
	GDUP-052810	5/28/2010	10:00	31	NA	0.171	NA	NA	778	NA	102	1,00			10-09-031	1	/1.0
	GP-10-09-041	6/1/2010	11:30	41	12.6	0.25 J	<5	NA	853	NA	66	178	4.97	6.05	1 13.05	1 706 1	50.4
	GP-10-09-051	6/1/2010	13:00	51	13	0.27 J	<5	NA	1,760	NA	138	333	2.15	6.24	12.56	714	161
	GDUP-060110	6/1/2010	13:00	51	NA	0.23 J	NA	NA	1,580	NA	136	200	2,12		10-09-051	1 714 1	101
	GP-10-09-061	6/1/2010	14:20	61	6.8	0.940	<5	NA	2,200	NA	362	87.1	1.04	6.62	13.19	401	-56.3
	GP-10-09-071	6/1/2010	16:45	71	23.3	0.680	<5	NA	2,070	NA	349	82.2	1.19	6.66	12.92		
00400	GP-10-09-081	6/1/2010	17:50	- 81	15.5	0.850	<5	NA	3,430	NA ·	382	93.2	1.18	6.66	13.3	486 428	-58.0 -57.3
GP-10-10	GP-10-10-011	6/2/2010	14:45	- 11	· 0.34 J	0.27 J	<5	NA	332	NA '							
G. 10.10	GP-10-10-021	6/2/2010	16:00	21	1.59	0.27 J	<5	NA NA	728	NA NA	34.5	2.5	10,93	6.73	10,89	- 130	56.2
	GDUP-060210	6/2/2010	16:00	21	NA	0.22 J	NA NA	NA NA	732	NA NA	56.5 58.2	11.8	7.45	6.17	11.49	375	53,9
	GP-10-10-031	6/2/2010	16:30	31	1,29 J	< 0.565	<5					10.24	- 652		10-10-021	, , , , , , ,	
	GP-10-10-041	6/2/2010	17:15	41	1.86 J	1.13 J		NA	818	NA	4,370	10.34	0.56	6.1	12.46	561	43.5
	GP-10-10-051	6/2/2010	18:00	51	100,000	U PARTE SE	<5	NA	2,720	NA	10,800	26.3	0.29	6,19	13.26	509	-2.8
	GP-10-10-061	6/2/2010			4,4 J	2.47.1	×5	NA	3,690	NA	14,300	26	0.26	6.32	12.59	594	-35.2
	GP-10-10-071	6/3/2010	19:00	61 71	11.1	< 2,82	<5	NA	5,230	NA	30,700	90.6	0.32	6.34	12.02	87.6	-44.3
		7.275.7.63	10:00	Af	13.7	< 1.13	<5	NA	4,880	NA.	15.500	121	0.36	6.41	12.72	737	-85
GP-1()-11	GP-10-11-039	8:3/2010	14:10	39	263	264	-80	67200	66400	2120	NA	14,5	0.44	5.61	16.26	302	56.3
	GP-10-11-049	8/3/2010	15:15	49	688	375	7()	164000	49300	5240	NA.	5373	0.27	6.2	18.09	278	-43.
	DUP3-080310	8/3/2010	15:15	49	641	396	N.A.	149000	52200	5260	NA.	NA	NA	NA	NA	NA	NA
	GP-10-11-059	8/3/2010	19:00	55	760	236	150	148000	28500	7700	5580	203	0.78	6.3	24.09	354	-46.2
	GP-10-11-064	8/4/2010	11:30	64	230	19.8	< 5	180000	3440	7160	1100 J	Max	0.11	7.74	20.99	439	-150.4
GP-10-12	GP-10-12-044	8/5/2010	13:05	44	4320	3880	> 500	122000	92700	7100	5070	202	0.42				
01 19 12	GP-10-12-054	8/5/2010	15:00	54	NA NA	2850	> 500		83700	7180	5860	203	0,43	5.97	18.23	385	17.6
	GP-10-12-065	8/9/2010	8:20	65	NA NA	38.9	30	NA NA	74800	NA	5200	Max	0.16	6.11	21.93	368	-17.)
	01-10-12-003	8/9/2010	0.20	03	INA	30.9	30	NA	46600	NA	4400	Max	0.13	6.79	12.95	543	-103
GP-10-13	GP-10-13-039	8/9/2010	14:45	39	176	124	30	148000	99500	1950	1380	1409	0.18	5.36	21.58	740	101,2
	GP-10-13-049	8/9/2010	17:00	49	NA.	12.2	< 5	NA	7840	NA	6700	144	0.48	6.17	21.68	858	45.5
	GP-10-13-059	8/10/2010	9:05	59	120	102	100	87100	74500	682	592	565	0.16	6.4	18.34	800	-33.3
	GP-10-13-069	8/10/2010	11:15	69	NA	1060	> 500	NA	79800	NA	3630	151	0.81	6.09	21.32	545	
	GP-10-13-079	8/10/2010	13:10	79	NA	123	20	NA	5580	NA	218	128	8.68	6.37	21.32	338	-2.1 15.9
		2002										157	5.44	0.07	21.67	338	13.9
GP-10-14	GP-10-14-039	8/16/2010	09:50	39	39,1	14.4	5	22800	18700	783	670 J	49,9	0.36	5.54	15.86	510	50.8
	GP-10-14-049	8/16/2010	11:20	49	774	772	250	66000	66900	2420	2540	22,5	0.41	5.86	15.99	474	14.9
	DUP-081610	8/16/2010	11:20	49	792	762	NA	69800	64200	2510	2440	NA	NA	NA	NA	NA	NA
	GP-10-14-059	8/16/2010	13:00	59	NA.	2400	> 500	NA	88200	NA	6800	1129	0.17	5.86	16.31	553	-0.9
	GP-10-14-069	8/16/2010	14:35	69	5260	5110	> 500	95400	85400	3700	3540	111	0.18	5,82	17.71	444	-8.7
	GP-10-14-079	8/17/2010	07:45	79	17300	15100	> 500	80300	71800	5850	5540	38.8	0.31	6.18	14.71	395	34.2
GP-10-15	GP-10-15-039	8/11/2010	9:30	39	NA	1740	~ enn	N/ X	101006	6.8	2210	25.55	8.63				
CH-10-13	GP-10-15-049	8/11/2010				1740	> 5()()	NA 176000	101000	NA TOSOO	3410	25.52	0.25	5.81	17.99	543	-6.4
	GP-10-15-059	8/11/2010	11:25	49	17200	16600	70	126000	119000	10500	10500	41.3	0.45	6	20.68	589	-40.5
	GP-10-13-039	6/11/2010	14:45	59	NA	278	80	NA	300	NA	466	207	5.11	8.3	21.89	313	181.1

TABLE 5
Arsenic Comparison And Field Sampling Parameters
Shepley's Hill Landfill, Devens, MA

						Arsenic		lı	on	Man	ganese						
Boring Location	Sample ID	Date	Time (Military Format)	Depth	Total (ug/L)	Dissolved (ug/L)	Field Kit (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Turbidity NTU	DO mg/L	рН	Temp Celcius	Spec Cond uS/cm	ORP mV
GP-10-16	GP-10-16-024	8/17/2010	16:15	24	170	4.81	5	56700	323	2500	182	1235	3.06	6.27	12.58	107	101,1
	DUP-081710	8/17/2010	16:15	24	164	3.87	100	59500	349	2650	197	NA	NA	NA	NA	NA	NA
	GP-10-16-034	8/18/2010	07:55	34	333.1	1.97	5	145000	138	5080	580	609	12.11	8.25	13.91	350	78.3
	GP-10-16-054	8/18/2010	11:20	54	19.9	1.89	< 5	8900	277	180	84	101.4	12.62	7.43	16.85	398	27.4
	Dup-081810	8/18/2010	11:20	54	26	2.05	NA	11400	300	200	86	NA.	NA	NA	NA	NA NA	NA
	GP-10-16-064	8/18/2010	13:40	64	NA	445	100	NA	44700	NA	777	21.5	2.45	6.57	14.73	492	-78.8
	GP-10-16-074	8/19/2010	07:45	74	248 J	216 J	100	75900	64200	1420 J	1330 J	122	0.66	6.94	11.26	720	-140.
	GP-10-16-084	8/19/2010	09:40	84	256	248	100	20600	17200	3120	2920	16.6	0,9	6.95	14.92	837	-104.
(-W) (DUP-081910 -	-8/19/2010	- 09:40	84	260	249	NA.	. 21500-	: 17400	3130	2990	NA	NA -	NA	NA	NA ·	"NA
7	GP-10-16-094	8/19/2010	12:35	. 94	19.3	3.44	<5	17500	625	620	368	- 180	5.06	6,9	17.45	382	-21.4
GP-10-17	GP-10-17-009	8/2/2010	11:40	9	0.58	0.46 J	< 5	1800 J	1620	NA	NA	20,1	4.91	1.65	14.07	1036	178.2
	GP-10-17-019	8/2/2010	12;20	19	0.78	0.39 J	< 5	1870	1800	NA	NA	NA.	NA	NA	NA	NA	NA
	DUP-080210	8/2/2010	12:20	19	0.66	0.49 J	NA	1840	1870	NA	NA	NA	NA	NA	NA	NA	NA
	GP-10-17-029	8/2/2010	16:00	29	0.78	0.25 J	< 5	1810	1240	NA	NA	6.06	2.17	6.01	13.72	747	63.4
	GP-10-17-039	8/2/2010	16:45	39	1950	1860	500	65200	60700	NA	NA	37.9	0.26	6.83	13.9	542	-138.
	GP-10-17-049	8/2/2010	17:30	49	17.7	20.8	5	10100	5210	NA	NA	65.6	1.4	6.52	14.8	670	-28.2
	GP-10-17-056	8/2/2010	17:45	56	36,4	5,38	5	30600	6100	NA	NA	660	0.24	6.73	14.68	666	-84.3
GP-10-18	GP-10-18-007	8/2/2010	18:34	7	0.93	0.73	NA	1390	1360	NA	NA	18.3	0.27	6.06	17.64	729	58.7
	GP-10-18-017	8/3/2010	8:25	17	1.87 J	1.26 J	<.5	1190	857	NA	NA	10.6	0.44	6.14	12.87	673	55.8
	GP-10-18-027	8/3/2010	9;00	27	117	107	80	35400	32000	NA	NA	199	0.44	6.3	13.55	681	-45.1
	DUP-080310	8/3/2010	9:00	27	118	107		34600	32800	NA	NA	NA	NA	NA	NA	NA.	NA
	GP-10-18-037	8/3/2010	11:00	37	274	262	60	21300	18800	NA	NA	84.7	0.44	6.4	13.61	628	-45.5
	GP-10-18-047	8/3/2010	12:10	47	373	390	80	35200	32300	NA	NA	127	0.45	6.54	14.6	809	-80.7
GP-10-19	GP-10-19-009	8/3/2010	14:35	9	0.57	0.38 J	< 5	1040	908	NA	NA	1.1	3,55	5,85	17.73	174	98.5
	DUP2-080310	8/3/2010	14:35	9	0.53	0.35 J	NA	1030	982	NA	NA	NA	NA	NA	NA	NA	NA
	GP-10-19-019	8/3/2010	15:15	19	3.07	0.6	< 5	3680	831	NA	NA	141	2.19	6.01	14.88	759	904
	GP-10-19-029	8/3/2010	16:05	29	886	810	100	89800	73300	NA	NA	66.6	0.53	6.64	13.88	682	-111
	GP-10-19-039	8/3/2010	17:00	39	690	677	100	65600	58800	NA	NA	36.6	1.65	6.6	15.59	736	-77.7
	GP-10-19-046	8/3/2010	18:15	46	23.3	3.92	5	14400	4280	NA	NA	< 1000	1.88	650	14.58	737	-44,1
GP-10-20	GP-10-20-009	8/4/2010	9:30	9	1,6	0.4 J	< 5	2000	1260	NA	NA	12.5	6.46	6.22	16.7	262	60.4
	GP-10-20-019	8/4/2010	10:10	19	2.94	1.02	< 5	2910	1500	989	920	17.2	0.67	6.09	14.35	609	50.6
	DUP-080410	8/4/2010	10:10	19	3.11	0.066	NA	2630	1630	949	933	NA	NA	NA	NA	NA.	NA
	GP-10-20-029	8/4/2010	11:00	29	220	235	40	53000	56800	NA	NA	139	0.33	6.7	13.44	521	-92.8
	GP-10-20-039	8/4/2010	13:00	39	446	429	50	16800	13300	NA	NA	91.6	0.37	6.49	13.51	649	-38.8

TABLE 5
Arsenic Comparison And Field Sampling Parameters
Shepley's Hill Landfill, Devens, MA

GP-10-21 C C C C C C C C C C C C C C C C C C C	Sample 1D GP-10-21-011 GP-10-21-021 DUP2-080410 GP-10-21-031 GP-10-21-041 GP-10-21-051 GP-10-21-060 GP-10-22-011 GP-10-22-01 GP-10-22-041 GP-10-22-051 GP-10-22-061 GP-10-23-017 DUP-080510	8/4/2010 8/4/2010 8/4/2010 8/4/2010 8/4/2010 8/4/2010 8/4/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010	Time (Military Format) 15:05 15:45 15:45 16:30 17:00 18:05 19:00 14:40 15:00 15:50 16:30 17:30 18:30	Depth 11 21 21 31 41 51 60 11 ** 21 31 41 60	Total (ug/L) 3,98 1,71 1 48 5,05 322 18,7 145	Dissolved (ug/L) 0.31 J 0.62 J 0.63 J 3.64 349 12.3 146	Field Kit (ug/L) < 5 < 5 NA < 5 60 < 5 40	Total (ug/L) 2550 1730 1550 3100 42500 11900 21200	Dissolved (ug/L) 501 984 1030 1840 43700 6320 15300	Total (ug/L) NA 1050 1020 NA NA	ganese Dissolved (ug/L) NA 1020 J 1080 NA NA	Turbidity NTU 54.1 134 NA 34.7 83.7 315	DO mg/L 6.33 1.43 NA 1.54 0.42	6.14 6.07 NA 6.35 6.66	Temp Celcius 15.57 14.29 NA 13.78 14.14	Spec Cond uS/cm 182 728 NA 503 627	ORP mV 101,5 97,5 NA 44,9 -80,2
GP-10-23 C	GP-10-21-021 DUP2-080410 GP-10-21-031 GP-10-21-041 GP-10-21-051 GP-10-21-060 GP-10-22-011 GP-10-22-021 GP-10-22-031 GP-10-22-041 GP-10-22-051 GP-10-22-061 GP-10-23-017 DUP-080510	8/4/2010 8/4/2010 8/4/2010 8/4/2010 8/4/2010 8/4/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010	15:45 15:45 16:30 17:00 18:05 19:00 14:40 15:00 15:50 16:30 17:30	21 21 31 41 51 60 	1.71 1.48 5.05 322 18.7 145 0.51 1.71	0.62 J 0.63 J 3.64 349 12.3 146	< 5 < 5 NA < 5 60 	2550 1730 1550 3100 42500 11900	501 984 1030 1840 43700 6320	NA 1050 1020 NA NA NA	NA 1020 J 1080 NA NA	54.1 134 NA 34.7 83.7	6.33 1.43 NA 1.54 0.42	6.07 NA 6.35 6.66	15.57 14.29 NA 13.78 14.14	182 728 NA 503 627	101.5 97.5 NA 44.9 -80.2
GP-10-23 C	DUP2-080410 GP-10-21-031 GP-10-21-041 GP-10-21-051 GP-10-21-060 GP-10-22-011 GP-10-22-021 GP-10-22-041 GP-10-22-051 GP-10-22-061 GP-10-23-017 DUP-080510	8/4/2010 8/4/2010 8/4/2010 8/4/2010 8/4/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010	15:45 16:30 17:00 18:05 19:00 14:40 15:00 15:50 16:30 17:30	21 31 41 51 60 11 * 21 31 41	1.71 1.48 5.05 322 18.7 145 0.51 1.71	0.62 J 0.63 J 3.64 349 12.3 146	< 5 NA < 5 60 < 5 40	1730 1550 3100 42500 11900	984 1030 1840 43700 6320	1050 1020 NA NA NA	1020 J 1080 NA NA	134 NA 34.7 83.7	1.43 NA 1.54 0.42	6.07 NA 6.35 6.66	14.29 NA 13.78 14.14	728 NA 503 627	97.5 NA 44.9 -80.2
GP-10-23 C	GP-10-21-031 GP-10-21-041 GP-10-21-051 GP-10-21-060 GP-10-22-011 GP-10-22-031 GP-10-22-041 GP-10-22-051 GP-10-22-061 GP-10-23-017 DUP-080510	8/4/2010 8/4/2010 8/4/2010 8/4/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010	15:45 16:30 17:00 18:05 19:00 14:40 15:00 15:50 16:30 17:30	21 31 41 51 60 11 * 21 31 41	1 48 5.05 322 18.7 145 0.51 1.71	0.63 J 3.64 349 12.3 146	NA < 5 60 < 5 40	1550 3100 42500 11900	1030 1840 43700 6320	NA NA NA	1080 NA NA	NA 34.7 83.7	NA 1.54 0.42	NΛ 6.35 6.66	NA 13.78 14.14	NA 503 627	NA 44.9 -80.2
GP-10-23 CGP-10-23 CGP-10-	GP-10-21-041 GP-10-21-051 GP-10-21-060 GP-10-22-011 GP-10-22-021 GP-10-22-031 GP-10-22-041 GP-10-22-051 GP-10-22-061 GP-10-23-017 DUP-080510	8/4/2010 8/4/2010 8/4/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010	17:00 18:05 19:00 14:40 15:00 15:50 16:30 17:30	31 41 51 60 - 11 * 21 31 41	322 18.7 145 0.51 1.71	3.64 349 12.3 146	< 5 60 < 5 40	3100 42500 11900	1840 43700 6320	NA NA NA	NA NA	34.7 83.7	1.54 0.42	6.35	13.78	503 627	44.9 -80.2
GP-10-23 CGP-10-23 CGP-10-	GP-10-21-041 GP-10-21-051 GP-10-21-060 GP-10-22-011 GP-10-22-021 GP-10-22-031 GP-10-22-041 GP-10-22-051 GP-10-22-061 GP-10-23-017 DUP-080510	8/4/2010 8/4/2010 8/4/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010	17:00 18:05 19:00 14:40 15:00 15:50 16:30 17:30	41 51 60 11 * 21 31 41	322 18.7 145 0.51 1.71	349 12.3 146	60 	42500 11900	43700 6320	NA NA	NA	83.7	0.42	6.66	14.14	627	-80.2
GP-10-23 CGP-10-23 CGP-10-	GP-10-21-060 GP-10-22-011 GP-10-22-021 GP-10-22-031 GP-10-22-041 GP-10-22-061 GP-10-23-017 DUP-080510	8/4/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010	18:05 19:00 14:40 15:00 15:50 16:30 17:30	51 60 11 * 21 31 41	18.7 145 0.51 1.71	12,3 146 0.37 J	< <u>5</u> 40	11900	6320	NA	-				_		
GP-10-23 CGP-10-23 CGP-10-	GP-10-21-060 GP-10-22-011 GP-10-22-021 GP-10-22-031 GP-10-22-041 GP-10-22-061 GP-10-23-017 DUP-080510	8/4/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010	19:00 14:40 15:00 15:50 16:30 17:30	60 11 * 21 31 41	0.51 1.71	146 0.37 J	40		Company of the Compan	-	INA		0.32	0.30			
GP-10-23 C	GP-10-22-021 GP-10-22-041 GP-10-22-051 GP-10-22-061 GP-10-23-017 DUP-080510	8/10/2010 8/10/2010 8/10/2010 8/10/2010 8/10/2010	15:00° 15:50 16:30 17:30	* 21 31 41	1.71		<5			NA	NA	<1000	0.72	6.68	16.8	277 828	-64.2
GP-10-23 C	GP-10-22-031 GP-10-22-041 GP-10-22-051 GP-10-22-061 GP-10-23-017 DUP-080510	8/10/2010 8/10/2010 8/10/2010 8/10/2010	15:50 16:30 17:30	31 41	1.71			844	753	- NA	NA*	6.27	7:43	5.92	14:7	200	
GP-10-23 C	GP-10-22-041 GP-10-22-051 GP-10-22-061 GP-10-23-017 DUP-080510	8/10/2010 8/10/2010 8/10/2010	16:30 17:30	31 41			< 5	2310	1120	" NA	NA NA	45	0.63 -	AND DESCRIPTION OF THE PARTY OF	Company to an included the last of the las	306	115.8
GP-10-23 C	GP-10-22-051 GP-10-22-061 GP-10-23-017 DUP-080510	8/10/2010 8/10/2010	16:30 17:30	41	70.30	0.75 J	< 5	3240	1780	NA	NA NA	54	0.03	6.19	13.42	440	75.5
GP-10-23 C	GP-10-22-061 GP-10-23-017 DUP-080510	8/10/2010 8/10/2010	17:30		15.8	14.5	< 5	35300	36100	NA	NA NA	85.4	0.72	the same of the sa	13.22	766	68.1
GP-10-23 C	GP-10-23-017 DUP-080510	8/10/2010		51	5.02	< 1.13	< 5	7580	5010	NA.	NA NA	83.5		6.38	13.3	434	-32.9
1	DUP-080510	015100110		61	6.56	3.53	< 5	6750	4490	NA	NA NA	29.9	0.88	6.55	13.57	585 75	-20,9 -51.
C	10 May 10 10 May	8/5/2010	11:00	17	0.52	0.38 J	< 5	1110	1040	23	21.1	5.37	4.03	5.99	14.46	200	72.5
U.B. Hillard	VID 10 22 025	8/5/2010	11:00	17	1.45	1.4	NA	1180	1070	23.9	21.8	NA	NA.	NA	NA	380	76.2
C	CIP-10-23-027	8.5.2010	1645	27	2.86	0.63	3	2170	701	189	172	38.5	3.35	6.08	13.1	NA luxa	NA
	GP-10-23-037	8/5/2010	12:25	3.7	5.38	0.28 J	- 5	5400	1890	NA	NA	58.4	3.41	5.96	13.75	1060	94.3
C	GP-10-23-047	8/5/2010	14:20	47	610	666	> 5()()	78500	78400	NA	NA	374	1.34	6.6	15.76	961	90).0
0	GP-10-23-057	8/5/2010	16:05	57	1060	1070	500	72200	68400	3660	3730	254	0.86	6.65	14.51	490	-95.
E	DUP2-080510	8/5/2010	16:05		1160	1100	NA	82000	70000	4050	3820	NA NA	NA NA	NA NA	NA NA	743 NA	-100. NA
GP-10-24 C	GP-10-24-015	8/9/2010	15:44	15	2.06	0.94 J	< 5	928	758	28.1	24.9	37.4	3,1	5.94	14.28	762	116.3
1	DUP-080910	8/9/2010	15;44	15	1.52	0.8 J	NA	886	765	26.7	30.6	NA	NA.	NA	NA NA	NA NA	NA.
(GP-10-24-025	8/9/2010	16:30	25	1.61	0.39 J	< 5	2260	1180	NA	NA	44.9	5.21	6.05	13.23	710	104.3
	GP-10-24-035	8/9/2010	17:05	35	5.03	0.89 J	< 5	5550	2630	NA	NA	45.3	1.12	5,94	14.08	9.14	92.4
C	GP-10-24-045	8/9/2010	17:45	45	303	310	125	99000	100000	NA	NA	98.6	1.07	6.54	13.61	1332	-71.5
C	GP-10-24-055	8/9/2010	18:30	55	629	615	250	91100	81500	NA	NA	< 1000	0.77	6.61	13.41	914	-95.3
GP-10-25 C	GP-10-25-025	8/10/2010	10:00	25	44	0.4 J	×5	35700	1770 J	NA	NA	889	3.57	6,03	13.07	506	69.3
C	GP-10-25-035	8/10/2010	10:45	35	10.9	0.58 J	< 5	15600	2250	108	618	223	1,69	5.94	13.1	745	69.3
	DUP-081010	8/10/2010	10:45	35	10.9	1.18	NA	15300	2320	772	658	NA	NA	NA	NA	NA	NA.
	GP-10-25-045	8/10/2010	11:50	45	37.3	35.1	5	76700	71000	4540	4550	137	1.13	6.56	12.86	6.22	-74.6
D	DUP2-081010	8/10/2010	11:50	45	38	34.9	NA	76700	69000	4460	4430	NA	NA	NA	NA NA	NA.	NA.
	GP-10-26-011	8/11/2010	9:20	11	0.6	0.18 J	< 5	854	716 J	67.1	59.8	9.11	6.78	5.59	14.08	123	139.
	GP-10-26-021	8/11/2010	10:20	21	2.07	0.39 J	< 5	2090	1170	129	103	33.7	3,01	6.05	12.5	275	84.4
The second secon	DUP-081110	8/11/2010	10:20	21	1.72	0.65	NA	1800	1140	120	103	NA	NA.	NA.	NA NA	NA NA	NA
	GP-10-26-031	8/11/2010	10:35	31	2.86	0.54	< 5	4180	1350	NA	NA	84.8	2.67	6.04	11.74	652	84.5
0	GP-10-26-041	8/11/2010	11:05	41	4	0.45 J	< 5	6290	1940	NA	NA	207	0.72	6.05	12,11	20500	
C	GP-10-26-051	8/11/2010	12:15	51	4.86 J	< 1.13	< 5	7180	3140	NA	NA	76.1	1.02	6.27	12.65	631 485	61.5
	GP-10-26-061	8/11/2010	13:40	61	6.48	< 1.13	< 5	11900	3840	NA	NA	376	1.49	6.45	12.74		36.3
C	GP-10-26-071	8/11/2010	14:10	71	3.58 J	1.96 J	< 5	6430	3310	NA	NA	< 1000	0.95	6.58	13.96	741 860	-6.8 -36.1

TABLE 5 Arsenic Comparison And Field Sampling Parameters Shepley's Hill Landfill, Devens, MA

					Arsenic		I	on	Man	ganese						
Sample ID	Date	Time (Military Format)	Depth	Total (ug/L)	Dissolved (ug/L)	Field Kit (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Turbidity NTU	DO mg/L	рН	Temp Celcius	Spec Cond uS/cm	ORP mV
GP-10-27-025	8/11/2010	16:05	25	2.77	1.03	< 5	1640	773	56.2	44.9	21.6	1.33	6.46	14.8	332	47.7
DUP2-081110	8/11/2010	16:05	25	1.11	0.38 J	NA	1510	804	53	45.5	NA	NA	NA	NA.	NA	NA
GP-10-27-035	8/11/2010	17:00	35	24.7	0.78 J	< 5	15000	1100	NA	NA	101.1	1.07	5.87	13.44	1022	76.8
GP-10-27-045	8/11/2010	17:25	45	199	200	70	88800	83800	NA	NA	339	0.71	6.58	13.58	647	-93.6
GP-10-27-055	8/11/2010	17:50	55	288	328	70	84100	91300	NA	NA	294	0.95	6.65	13.28	644	-108.8
GP-10-27-065	8/11/2010	18:45	65	1100	1040	> 500	73400	61300	NA	NA	<1000	1.1	6.66	13.37	766	-93.3
	GP-10-27-025 DUP2-081110 GP-10-27-035 GP-10-27-045 GP-10-27-055	GP-10-27-025 8/11/2010 DUP2-081110 8/11/2010 GP-10-27-035 8/11/2010 GP-10-27-045 8/11/2010 GP-10-27-055 8/11/2010	Sample ID Date (Military Format) GP-10-27-025 8/11/2010 16:05 DUP2-081110 8/11/2010 16:05 GP-10-27-035 8/11/2010 17:00 GP-10-27-045 8/11/2010 17:25 GP-10-27-055 8/11/2010 17:50	Sample ID Date (Military Format) Depth GP-10-27-025 8/11/2010 16:05 25 DUP2-081110 8/11/2010 16:05 25 GP-10-27-035 8/11/2010 17:00 35 GP-10-27-045 8/11/2010 17:25 45 GP-10-27-055 8/11/2010 17:50 55	Sample ID Date (Military Format) Depth (ug/L) GP-10-27-025 8/11/2010 16:05 25 2.77 DUP2-081110 8/11/2010 16:05 25 1.11 GP-10-27-035 8/11/2010 17:00 35 24-7 GP-10-27-045 8/11/2010 17:25 45 199 GP-10-27-055 8/11/2010 17:50 55 288	Sample ID Date Time (Military Format) Depth (ug/L) Total (ug/L) Dissolved (ug/L) GP-10-27-025 8/11/2010 16:05 25 2.77 1.03 DUP2-081110 8/11/2010 16:05 25 1.11 0.38 J GP-10-27-035 8/11/2010 17:00 35 24.7 0.78 J GP-10-27-045 8/11/2010 17:25 45 199 200 GP-10-27-055 8/11/2010 17:50 55 288 328	Sample ID Date Time (Military Format) Depth Total (ug/L) Dissolved (ug/L) Field Kit (ug/L) GP-10-27-025 8/11/2010 16:05 25 2.77 1.03 < 5	Sample ID Date Time (Military Format) Depth Total (ug/L) Dissolved (ug/L) Field Kit (ug/L) Total (ug/L) GP-10-27-025 8/11/2010 16:05 25 2.77 1.03 < 5	Sample ID Date Time (Military Format) Depth Total (ug/L) Dissolved (ug/L) Field Kit (ug/L) Total (ug/L) Dissolved (ug/L) GP-10-27-025 8/11/2010 16:05 25 2.77 1.03 <5	Sample ID Date Time (Military Format) Depth Total (ug/L) Dissolved (ug/L) Field Kit (ug/L) Total (ug/L) Dissolved (ug/L) Total (ug/L) Total (ug/L) Dissolved (ug/L) Total (ug/L) <	Sample ID Date Time (Military Format) Depth Total (ug/L) Dissolved (ug/L) Field Kit (ug/L) Total (ug/L) Dissolved (ug/L) Total (ug/L) Dissolved (ug/L) Dissolved (ug/L) <td>Sample ID Date Time (Military Format) Depth Total (ug/L) Dissolved (ug/L) Field Kit (ug/L) Total (ug/L) Dissolved (ug/L) Total (ug/L) Dissolved (ug/L) Total (ug/L) Dissolved (ug/L) Turbidity (ug/L) NTU GP-10-27-025 8/11/2010 16:05 25 2.77 1.03 <5</td> 1640 773 56.2 44.9 21.6 DUP2-081110 8/11/2010 16:05 25 1.11 0.38 J NA 1510 804 53 45.5 NA GP-10-27-035 8/11/2010 17:00 35 24.7 0.78 J <5	Sample ID Date Time (Military Format) Depth Total (ug/L) Dissolved (ug/L) Field Kit (ug/L) Total (ug/L) Dissolved (ug/L) Total (ug/L) Dissolved (ug/L) Total (ug/L) Dissolved (ug/L) Turbidity (ug/L) NTU GP-10-27-025 8/11/2010 16:05 25 2.77 1.03 <5	Sample ID Date Time (Military Format) Depth Total (ug/L) Dissolved (ug/L) Field Kit (ug/L) Total (ug/L) Dissolved (ug/L) Total (ug/L)	Time Depth Date Military Format Depth Depth Military Format Depth De	Sample ID Date Military Format) Depth Depth (ug/L) (Sample ID Date Children Depth Depth Cug/L) Cug/L)

NA - Not Applicable

mg/l - miligrams per liter

J means estimated results

B indicates that analyte was detected in the associated method blank

DO - Dissolved Oxygen

Notes NA - Not Applicable

ug/L is micrograms per liter

ORP - Oxygen Reduction Potential

mg/l - miligrams per liter

Teble 6 Water Level Calibration Targets and Residuals Shepley's Hill Landfill Focused Feasibility Study Supplemental Hydrogeologic Assessment

		Observed	Computed	
Manitarina Wall	Lover	Groundwater Elevation	Groundwater Elevation	Residual
Monitoring Well N-3 P-1	Layer 3	217.29	217.44	-0.15
N-3 P-2	1	216.67	217.34	-0.67
N-5_P-2	1	220.49	218.91	1.58
N-6_P-1	3	223.42	222.60	0.82
N-7_P-1 N-7_P-2	3	226.71 227.04	226.06 226.00	0.65 1.04
SHL-10	1	218.87	218.81	0.06
SHL-11	1	218.14	218.51	-0.37
SHL-13	1	215.37	215.07	0.30
SHL-15	2	243.55	242.52	1.03
SHL-19 SHL-20	1	219.05 218.26	219,11 218.38	-0.06 -0.12
SHL-21	1	215,37	215.75	-0.38
SHL-22	3	214.28	214.39	-0.11
SHL-23	3	215,58	215.73	-0.15
SHL-24	3	225.02	224.27	0.75
SHL-3 SHL-4	1	218.65 217.99	219.69 218.79	-1.04 -0.80
SHL-5	1	215.54	214.61	0.93
SHL-8D	2	214.84	214.70	0.14
SHL-8S	2	214.91	214.66	0.25
SHL-9	1	214.47	214.48	-0.01
SHM-05-39A	1	211.84	212.35	-0.51
SHM-05-39B SHM-05-40X	2	210.65 211.03	212.40 212.16	-1.75 -1.13
SHM-05-41A	1	213,93	213.63	0.30
SHM-05-41B	3	213.91	213.63	0.28
SHM-05-41C	3	214.00	213.68	0.32
SHM-05-42A	1	213.66	213.44	0.22
SHM-05-42B SHM-93-10C	3	213.69 219.51	213.46 218.77	0.23
SHM-93-18B	2	220.03	220.83	-0.80
SHM-93-22C	3	214.35	214.40	-0.05
SHM-96-22B	2	213.96	214.36	-0.40
SHM-96-5B	2	214.88	214.60	0.28
SHM-96-5C SHM-99-31A	1	214.57 213.00	214.64	0.50
SHM-99-31B	2	212.23	212.50	-0.28
SHM-99-31C	2	212.26	212.51	-0.25
SHM-99-32X	2	212.90	212.76	0.14
SHP-01-36X	1	217.75	216.85	0.90
SHP-01-37X	1	217.17	217.24	-0.07
SHP-01-38A SHP-01-38B	2	217.95 218.09	218.50 218.44	0.55 -0.35
SHP-05-43	1	217.11	216.36	0.75
SHP-05-44	1	217.40	217.17	0.23
SHP-05-45A	1	214.62	215.34	-0.72
SHP-05-45B	2	214.66	215.29	-0.63
SHP-05-46A SHP-05-46B	1 2	215.23 214.62	215.40	-0.17 -0.74
SHP-99-34A	1	213.27	212.96	0.31
SHP-99-34B	2	213.04	213.06	-0.02
SHP-99-35X	3	222.47	223.13	-0.66
SHP-07-03C	1	205.85	207.58	-1.73
SHP-07-03E SHP-07-03B	1	205.28	207.37	-2.09 -1.56
SHP-07-01BS	1	210.24	208.97	1.27
SHP-07-01BD	1	207.74	208.97	-1.23
SHP-07-01CS	1	208.52	208.64	-0.12
SHP-07-01CD	1	207.73	208.64	-0.91 -1.58
SHP-07-01DS SHP-07-01DD	1	206.73	208.31	-1.58
SHP-07-01_22-27	1	206.71	208.33	-1.62
SHP-07-01_15-20	1	206.80	208.35	-1.55
SHW-07-05	3	209.88	212.14	-2.26
SHW-07-03	1	208.72	211.43	-2.71
RSK12 RSK15	1	218.35	219.19	-0.84 -0.36
RSK19	1	217.84	218.20	-0.36
RSK24	1	219.29	219.58	-0.29
RSK25	1	218.80	219.03	-0.23
RSK26	1	218.69	219.39	-0.70
RSK27 RSK28	1	218.80 218.60	219.26	-0.46 -0.39
RSK29		218.40	218.89	-0.49
RSK30	1	218.18	218.69	-0.51
RSK33	1	217.89	218.13	-0.24
RSK34 RSK35	1	217.89 217.67	217.91 217.76	-0.02 -0.09
RSK37	1	217.66	217.44	0.22
RSK48	1	217.84	219.19	-1.35
RSK49	1	218.02	218.41	-0.39
RSK7	111	217.62	217.58	0.04
			sidual Mean es. Std. Dev.	-0.29 0.81
			of Squares	61.29
		Abs	. Res. Mean	0.64
			lin. Residual	-2.71
		Ma	ax. Residual	1.58
			Range Std/Range	38.27 0.02
			3-1	-1-2.17

Table 7 Waste Occurrence in Shepley's Hill Landfill Borings

						Co	mpound	and Con	centratio	ons (mg/	kg)				
		Ars	enic	Cadr	nium	Cop	per	Chro	mium	Nic	kel	Le	ad	Zi	nc
Boring	Waste	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
SHM-10-11	Paper/plastic/ash/wood (5 to 23 ft bgs)	13	10	220	0.05	33	7.3	42	9.1	16	6	110	10	66	18
SHM-10-12	Ash and sand mixed w/ash 5 to 9 ft bgs	13	12	< 0.04	< 0.03	260	7.3	18	9.8	72	9.3	510	8.5	210	16
SHM-10-13	Ash and Sand 23 to 27 ft bgs	31	7	3.5	< 0.04	33	5.3	52	3.9	15	5.5	53	5.3	13,000	20
SHM-10-13	Peat 27 to 35 ft bgs	7	0.8	< (),03	71	0.8	48	4.6	23	4	13	2,5	34	9.5
SHM-10-14	Waste (paper/minor ash) and waste sand mix 10 to 23 ft bgs	18	6	< (0.04	18	5.9	26	6.8	23	8.8	180	6.6	160	36
SHM-10-14	Peat and sand/peat 30 to 44 ft bgs	60	2.8	< ()	0.04	7.3	4.5	8.4	4.8	15	4.2	6.6	1.6	27	12
SHM-10-15	Waste (ash/paper/plastic /wood) 5 to 28 ft bgs	25	6.2	0.27	0.04	310	3.7	69	8.4	75	6.3	1,200	5.3	1,000	11

Note: The values in yellow represent enrichment with respect to normal soil ranges mg/kg - means milligrams per kilogram bgs - below ground surface ft - feet

ATTACHMENTS

ATTACHMENTS

Attachment A

Attachment A

Locat		mber:	SHL - I AC001 Fort De Ayer, M	vens 4A		Type Steel Size 3.25" Flamm	3 25" 60" Hammer Fall NA lbs NA"					
+		1.3	mple II	iforma		De .	-	Start Date: 6/15/2010 Completion Date: 6/16/2010	Surfac	e El	evation:	209,88 - NGVD 29' 206.3+/- NGVD 29'
Depth	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Water Detected	Sample Description	Stratum Change (ft.)	ses	Test Bo	Standpipe ring/ Monitoring Wel Construction
.5		60/40	0-5	NA	NA -		L	opsoil (21-inches) ight brown, dry to wet, MEDIUM TO COARSE SAND	TOPSOIL			Standpipe is 3' ags Cement 0-2'
4							(,	well sorted)				
6	S-2	60/26	5-10	NA	NA		Y	irey; saturated, FINE TO MEDIUM SAND.	SAND			
8					F		C	orange, COARSE SAND, some (angular) gravel				
10					-5		A	is Field Testing Results		ì		
-	S-3	60.22	10-15	ŊA.	NA			ight brown, saturated, COARSE SAND to FINE TO HEDITALS WID (gradational lavering, well sorted)				
14												= 0 Seggdong (to PV) II Geedf Pr
5	s-1	(i) 20	15-20-	NI	NA			nglu brown, sittomied, COARSE SAND to FINETO DEDICM SAND (gradarional layering well sorted)	SAND			
18												
20	200	-2			<5×			s Field Testing Results) 19	q		
22	5-5	(a) 28	31/25	12.	51		10	rown, samuated, CUARSI, SAND, some (angular) gravel				Grana 2-55 5*
74									SAND & GRAATI			
lotes	1	Direct	Push grou	ndwater r	mufile sa	193breu	cond	lucted on 5 27 10.		Ke	H	enem
		Ciround	water pro							1000		Orll Comings Naive Stills Sentimite Circui Sand Gerecii Greet

m	1	905B S	reign (outh M ield, Ma	ain Str	cet	Inc	Boring/Well ID: SHM-10-01		Sheet 3 of 3
roj	ect	umber:	Fort De Ayer, N	ort Dev vens			Drilling Co.: Geosearch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Fype Steel Size 3 257 Hamme NA Ibi	Geogradie Spuor 607 ner Fall
-			mple Ir	ıformat			Start Date: 6/15/2010 Completion Date: 6/16/2010	M 45 50 5	g Elevation: 209.88 - NGVD 20
	9	c. (in.)	(Ft.)		Test	Type	Completion Date: 6/16/2010		c Elevation: 206 3+/- NGVD 29 lhead Type: Standpipe
Depth	Sample ID	Pen/Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Completion Date: 6/16/2010 Sample Description		Test Boring/ Monitoring W
52	S-11	60/14	50-55	NA	NA		Brown, saturated, COARSE SAND, some (rounded) gra	SAND & GRAVEL	1 5° Schedule 40 PVC
54									Grunt 2'-55 5'
56	S-12	60/32	55-60	NA	NA.		Brown, saturated, COARSE SAND, some medium sand, fine sand and silt	trace SAND	Bentonite 55.5'-57.5'
68					Š		As Field Testing Results		
Fa.	S-13	15,649	60-65	NA	N.A.		Light brown, saturated, MEDIUALTO COARSE SAND baces of time sand and adt	with	
4									SAU (8. Sam)
ti-	8-14	60.28	65-70	ŠA	1.0		hight brown, samualed, FINE TO MEDIUM SAND, son gravel, dense (1)(1).	ie.	
8								GLACIAL.	1 5" Schedule At PA C Well screen - 0 01" slot ou 5"-70 5"
o -	- Car	-	102				As Field Testing Results Limited recovery SAND & GRAVEL, dense, rock in tip smoothing spoon (1101)	rof	
2							SAMPI ER REFUSAL A TO S'		CASING RUPUSAL w 70.50
4									
otes			Push grou dwater pro				As Field Testing Results conducted on 5-27-10		Cernont Cernont Dull Cunnes Native Soils He Benomie Ginui Sond Sord Risei

76 D ---

Clier Proje	et:	905B S Mansfi		lain Str assachu Eort Dev	cet setts	Inc.		Boring/Well ID: SHM-10-02 Drilling Co.; Geosearch Drill Rig: Geoprobe 6610DT	Cus Type Steel		Sheet 3	2 of 4 Sampler Geoptobe Spoon		
	eet Ni tion:		AC001 Fort De Ayer, Mample 1	evens MA	tion			Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman Start Date: 6/30/2010	Size 3.25 Ham NA	lbs	levation:	66" Fall NA" 222.86 - NGVD 29'		
j	10				Field As Testing	Type	-	Completion Date: 7/1/2010	Surfa	Surface Elevation: 220.0+/- NGVD 29 Wellhead Type: Standpipe				
Depth	Sample 1D	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"		Sample Type	_	Sample Description	Stratum Change (ft.	Notes.	Test Bo	ring/ Monitoring Wel Construction		
26	S-6	60/26	25-30	NA	NA	4	_	Gray, saturated, FINE SAND, some medium to coarse sand, little (angular) rock fragments (gradational layering of sands with depth)		1				
28		-			-					1				
-0														
30	S-7	60/22	30-35	NA .	NA.			Gray, saturated, MEDIUM TO COARSE SAND, some						
	S.T.	00.22	34:33		100		- 1	(angular) gravel, trace fine sand						
32						+	1		SAND	1		1 5" Schedule 40 PVC R		
34					×3			As Field Testing Results		1		0-53!		
	S-8	onu e)	35.10	NA	38.1			Grave saturated, MEDIUM BECOARSUS AND, some						
4								tangulat) garsel, trace (me sand						
40	Self	60.22	40-15	SA	Pé A			Gray, saturated All DHALLO COARSE SAND, some						
42								(angular) gravel, trace fine sand				Grant 2'48'		
										1				
44					<5	+	-	As, Field Testing Results		2		1.414		
46	S-1/1	60.29	45-50	NA.	ÑĀ		- 1	Gray saturated MEDIPALTO COARSES AND, some tangular Leravel, trace fine sand	SAND			•.		
48						+	-							
30										1		Bonioni, 19540		
Notes				ACCES OF A SECURITY				nducted on 6.7-10 & 6.8-10 As = 5 ng.1, a ² (62)		K		ement Onli Cumnes Nauve Sorts Jentomite Gront Kand Serecu User		

Table 7 Waste Occurrence in Shepley's Hill Landfill Borings

					150	Co	mpound	and Con	centratio	ons (mg/	kg)				
	7	Ars	enic	Cadr	nium	Cop	per	Chro	mium	Nic	kel	Le	ad	Zi	nc
Boring	Waste	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
SHM-10-11	Paper/plastic/ash/wood (5 to 23 ft bgs)	12	6	220	0.04	, 33	7	42	6	16	6	110	6	48	13
SHM-10-12	Ash and sand mixed w/ash 5 to 9 ft bgs	13	12	0.03	0.02	260	7	18	9.8	72	9.3	510	8.5	210	16
SHM-10-13	Ash and Sand 23 to 27 ft bgs	31	7	3,5	0.03	33	5.3	52	4	15	5.5	53	5.3	13,000	20
SHM-10-13	Peat 27 to 35 ft bgs	5.9	0.8	< 0	.03	71	0.8	48	4.6	23	4	13	2.5	34	9.5
SHM-10-14	Waste (paper/minor ash) and waste sand mix 10 to 23 ft bgs	18	3.8	< 0	.04	11	5.9	16	6.8	23	8.5	180	6.6	160	36
SHM-10-14	Peat and sand/peat 30 to 44 ft bgs	60	2.8	< 0	.04	7.3	4.6	8.4	5.9	15	4.2	6.6	1.6	27	11
SHM-10-15	Waste (ash/paper/plastic /wood) 5 to 28 ft bgs	25	6.2	0.26	0.04	310	3.7	69	10	75	6.3	1,200	12	1,000	53

The values in yellow represent enrichment with respect to normal soil ranges mg/kg – means milligrams per kilogram bgs – below ground surface

ft - feet

ATTACHMENTS

Attachment A

11	Sovereign Consulting In 905B South Main Street Mansfield, Massachusetts ent: USACE pject: SHL - Fort Devens							Boring/Well ID: SHM-10-01			Sheet 1	of 3
roje roje	ect:	umber	SHL - I AC001 Fort De Ayer, N	ort Dev evens 1A				Drilling Co.: Geosearch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	() pe Steel Size 3-25" Hamm NA II	er is		Sampler Geoprobe Spoon (a)* Fall NA*
r	0		mple I	погща		ype	tected	Start Date: 6/15/2010 Completion Date: 6/16/2010	Surface	Ele	evation; evation; d Type;	209.88 - NGVD 29' 206.3+/- NGVD 29'
	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Water Detected	3 - 10 d - 10 mg		Notes		Standpipe ring/ Monitoring Well
t	S-1	60/40	0+5	NA NA	NA NA	S	=	Sample Description Topsoil (21-inches)	Change (ft.)	Z.	-	Construction Standpipe is 3' ags
			eron.	re-ri-e	105545			Light brown, dry to wet, MEDIUM TO COARSE SAND (well sorted)				Cement 0-2'
	S-2	60/26	5-10	NA	NA		<u>*</u>	Grey, saturated, FINE TO MEDIUM SAND				
		8-7	-	-				Orange, COARSE SAND, some (angular) gravel	SAND			
					<5			As Field Testing Results		ı		
	S-3	60/22	11415	NA	NA			Light brown, saturated, COARSE SAND to FINE TO MEDR M SAND (guidanneal favoring, well stated)				i – Salantoir 12 PNF Bir
	S-1	r0.50	[5-20)	NA .	NY			Light brown, saturated, COARSE SAND to FINE 1() MEDIUM SAND (gradational layering, well sorted)	SAND			i Saludois (2019) Ele Guni V
-		- 2			~5 A			As Field Testing Results				
	S-5	nu 28	20+25	2.7	7.7			Brown samenest. COARSC SAND some (mgafan) gravel				Gront 25-35-5"
									SAND & GRAVII			
1							-					
cs			Push grou Iwater pro					Inducted on 5-27-10/		Ke	0 B	H gnent rill Cuttings Native Soils enfonte Giant and siven

	isticia, Ma	ssachu	eet setts		Boring/Well ID: SHM-10-01		Shee	1 2 of 3
t: t Numb on:	USACI SHL - I er: AC001 Fort De Ayer, N	Fort Dev evens AA	ens		Drilling Co: Geosearch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	NAIL	icr is	Sample) Geoprobe Spoon 60" Fall NA"
(in.)		ntormat		ype	Start Date: 6/15/2010 Completion Date: 6/16/2010	Surface	Elevation	206.3+/- NGVD 29'
		Blow/6"		Sample T Water De	Sample Description			Boring/ Monitoring Well Construction
6 60/	26 .25-30	NA	NA		Brown, saturated, COARSE SAND			
4								
3			5		As Field Testing Results		,	
7 60/	30-35	NA	NA		Brown, saturated, COARSE SAND, some (rounded) gravel			
						SAND & GRAVEL		
8 (0)	21 (35010)	NA	27		Brown sammed UUARSESAND some (munded) gavel			
-			5.		As Field Testing Results			1 Cochedule in PV1. Rise
AF Edit	22 40-45	NA	N.A.		Brus)), samuated, CCORSE SAND, some (rounded) gravel			
			(*)+(Chang 2'-55 5'
jn vo	29 45-50	NA.	NA		Brown saturated COARSESAND some (rounded) grave)	SAND & GRAVEL		
				-,				
			8.		Ze Lidge Usamor Results			
					inducted on 5-27-10		Key	Cement Drill Cintings Native Soils Bentonite Gront Sand Serien Riser
	Numb on: (u) 39//ud 6 6 60/2 7 60/2 7 60/2 8 60/2 10 00 11	Number: AC001 m: Fort Do Ayer, N Sample II (ii) 99/198 6 60/26 25-30 7 60/22 30-35 8 60/21 35-400 9 60/29 45-50 (i) 9 45-50 (i) 1) Stratification in 10 (i) (i) (i) (i) (i) (ii) (ii) (iii) (iii) (iii) (iii) (iii) (iiii) (iiii) (iiiiiiii	Number: AC901 Series Ayer, MA Sample Informate Ayer, MA Sample Informate Ayer, MA A	Number: AC001 Somple Information Ayer, MA Sample Information Ayer, MA Sample Information Ayer, MA Sample Information Ayer, MA Ayer, Ma	Number: AC001 Sample Information Ayer, MA Sample Information	Number: AC001 Fort Devens Ayer, MA Sample Information Sample Information Sample Information Start Date: 6/15/2010 Completion Date: 6/16/2010 Sample Description Start Date: 6/16/2010 Sample Description Sample Description Sample Description Sample Description Brown, saturated, COARSE SAND As Field Testing Results Brown, saturated, COARSE SAND, some frounded) gravel As Field Testing Results Brown, saturated, COARSE SAND, some frounded) gravel As Field Testing Results Brown, saturated, COARSE SAND, some frounded) gravel Brown, saturated, COARSE SAND, some frounded) gravel Brown, saturated, COARSE SAND, some frounded) gravel As Field Testing Results Brown, saturated, COARSE SAND, some frounded) gravel As Field Testing Results Brown, saturated, COARSE SAND, some frounded) gravel As Field Testing Results If Direct Public grandwater profile sample performanced of 5 27 10 2) Grandwater profile sample refused at 75' 3) As Field Testing Results If Direct Public grandwater profile sample performanced of 5 27 10 2) Grandwater profile sample refused at 75' 3) As Field Testing Results	Number: AC001 Fort Devens Ayer, MA Sample Information Sample In	Drill Method: Dree Push Some 135 Hammer Start Date: Rodney Raddy Start Date: Start D

П	Sovereign Consulting In 905B South Main Street Mansfield, Massachusetts Tient: USACE Project: SIII, - Fort Devens							Boring/Well ID: SHM-10-01			Sheet :	3 of 3
Pro Pro	ject:		SHL +1 AC001 Fort De Ayer, N	ort Devens				Drilling Co.: Geosearch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Fype Steel Size 3.25 Hamin NA II	ier		Sampler Geogradia Spaan 60° Fall NA°
		S	ample li	nforma		_	_	Start Date: 6/15/2010	77. 70.		evation:	209.88 - NGVD 29'
	0	(in.)	Ft.)		Field As Testing	ype	Water Detected	Completion Date: 6/16/2010	The second secon		evation: d Type:	206.3+/- NGVD 29' Standpipe
÷	Sample ID	Pea./Rec. (in.)	Interval (Ft.)	9/^	A As	Sample Type	er De		Stratum			ring/ Monitoring Well
Depth			Inte	Blow/6"		Sam	Wat	Sample Description	Change (ft.)	Notes	100, 20	Construction
52	S-11	60/34	50-55	NA	NY			Brown, saturated, COARSE SAND, some (rounded) gravel	SAND & GRAVEL			1 5" Schedule 40 PVC Rise; 0-60 5"
54												Grout 2555 51
56	S-12	60/32	55-60	NA	NA			Brown, saturated, COARSE SAND, some medium sand, trace fine sand and still.				Bentamte 55 5'-57 5'
2.2	-			1100					SAND		THE P	TT.
58					5			As Field Testing Results.		j		
60	S-13	60.31	60-65	NA.	NA.	-	-	Light brown, saturated, MEDIGM TO COARSE SAND, with			-	3
10								favers of fine sand and sift				"Ylengin = set
64												
bti	S-14	00 28	65-70	NA	NA			Light brown, saturated, FINE TO MEDIUM SAND, some gravel, dense, (Till)		1		
68									GLACIAL HLL			1 5" Schedule 10 PVC Well screen = 0.01" slot 60 5-70 5'
		-		SAL	5			As Field Testing Results ·	V	1		
70					101	H	H	Limited recovery. SAND & GRAVEL, dense, rock in tip of sampling speam. (131)	9.4 8			
7.2								SAMPLER REFA/SAL/@ 70.5'			121	ISING REFUSAL 'n 70.5'
74		-		-		H	H					
Solo	100	Ly Descrit	Duch arm	uduata	5			As Field Testing Results inducted on 5.27-10	4	1.5		
South			dvaler pro		2 - Decolor Service	7.7	-	inducted on 5.27 (i)		Ke		'ement Jull Cuttings Native Soils Jeathmite Chout and wiecen
Rem	narks	1) Stratil times and 2) Field : were coll 3) Sampl	I under co As testing ected at the c is design	nditions s values rep le same di lated as e	nated. Fl present ar apth inter other "C"	uetua seme val ai for co	con and su	undaries between soil types and the transition may be gradual is of groundwater may occur due to factors other than those presi- centrations in ug U collected using Industrial Test Systems Arse abuntited to a haboratory for resting. Please see tables for laborato- poste or "G" for a discrete gab sample cable—NR. No Recovery—byst below ground surface ags=abo	ent at the time measi me Quick Test Kos na data	aren	e completed	aide

m	905B S	cign (outh M eld, Ma	ain Str	eet	Inc.	Boring/Well ID: SHM-10-02		Sheet 1	of 4
ient oject: oject Ni eation:	umbert	USACT SHL - I ACDOT Fort De Ayer, N	i fort Dev evens AA	ens		Drilling Co.: Geoscarch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCUnspector: Danielle Eastman	Type Steel Size 3.25** Damme NA th	er	Sampler Geoprobe Spoon 60° Full NA"
1	Sa	mple I	nformat			Start Date: 6/30/2010	10000000	Elevation:	222,86 - NGVD 29'
4	m.	(F)		Field As Testing	Sample Type Water Detected	Completion Date: 7/1/2010	1000000000	Elevation:	22().()+/- NGVD 29'
Sample 1D	Pen./Rec. (in.)	Interval (Ft.)	,.9/	1.5	Sample Type Water Detector			head Type:	Standpipe
Sampl	Pen./	Inter	Blow/6"	Field	Samy	Sample Description	Change (ft.)	S Lest Bo	ring/ Monitoring Well Construction
S-1	60/19	0-5	N.A	NA		Tops(it) (4-inches)	TOPSOIL		Standpipe is 3' ags
-	-					Brown, dry, FINE TO MEDIUM SAND, httle (angular) rock fragments			Cement 0-2'
.S-2	60/13	5-10	NA .	NA		Brown, dry. FINE TO MEDILIM SAND, Intle (angular) rock fragments	SAND		
S-3	Nage #	10x13	NA.	NN		Brown, dre FISE TO MEDIÚ M SAND, hijle (angular) rock fragnicitis			n ranovski u Producev
:\$4	nti šie	15-20	×1	NA.		to: TS*Hnown, dry MEDICM SAND some tangular (grave) frace fine sand	SASD		
						15": 18" Light Brown, dry TINE SAND, trace self 18"- 49' Brown, moist, FINE SAND AND SILT	FINE SAND & SILT		
	4.1	-				49%-56d Grey, saturated, SILT, trace Clay	162,224		
10.0	* 9	-81				1000 000 100			
34.3	mr-ş	2023	* 1	N.Y		Light (nove), sometical ALLIII, MERTLE (CAST, SASD), some famigular) gravel. (Falsy fine sand	NAND		Grout 2*-48*
				3		As Field Testing Results			
	21 Ground 3) 41 51 6)	fwater pro	ittle samp	ler retusa	l a 102	industed on 6.7 10 & 6.8 10 As = 5 og 1, ii = 102°. Undaries between sail types and the transition may be gradual. A		S S R	omen rill Curings Native Soils entonice Grout and ereen

Project: SHL-Fort Devens Project Number: AC001 Location: Fort Devens Ayer, MA Sample Information (a) (a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c		Drilling Co.: Geosearch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Casin Type Steel Size 3.25" Hammin NA lb	er is		Sampler Geoprobe Spoon 60° Fall NA°							
	le 1D					e Type	Detected	Start Date: 6/30/2010 Completion Date: 7/1/2010	Casing Elevation: 222.86 - NOVD 29 Surface Elevation: 220.0+/- NGVD 29 Wellhead Type: Standpipe				
Depth				Blaw/6"		Samp	Water	Sample Description	Stratum Change (ft.)	Notes	Test E	Boring/ Monitoring Wel Construction	
26	S-6	60/26	25-30	NA	NA			Gray, saturated, FINE SAND, some medium to coarse sand, furtle (angular) rock fragments, (gradational layering of sands					
28								with depth)					
30	S-7	(0/22	30-35	N.									
32	3-1	60/22	30-35	NA	NA.			Gray, saturated, MEDIUM TO COARSE SAND, some (angular) gravel, trace fine sand					
34					-75			As Field Testing Results	SAND	200		1 5" Schedule 40 PVC R 0-53"	
Z1.	5-8	60.50	75- h)	NA	NA			Gury Saumared, MUDIEM 100 CUSRSF SASD, some (angulan) gravel, trace fine sand					
Jn 42	Sa)	Mr 22	30:45	XI	NA -			Oray, salurated, All DIUM FOX OARSE SAND, some (augular) gravel, trace fine sand				Grant 2:48°	
										1			
44			-		<5	+		As Field Testing Results		. 1		4 5 - 5	
40	S+10	60 <u>2</u> 4	45-50	NA	NA	2		Grav saturated MEDRAL TO COARSE SAND some (angular) gravel, frace time sand	SAND	×			
18													
300												Bounding 18250	
Rem		2) Groun 3) 4) 5) 6) 1) Stant	dwater pro ication but I under co	tile samp	der refusal	inate	ozi hor	nducted on 6.7 (B) & 6.8-40. As = 5.0g J; α : 10.2° undarres between soil types and the transition may be gradual sof groundwarer may used thin to factors other than those pres			completents were		

m	905	vereigi B South nsfield, l	Main St	reet	Inc.	Boring/Well ID: SHM-10-02			Sheet 3	of4
Client: Project: Project Locatio	Numb	er: AC0 Fort Ayer	- Fort De 01 Devens . MA			Drilling Co.: Geosearch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Easing Type Steel Size 3/25" Hammi	ier		Sampler Geoprobe Spoon (60" Fall NA"
H			Inform		. 7	Start Date: 6/30/2010 Completion Date: 7/1/2010	Casing Surface		evation: evation:	222.86 - NGVD 29' 220.0+/- NGVD 29'
2		Interval (Ft.)	.9	Field As Testing	Sample Type		The second secon	hea	d Type:	Standpipe ing/ Monitoring Well
Depth Samule ID	_		Blow/6"	_	Samp		Change (ft.)	Nofes	rest Bor	Construction
S-1	H 60	12 50-5	5 NA	NA		Gray, saturated, MEDROT TO COARSE SAND, some (angular) gravel, trace fine sand			4	#2 Morie Sand 50'-63'
54				-3		As Field Testing Results)		
S-	12 60	/23 55-6	0 NA	NA.		Gray, saturated, MEDIUM TO COARSE SAND, some (angular) gravel, trace fine sand	SAND			
8					\mathbb{H}	Bottom - Light brossn to gray, saturated, FINE SAND				1 5" Schedule 40 PVC
0		1								Well screen - 0 01" slot 53'-63'
s.	13 60	⊇er :e0-é	5 N.A	N.Y		Light brown to gray. Wet AIFOR AI TO COARSE SAND, some (angular) grayel trace time sand.				
4	L			5	Ш	As Field Testing Results		1		
80	14 (4)	23 6547	6 84	XX		Light brown in gray, saturated FINE SAND, some mechanisand, trace coarse sand	SAND		CA	SING RIFUS AL - \(\tilde{a}\) \(\tilde{b}\) 5°
8										
1						Market toxin a new and an artist to				Table 1
0	(5 m)	12 7007	3 84	1.6		Light brown, saturated TPM, SASD, trace medicur sand and silt.				
4		+			H		SAND			
4	+	+		5	Н	As field (esting Results		Ĭ,		
mes	2) (i 3) 4) 5) 6)	noundwater	profile san	ipler refus	al n 102	oundaries between soil types and the transition may be gradual		Ke	Di Bo Sa Sa Ri	

īī	TT	905B S	reign (South M ield, Ma	lain Str	eet	Inc.		Boring/Well ID: SHM-10-02		H	Sheet 4 of 4
2.3.4	ect.	umber:	USACI SHL - I AC001 Fort Do Ayer, M	Fort Dev evens AA				Drilling Co ; Geosearch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Type Steel Size 128* Homm NA Ib	e)	Sampler Geoprobe Spoon 60" Fill N:A"
	9	194	ample I			lype	etected	Start Date: 6/30/2010 Completion Date: 7/1/2010	Surface	Ele	evation: 222.86 - NGVD 29' evation: 220.0+/- NGVD 29' d Type: Standpipe
Depth	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Water Detected	Sample Description	Stratum Change (ft.)		Test Boring/ Monitoring Well Construction
76	S-16	36/13	75-78	NA	NV			Light brown, saturated, FINE SAND, trace medium sand and sift	SAND		
78								Grey moist, FINE SAND, (angular) rock fragments, rock in up of spoon			
80								SAMPLER REFUSAL (# 78)			
82											
84		H			•5			As Field Testing Results		1	
24											
1961											
92											
94					<5			As Field Testing Results	3.00	1	
96	33.	Seem	10°	ity.is.	P.			wateries is a second			Orn Wide C
98											
jan										3	
Note		21 Groun 31 41 51 61	idwater più	ofile samp	der refusi	al <i>ir</i> 10	02'	nducted on 6 7 10 & 6 8 10 As - 5 ug L it 102'		Ke	Drill Cumngs Native Soils FFF Bentonite Grant Sand Serien Riser
Rema	nks	2) Field were coll 31 Sampl	d under co As testing lected at the e is design	nditions s values rep ie same de iaied as ei	tated Floresent are opth interather "C"	uctuati sente c val and for cor	rons cond d su mpu	undates between soil types and the transition may be gradual s of groundwater may occur due to factors other than those pres- centrations in ug 1, collected using Industrial Test Systems Also- brittled to a laboratory for testing. Please see tables for laborat- site or "G" for a discrete grab sample. **ME-No Recovery—bas-bellow mound surface aus-abs.	ent at the time meast eue Quick Test Kus ory data	nem	ents were made

1 = 1 1 + 1 + 1

m	m	905B S	outh N	Consu Iain Str assachu	cet	Inc.	Boring/Well ID: SHM-10-03		She	eet I of 3
roj	int. ject: ject N ation		AC001 Fort De Ayer, I	Fort Dev evens MA			Drilling Co.: Geoscarch Drill Rig: Geoprobe 66 (0DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Fastman	Type Steel Size 3/25" Hanto NA/II	ner	Sampler Geoprahe Spacin čdi" Fall NA"
-				nforma		ered	Start Date: 6/23/2010 Completion Date: 6/23/2010	100000000000000000000000000000000000000	g Elevati e Elevati	
Depth	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type Water Detected		Stratum	head Ty	st Boring/ Monitoring Well
1	5-1	60/32	()-5	NA.	NA.	1 =	Sample Description Topsoil	Change (ft.)	Z.	Construction Standpipe is 3' ags
	000			o con			Brown, dry, MEDIUM TO COUARSE SAND, some gravel.			Cement 0-2
	. S-2	60:25	5-10	NA	NA		Light brown, dry_MEDIUM TO COARSE SAND, some Gravet (large angular rock fragments in spoon)	SAND		
n a	S-3	60 60	10.15	NA.	NA NA		Eight brown dry MEDII M TO COARSE SAND, some (sub- angular) wavel mice-fine sand (en alational layering large angular tryl, fragments)	SASD		Sylectride J. Polit Re-
	S-4	(4) (4)	15-20	:NA	81		99-247 Brown moist AHDII ALSAND mace coase sand with (sub-rounded) grave)			
8							22"-60" Brown, inoist COARSE SAND, and (sub-angular)			
1	4	- 19	0.0			1	5 600 1 00 1 00	SAND		
	45.	4 14					the Annual Control of the section	Se 40		
0	5-3	nu 28	26-25	15%	NA		Blown wet COARSLSAND some (sulf-angular) gravel			Gross 2'-5's 5'
-										
										810
пе	S	2) Choun 4) 4) 5)		undwater j ofile samp			inducted on 6-10-10		Kev	Cement Driff Cuttings Native Soils He Bentantic Grout Sand Screen
em	oorks	5) (i) 1) Stratel times and 2) Field were coll	l under co As testing ceted at ti	inditions s volues rep he same de	tated 151 present ar apth inter	uctuanor senie cor val and s	nundaries between soil types and the transition may be gradual. s of groundwater may accur due to factors office than those presi- centrations in ng 1, coffected using bidustrial Test Systems Arse alumited to a faboration for testing. Please see tables for laborati- osite or "G" fin a discrete grab sample.	m at the time measi me Quick Test Kits	rements w	Sereen Riser pleted at ere made

Con.

Pro	ject:		USACE SHL - I AC001 Fort De Ayer, M	Fort Dev evens 4A				Drilling Co.: Geoscarch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Type Size	Casing Steel 3 25" Dammy NA Ib	er			Sampler Geoprobe Spoon 60" Fall NA"
		Si	imple Ir	iformat				Start Date: 6/23/2010		Casing				231.88 - NGVD 29'
_	Sample ID	Pen./Rec. (in.)	Interval (FL)	9/	Field As Testing	Sample Type	Water Detected	Completion Date: 6/23/2010			head	Туре	27	229.6+/- NGVD 29' Standpipe
Depth	Sam	Pen./	Inter	Blow/6"	Field	Sami	N ate	Sample Description	Cha	ratum nge (ft.)	Vote	Test		ng/ Monitoring Wel Construction
	S-6	60:25	25-30	NA.	NA		Ĺ	Brown, wet, COARSE SAND, some (sub-angular) gravel	Cita	inge (ii.)		HH	III	Construction
26						Н	T					\blacksquare		
	-	-	- 1		-									
28									S	AND			H	
					*5			As Field Testing Results					Щ	V
30				4									H	8
	S-7	60/30	30-35	NA	NA			Brown, wet, COARSE SAND, some (sub-angular) gravet						
		-		-								翻	H	
33		-	-			-	-							
													H	
34				4									H	Č.
													H	
1	5-8	HILTO:	75-40	11.	1.22			Brown sannated FINE TO MEDIE M SAND, frace coarse				掛	H	
						1		sand				閧	H	
													H	La Schodule krijivi (6
1	-				-	-		3	-	3-16		##	H	7
			3		-5			As Field Testing Results			1	翻	脚	
307			1										H	
	5.0	bir Li	40-45	1.1	11			from), saturated APDICM TO COARSE SAND, trace fine sand				Ħ	H	
,													H	
42						\vdash		0				翻	H	Grow 2-53-50
					9-51			9					H	
44		200	5.1		4				1	wi .				2 4 6
	200		10000		15.77			in the transfer of the second		Tie-				4 190
46	S-10	60 27	45-50	NA	NA			65-8' Hrown saturated COARSE SAND AND GRAVEL with angular took flagments					肼	
									S	AND	13		H	
		1						9°-27" Brown, samuated, FINE TO MEDIUM SAND, trace			1		圃	X
48						100		coarse sand						
					8			As Fold Fisher-Rysoffer			0			
50		10.0										H	H	
Note	9		Push grou Iwater pro					inducted into 10 10			Kes	10	t'en S Dal	ient I Cuttings Native Soils
		3) 41										H	Hen	tonne Gran
		5)										=	Sere	
Rome		for D Stratefi	eation line	es represe	nt approx	compr	e boi	indanes between soil types and the transition may be gradual.	A stor lo	of realisate	A COURT	prompt.	Risa	9

mm	905B S	eign (outh M eld, Ma	ain Str	eel	Inc.	Boring/Well ID: SHM-10-03			Sheet	3 of 3
Client: Project: Project M Location	lumber:	USACT: SHL - F AC001 Fort De Ayer, N	ort Dev	ens		Drilling Co.2 Geosearch Drill Rig. Geoprobe 6610D1 Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Casin type PVC Size 1.5" Hamin NATE	ier		Samples Geoprobe Spoon 60° Fall & A°
-		mple Ir	format		3	Start Date: 6/23/2010 Completion Date: 6/23/2010	Casing Surface	- M6-1	evation:	231.88 - NGVD 29' 229,6+/- NGVD 29'
Depth Sample ID	Pen./Rec. (in.)	Interval (Ft.)	9)	Field As Testing	Sample Type Water Detected		100000000000000000000000000000000000000	head	d Type:	Standpipe
	-	_	Blow/6"		Samp	Sample Description	Change (ft.)	Note	Test D	oring/ Monitoring Well Construction
52	60 25	50-55	NA	NA		Light brown saturated. FINE TO MEDIUM SAND, with (sub- tounded) gravel.				1 5" Schedale 40 PV (* Riser 0-58 5* Grout 2'-53 5*
54' S-12	60/30	55-60	NA	NA		Light brown to gray, saturated, MEDIUM TO COARSI	SAND			Hentomie 53 5'-55 5'
58						SAND, trace fine sand Brown, saturated, FINE SAND, some medium sand				#2 Morre Sund 55.5'-68-5'
100				5		As Field Testing Results		,	N E	
S-) 3	60.25	60-65	N/A	NA		Light brown must. FINE SAND, frace 5th				
102						d (Sid electron and and All (III Ship-1) of SA(A))				1 - 1 - 4 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
64 S-(4	pu 29	65-70	NA	XX		Light brown to Grac, saturated AIEDICALSAND some coarse sand trace fine sand	8.000			58 N 130 P
68	2.	*		<5		As Field Testing Results		T		ASING REPUSAL @ 68 5
70	1 6*	٠,,		1.5		(a) k x (n 12 a a 1 a a	1 1-0 x 2 x	2	.2	0 94 8 3
S-13	3(3)	Peril 2	71	1.1		Ogla brown dix, UM: 10 XII/DR M-8AND	GLACIAL.	1		
72						SAMPLER REFUSAL, a. 72	70.4	1		
74										
Notes		Push grot dwater pro				inducted on ti 10 Ht		Key		Cement Driff Curings Notice Soils Bentonite Grigit Sand Sereen Riser

Clic		Mansfi	eld, Ma USACI					Boring/Well ID: SHM-10-04 Drilling Co : Geoscarch	A*0808	e	311661	L of 4
Pro	icct: icct N ation:	umber.	SHL - 1- AC001	200 100	vens			Drill Rig: Geoprobe 6610DT Drill Method: Direct Push	lyny Steel Size 125			Comprobe Space) A0**
Line	ation:		Fort De Ayer, N					Foreman: Rodney Kaddy SCI Inspector Danielle Eastman	Hamm SA 05			¥20 3.3°
		Sa	mple li	iforma				Start Date: 6/24/2010		_	evation	
	9	E. (in.)	(Ft.)		Testing	Type	etected	Completion Date: 6/24/2010	Surface Well		evation d Type	A STATE OF THE PARTY OF THE PAR
Depth	Sample ID	Pev/Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Water Detected	Sample Description	Stratum Change (ft.)	Nofes		Boring/ Monitoring Well Construction
	5.1	(01/38	1)-5	NA	NA-	Ť	Ĺ	Topsoil (7-inches)	TOPSOIL	ŕ		Standpipe is Y ags.
**			10,31,25					Dark brown to brown, dry, FINE SAND, some sife times medium to coarse sund			200	Cement 0-26
4												
	5-2	6W56	5-10	NA	NA			Brown, saurated, MEDIUM TO COARSE SAND, trace of				
6							٧	fine sand and grave)	SAND			
8							L					1 5" Schedule 10 PVC Ru
10	5.3	(4)(5)	1001%	NA	N.V			Binso, somewheel CHARSE SAMD more medium same trace				0-55'
12				****			2	मितर ड्यामी माने ब्याहरी				
				,					× y+11			
13	Sel	nii 50	15.20	NA.	8.4			As) old festing Resides				
10	Sea	100 301	(SGII	X.Y				Mirayu santani MPIM XI DACDARSI SASD Todzad Briz santani gangi				
18												
							Г	111 5 0 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	i e	1		
20	mark.	THUTTON	20025	3.3	33	H	-/)	Brown summed still by the critical section of	* * *		圃	
72								line sand and gravet	SASIS			Circuit "
								Hotton 8" - Hower -appeared TTME TO MEDIUM (SAND), trace 840				
					5	\vdash		As Field Festing Results		1		
Note	5	1) Direct	Push groo	andwarer	profile sa	mplic	ng co	nducred on 0.8 10		Ke	H	Cemen
		 Geome Geome 	dissage pro	tite same	der refuse	d ije	95"					Parl) Cranngs Starve Suit. Bernaud Donn
		4) 2)								Ш		Sand
		(4)										K(sa)
Renn	116.5	H Stranti Unies and	under con	iditions s	stated Flo	actua	e bo	indaries between sort types and the transition may be gradual. A of groundwater may occur doe to factors office that those prese	at at the toric meast	a em	e cample outs were limmally	red m

ı	m	905B S	South A	Const lain Str assachu	cet	Inc.	Boring/Well ID: SHM-10-04			Sheet 2	t of 4
Pro Pre	ent: jeet: jeet N cation	lumber:	USACI SHL - AC001 Fort Di Ayer, N	E Fort Dev evens MA	vens		Drilling Co.: Geosearch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Casio Type Steel Size 3-25" Hamm NA II	ier is		Sampler Geopralse Spoon 191 ²⁴ Fall NA ⁹⁷
				nforma		pe	Start Date; 6/24/2010 Completion Date: 6/24/2010	Surface	e Ele		212,37 - NGVD 29' 209,8+/- NGVD 29'
Depth	Sample 1D	Pen,/Rec. (in.)	Interval (FL)	Blaw/6"	Field \s Testing	Sample Type Water Detected		Stratum	səte	Test Bo	Standpipe ring/ Monitoring Well
26	9-6	60.60	25-30	NA.	NA	<u> </u>	Sample Description Brown, sammand, FINE TO MEDIUM SAND, little coarse sand, trace silt	Change (ft.)	7.		Construction
28							sand, trace sin	SAND			5" Schedule 40 PVC Riser 0-55"
30	S-7	60,460	30-35	N.A	NA		Brown, saturated, FINE TO MEDIUM SAND, hitle coarse		l S		
32							sand, trace silf				
34				7	ž		As Field Testing Results				
	N-8	701-741	45-10	SA	NA	M	Brown, saturated 1481: 11130H20H318-AXD; Indecesses				
16							much trace alt				
111								>1/11			
	83)	tate fre	40045	XV	NA.		Brown saturatesk FISE TO MEDICAL SAND In the course sand, trace saft				
42						H					Grout 25-197
44					<5		As Field, Testing Results	100	.1		
46	\$10	60 33	45-50	NA	NX.		Hown samuted MEDR'N TO COARSE SAND trace fine sand, (some orange coloring)	217 H	-		
48								8480			
4.0											Bemonto 49:52
Non	25			ondwater polite samp		1	L inducted an 6 8 (ti		Key	D 35 57 57 57 57 57 57 57 57 57 57 57 57 57	the content of Columns Native Soils content of Columns Native Soils content of Columns o
Ren	arks	1) Strant times and 2) Field a were coll 3) Sample	l under co As testing ected in the e is design	nditions s values rep re same de nated as er	toted Florescott are opth inter ther "("	netuation seme con val and si for comp	ombaries between said types and the transition new be gradual s of groundwater may occur due to factors other than those pres- centrations in ug.l. collected using Industrial Test Systems Also ibinitied to a falsociatory for testing. Please see tables for fabora source or "Cr' for artherete gradus ample."	ent at the time measi one Quick Fest Kus my data	ureme	completed ints were ma	a) ide

MAN.	905B S	eign (outh M eld, Ma	ain Str	cet	Inc.	Boring/Well ID: SHM-10-04			Sheet 3	of 4
lient: ojeet: ojeet N ocation:	lumber:	Fort De Ayer, N	ort Dev			Drilling Co.: Geosearch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Casm Type Steel Size J 25" Hamm NA fi	ner TS		Sampler Geograde Spoon oft" Fall NA"
		mple I	ilormat		e ted	Start Date: 6/24/2010 Completion Date: 6/24/2010			evation: evation:	212.37 - NGVD 29' 209.8+/- NGVD 29'
Sample ID	Pen/Rec. (in.)	Interval (Ft.)	Blaw/6"	Field As Testing	Sample Type Water Detected		Well Stratum		Test Bor	Standpipe ing/ Monitoring Wel
S-11	60.5	50-55	₽ NA	NA.	8 =	Sample Description Brown, saturated, FINE TO MEDIUM SAND, trace sili	Change (ft.)	Notes	CCO 80	Construction
3-11	100.3	3(1-33	NA	NA.		Brown, saturated, FINE TO MEDIUM SAND, trace sill				Bentomte 49'-52'
				5		As Field Testing Results		1		#2 Morre Sand 52'-65'
S-12	60/23	55-60	NA	NA		Brown, saturated, COARSE TO MEDIUM SAND, little fine sand (increasing percentage with depth)	SAND) 5° Schedule 40 PVC
										Well sereen - 0 01" slot
B43	60 24	60-65	NA	NA	\parallel	HOWE Saturated TIME TO MEDIUM SAND (some mange coloring)				
					H		SAND			
				5	1	As Field Testing Results.		i		
S-14	60/35	1651/01	Ñλ	N		Brown saturated FIST TO MEDIUM SAND (some mange columns)				SINGRIFUSAU a 65°
		44		1-0			SAND		E STC S	ž -)
8-15	100.24	Tim2*	1.10	5.1		Errori, sanutared, FISE TO MEDIUM SASD (some vitalige coloring)	SAND			
				ň						
				,		As Field Testing Results		1		
		Push grod dwater pro				anducted on 6 8 10		Key	Dr Hi Be	ngent dl Connigs Naive Sorls intonité Grout and neen

Pro Pro	ent: oject: oject N cation		USACI SHL - I AC001 Fort De Ayer, N	ort Dev evens AA			Drilling Co. Geosearch Drill Rig. Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman Start Date: 6/24/2010	Type Steel Size J 25" Hanny NAH	iei is		Sampler Geographe Spoun 60" Fall 8:A"
	Q	4.4			Field As Testing	Sample Type Water Detected		Surface	e File	evation: evation: d Type;	212.37 - NGVD 29' 209.8+/- NGVD 29' Standpipe
Depth	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"	ietd Vs	Sample Type	Saveda Dagavietlau	Stratum Change (ft.)	Notes	Test Bo	ring/ Monitoring Well
76	S-16		75-80	NA	NA NA		Sample Description Brown and orange, wei, COARSE TO MEDIUM SAND, mace wavel, Jense		ŕ		Construction
78							Bottom 1° - Gray, saturated, Fine Sand	GLACIAL TILL			
80											
82	S-17	60/38	80-85	NA	NA		Dark brown to brown, saturated, MEDIUM TO COARSE SAND, trace gravel and line sand, dense (some orange coloring)				
84					~ S		As Field Testing Results		,		
St-	5-18	-60 IS	85-98a	N	M		Brown, saturated MEDICALITY COARSES AND Trace fine gravel and frue sand dense				
								101			
(F)	8.10	tat 2n	up.a5	NA	NA		0"-10" - Brown, saturated MEDIUM 10 COARSE SAND higherine sand 10"-14" - Brown, saturated, FINE SAND AND SILT				
							14" - 16" Gray, saturated, MEDIUM TO COARSE SAND.	(
94	-	4	A S		10-20		httle fine gravel and fine sand, trace silt, dense. As Field Testing Results	- 40	1	Ţ.	± 8 ¹
165	():=1		Sactor.		-3	Ť	SAMPLER REFUSAL @ 05'	*.	2		and the first of
***								1			
TI.O.											
Son	es		Push gun dwarer pa				Inducted on 6-8-ft		Ke		entent brill Cuttings Native Soils femante Groun and cover

*

		Mansf	eld. Ma	lain Str issachu				Boring/Well ID: SHM-10-05A			Shee	t 1 of	f 4	
ro	cct.	lumber:	AC'001 Fort De Ayer, N	Fort Dev evens AA				Drilling Co.: Geosearch Drill Rig: Geoprobe 66 (01)* Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Carolyn Hardt	Type Size	Steel 1 25" I lamme NA lbs			Samples Geographe Spoon 160° Fall NA"	
	-	Si	mple I	uformat				Start Date: 7/2/2010	1		Elevation		234.92 - NGVD 29'	
	0	Pen./Rec. (in.)	(Ft.)		Field As Testing	lype	Water Detected	Completion Date: 7/2/2010		Surface Wellh	Elevation ead Typ		NA Flush Mount	
ıth	Sample 1D	./Rec	Interval (Ft.)	Blow/6"	ld As	Sample Type	ter D		Str			_	g/ Monitoring Well	
Depth	Sall	2	Ē	8	E .	Sa	=	Sample Description			2		Construction	
								Asphalt Payement (3-inches)	ASP	TEXAL				
2													Cement 0-2	1
ì				VIII.				Location pre-cleared of orthires by vacuum fruck to 8' hgs	1		Щ			1
					0.0	Ш					開			V
4	-					H								
														1
6						Ш								
												開		
8								V.						1
,	S-1	24-22	8-10	NA	NA			Dark brown, moist, PINE SAND, trace medium and coarse	-S/	ND	曲			
				-				sand (well sorted)			讎			
10	S-2	00.48	10-15	NA	NA	H		Brown, most, FINE SAND, trace medium sand			腊	鬪		
		1	700	1			3							
¢							1		1					
													((01))	
14						1			Î	1		H		1
						f			S.	AND				
	83	100.00	15-20	ŇĀ	NA		1	Brown morst FINE SAND trace medicin sand	1					
l te	-						-							
										1	圃			
18				500							H	H		
		987	- 3	. ,1			5	1 0 40 10°	9.1	9. 7				
70		*					1	1 a 1 a 1 a 1 a 1	15	4.				
30	8-1	00.51	20-27	1.1	27			Light brown morst, FENL SAND, some medium sand, frace			壨			
								gravel (increasing percentages of medium sand with depth)	83	AND	肚		Genia 2545*	
22							2		100			圃		
								/ ·						
24		J.E.								N.				
							H			/				
one	h .							inducted on 6.9 Ju	4		Key	Cenu	ent	-
		2) Groun 3)	dwater pro	afile samp	lei refiis;	d ar l	(0)	As 5 ug 1, u 1000			8		Cuttings Native Sorts omte Grout	
		41										Sand		1
		61										Riser		
tem	arks:	1) Stratif	ication lin	nditions of	nt appro	nemat	e boi	induries between soil types and the transition may be gradual of groundwater may occur due to factors other than those pre-	Water leve	el (endings	vere comp	eted at		
		2) Field .	As testing	values rep	resent at	senic	con	entrations of ug 1 collected using Industrial Test Systems Ais	eme Quick	Test Kus	Additional	v samp	les	
								limited to a laboratory for testing. Please see tables for laboral site of "G" for a discrete grab sample.	tory data					

m	100	905B S	reign (South M ield, Ma USACI	ain Str issachu	eet	Inc		Boring/Well ID: SHM-10-05A Drilling Co.: Geoscarch				Shee	t 2	of 4
roj	ect;	imber:	SHL - F AC001 Fort De Ayer, N	Fort Devens				Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Carolyn Hardt	Espe Size	Casin, Steel 3 25" Hamm NA lb	cı			Sampler Geoprobe Spoon 60" Fall NA"
		Si	imple li	lorma				Start Date: 7/2/2010	1	Casing				234.92 - NGVD 29'
И	la.	(in.)	3		Field As Testing	odo	Water Detected	Completion Date: 7/2/2010		Surface				NA Clark Manage
_	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	9/	18.	Sample Type	r Det		Str	atum	mead	Tout		Flush Mount ing/ Monitoring Well
Depth	Sam	Pen.	Inter	Blow/6"	Field	Snm	Wate	Sample Description	Char	atum ige (ft.)	No.			Construction
6	S-5	60/56	25-30	NA.	NA		*	Light brown to dark brown, moist to wet. FINE TO MEDIUM		- Carlot		H	H	
0							-	SAND: trace course sand and gravel					#	
1				-	~								肼	
8						_							H	
					5			As Field Testing Results			1			
0									8	IND		閧	世	B
	S-6	60/60	30-35	NA	NA			Dark brown to light brown, wet, FINE TO MEDIUM SAND,		NAD.		圃	曲	
								trace coarse sand and gravel						
2						-							H	
									1				H	
4		. = 0							1				H	
									1					
1		60 11	35(4))	EX	11			SORECOVERY	1			H		
6					147		_							
Ш									1			閧	掛	
ı												盟	H	P Scholale 10 PA t Ri
1					5	1		As Field Testing Results					H	
				121	2			As Front Testing Results	S.	ND	Ľ		曲	
10.	5.7	60.23	40-48	XX	NA	-		Light brown, summed, FISE SASD					肼	
					127			7,200	1				H	
2												Ħ	H	
									1					Grout 2'-45'
									1			H	世	
4	-		100					4 400,00	1	e 15.			H	N 65 596
	\$.8	60/24	45-50	NY	"NA"		-	Light brown saturated FINE S VND	= "		- 1		H	2 1 1 1
4	3591	107.54	34,3-570	35.3	120			Time order Samuelle PISES VSI	1					Bentonne 45'-47'
									S	720				
١											1			
8			1											=2 More Sand 47-609
				2	13			$U_{ij} = \{\psi_{ij}(t) \mid \psi_{ij} = \psi_{ij}(t)\}$			10			
0		1.00												
ates		2) Cironn 3) 4) 5)						nducted on 6 9 10 As - \$ 0g f - d - 100°			Kev	111.122	Dri Her San Ser	een
me	uks	times and 2) Field were coll 3) Sample	funder cor As testing ected at the case design	nditions s values rej e same de med as cr	itated FI present are other "C"	netua seme val an	come d su	undaries between soil types and the transition may be gradual s of groundwater may occur due to factors other than those pres- centrations may L collected using Industrial Test Systems Arse himitted to a laboratory for testing. Please see tibles for Jaborato- sate or "C" for a discrete grab sample: table — KR, No Recovery—bys below ground surface ags, aborators.	ent at the one Quick ory data	time measu Test Kits	remei	its wer	e mad	e

Clic	m	905B S Mansfi	reign (South M ield, Ma USACI	laiu Str issachu	ect	Inc.	Boring/Well ID: SHM-10-05A Drilling Co. Geosearch			Sheet 3	
Pro Pro	jeet:	umber:	SHL - I AC001 Fort Do Ayer, A	Fort De- evens AA			Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Carolyn Hardt	Type Steel Size 3.25° Hamur 8A lb	er		Sampler Geoprobe Spoan 60" Fall NA"
			ample li	nforma		ope	Start Date: 7/2/2010 Completion Date: 7/2/2010	Surface	He	evation:	234 92 - NGVD 29 NA
Depth	Sample 1D	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Sample Description		Notes	Test Bori	Flush Mount ng/ Monitoring W Construction
52	S-0	0E:00	50-35	N:1	KA.		Light brown, saturated, FINE SAND				
54.											#2 Alone Sand 47'-htv
56	S-10	60:13	55-60	NA	NA		Light brown, saturated, FINE SAND	SAND			
58) 5" Schedule 40 PVC Well screen - 0.01" sin 50'-60"
(i)					-5		As Field Testing Results		1		
102	S-11	60/50	60-65	8.8	NA		Light brown sammed FINESAND			(1)	INGREPUSAL a air
nd								SAND			
£ et a	S-13	141 307	65×7ft	NA.	.5.4		Fight brown saturated FPSI(SASI)	SAND			
trib.											
70	104			7	1 <5	1 .	As Field Testing Results	1	1	*	
1							SAMPLER RELECTION TO				
72											
74											
Num	15		Push good				onducted on W^0 10		Kes	(M) Dai	cen

(a)

111	154	905B S Mansfi	outh M	Const Iain Str assachu	cet			Boring/Well ID: SHM-10-05A				Sheet 4 of 4
roj	cct:	umber:	AC001 Fort De Ayer, N	Fort Dev evens MA				Drilling Co Geoscarch Drill Rig: Geoprobe 6640DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Carolyn Hardt	Type Size	Casol Steel 3/25° Hamm XA II	er	Samples Geoprobe Spoon 60° Fall NA*
		- 4	imple I	nforma			7	Start Date: 7/2/2010 Completion Date: 7/2/2010		Casing		evation: 234.92 - NGVD 29' evation: NA
	2	; (in.)	(Ft.)		Test	Type	etecto	Completion Bate. 7/2/2010				Type: Flush Mount
Depth	Sample 1D	Pen/Rec. (in.)	laterral (Ft.)	Blow/6"	Field As Testing	Sample Type	Water Detected	4. U.S		ratum	Notes	Test Boring/ Monitoring Wel
š	ž	2	2	2	E	, ž	=	Sample Description	Cha	nge (ft.)	Z.	Construction
6						H	-					
			- 11			П						
8												
					5			S			4	
11												
		1		-				F = 11				
2				1								
2						H						
					1	Н						
1					-	H	-					
				100					1			
											1	
		6		11					1			
1					-3				1		1	
,,						И			1			
1								10	1			
						П						
2												
	-		1131	- =		П						
4	7	P 30		F 4								- W- 1 V
			1		00		7,6	31 (C. 1. M) = 10.5	1	- 0.00		The same of 1860 186
0							_					
								11 Lal				
58												
					3.				Y		18	
rite											1	
iles		2) Ground 3) 4) 5)						nducted on 6-9-10 As = 5 ug 1 - w 109			Key	Drift Cuttings Native Soils Hentonite Grout Sond Scieen
ונרוז	rks	times and 2) Field were colli-	under co As testing cered at th	nditions si values rep ie same de	tated 15th present at: pub inter	uctuati seme e val and	ons one I sul	induries between soil types and the transition may be gradual of groundwater may occur due to factors other than those presentrations in ugsl, collected using Industrial Test Systems Arsomitted to a faboratory for testing. Please see tables for laboratistic in "G" for a discrete grab sample.	sent at the eme Quie	time measi	neme	ents were made

IT	m	905B S	reign (South M Seld, Ma	ain Str		ne.		Boring/Well ID: SHM-10-06				Shee	et 1 of 4	
Pro	ent: ject: ject N cation	lumber. :	Fort De Ayer, N	Fort Dev evens MA	~			Drilling Co. Geosearch Drill Rig: Geoprobe 6610D7 Drill Method Direct Push Foreman: Rodney Kaddy SCUnspector: Danielle Eastman	Type Size	Casa Steel 1 25" Hama NA II	ner		Sampler Geoptobe Spine (d)" Fall (c) A"	vo
			ample f	uforma			led	Start Date: 6/21/2010 Completion Date: 6/21/2010		Casin; Surfac		evation evation		
	Sample ID	Pea,/Rec. (in.)	Interval (Ft.)	. 9	Field As Testing	Sample Type	Water Detected		-	Wel	lhea	d Type	e: Standpipe	
Depth				Blow/6"		Samp	Water	Sample Description		itratum ange (ft.)	Notes	Test	Boring/ Monitoring Construction	Well
	S-1	140 42	D-5	NA	NA			Tapsail		OPSOIL.	-		Standpipe is 3' ags	
						Ш		Light brown to gray, dry, COARSE SAND, some medium sand			1	8	Cement 0-2	
						Ħ		Survey (Survey Survey S			V.			
						1						關		
1									1		1			
	S-2	6041	5-10	NA	NA	П								
				7 / /		Н	-	Light brown to gray dry, COARSE SAND, (well sorted)		SAND	l	田		
						П		to guille brown to guilly bit, e.o. tical annua, (well softed)			L			
												闡		
ĺ														
n									Ш			圃		
	5.1	60.53	10-15	NA	NA		î	logh brown to grave dry COARSES AND (well somed)						
						П						鬪		
1.4						H	÷				1	翢		
ı						1 !			1			開		
1							Ц					Щ		
1											1			
60	Set	193 40	15 CH	11	11	Ш		Buwu, moist to wei. (OARSES AND (well sorted)		21717				
														Mark Walle
						11					1	關	1 5" Schedule 40 1 0-69 5'	Y C Rise
8						11					1	關		
1		- 2	27	- 10 0 B	-	1	*		10	5	1			
0	3.5	nw 48	2623	11	2.4		٧	Throng sampled CO (RSL SAS), their amount	1		1	開		
١	0.0	300.10			1			The state of the s	1		L	圃	Group 2-6-1.5"	
•			1									開		
١									10		П			
d					me			As Field Testing Results						
						\Box		The terms at any			P	臘		
ole	18					A	(en	lucted on 5.24 10 & 5.26 10	1		Ke	, 1111	Cement	
		2) Group 3)	dwater pro	offile samp	lei refusal	ar 80.							Drill Unitings Native S # Benjonne Gront	oils
		4(Sand	
100	0.4	6)			NO.			To December 1					Sercen Riser	
cit	nuks	times and	Lunder co	nditions s	lated Flui	cimino	us (daries between soil types and the transition may be gradual if groundwarer new occur due to factors other than those present	ent of the	time measur	emer	ils were i	made	
		2) Field	As testing	values rep	resent arso	mic co	nce	ntrations in ug I, collected using Industrial Test Systems Arse outed to a laboratory for testing. Please see tables for laborato	nie Quie	k Test Kits	Addi	tionally	samples	
		3) Sampl	e is design	iated as er	ther "t" fo	a com	1051	te in "G" for a discrete grab sample le NR No Recovery bgs below ground surface ags abo		Toward				

1	10	905B S	eign (outh M eld, Ma	lain Str		nc.	Boring/Well ID: S11M-10-06		SF	neet 2 of 4
ro	nt: ject: ject N ation	umber:	USACI SHL - I AC001 Fort De Ayer, N	ort Dev evens AA	vens		Drilling Co.: Geosearch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	(Type Steel Size 3.25" Hannin NA II	ne) hs	Sampler Geoprobe Spoon 60" Fall NA"
1	-		F 7 Completion Date: 6/71/2010							tion: 232.77 - NGVD 29' tion: 229.8+/- NGVD 29'
	8	Pen./Rec. (in.)	(FL)		Field As Testing	Sample Type	Competion Date. W21/2010	1,000,000	thead T	
Depth	Sample ID	/Rec	Interval (Ft.)	Blow/6"	2 2	uple		Stratum		est Boring/ Monitoring Well
)	S-0	60/43	25-30	E NA	NA NA	Sar	Sample Description Brown, saturated, COARSE SAND AND GRAVEL some	Change (ft.)	7	Construction
6	2-0	00/43	23=10	14/1	MA	1/0	medium sand	7.1	1 1	
		1-1								
				7						
8				-			1			
1								SAND		
0								3.110		
1	S-7	60.0	30-35	NA	NA		NO RECOVERY		1 #	
2							1	1		
4					150-200	_	As Field Testing Results		1	
	8.8	100.0	15-10	2.7	NA		NOBECOVERY		日田	
			V (4			1 - Senoning Fet Bra
4		1 :			-				I E	A CFF
H									日田	
6										
Ī	5.6	60.26	40-45	2.7	NA.		0"-12" Light brown to goly, saturated COARSESAND			
										Group 2-6-1 5
3		-		-		+	12"-26" Light Brown to Gray, Saturated, FINE - MEDIUM		一曲	
1							SAND			
4		400			100 .		As Field Testing Results	3	1	
1			4,114						1.	
	S-10	60'60	45-50	NA	NA		Light brown to gray, wet, FINE TO MEDIUM SAND, trace			
G							sili (Well sorted)	7,1,1,4	#	
							1 O II	SAND		
8				102					日日	
ofe	s						iducted on 5/24/10 & 5/26/10		Key	Centent
		2) Choum	hvater pro	ifile samp	ler refusal	n 80°				Drill Cuttings Native Soils -EF Bentonite Gront
		dd								Sand
		51								Screen Riser
ein	nrks						indaries between soil types and the transition may be gradual. World groundwater may occur due to factors other than those preser			
		2) Freld :	As testing	values rep	resent arse	nic cone	entrations in ug I, collected using Industrial Test Systems Aisen	ie Quick Test Kits		
							matted to a laboratory for testing. Please see tables for laborator are in "G" for a discrete grab sample.	y data		

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IT		905B S	outh Micld, Mr	lain Str issachu		nc.	Boring/Well ID; SIIM-10-06			Shee	et 3 of 4			
Pro Pro	ent: ject: ject N ation:		USACI SHL - I AC001 Fort De Ayer, N	Fort Dev			Drilling Co.: Geoscarch Drill Rig: Geoprobe 661011 Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Size Sizel Size 128* Hann NAT						
			ample l	utorma		ype	Start Date: 6/21/2010 Completion Date: 6/21/2010	Surfac	e lik	2000000	1: 229.8+/- NGVD 29'			
Depth	Sample ID	Pen-/Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Completion Date: 6/21/2010 Sample Description	Stratum Change (ft.)	stes	Test	Boring/ Monitoring Well Construction			
	8-11	60-16	50-55	NA —-	N.A		Light brown to gray wet, FINE TO MEDIUM SAND, adh, (well sorted)							
52					5		As Field Testing Results		,		1 5" Schedule 40 PVC Riser 0-69 5"			
56	S-12	60-28	55-60	NA.	NA		Light brown to gray, wet, FINE TO MEDIUM SAND, wit, (well sorted)	SAND frace.						
58					5						Grout 25-64 51			
30	S-13	160 201	60-65	NA	NA NA									
2		111 - 31	107-02	WA	1974		Light brown to gray, moral, PANE TO MI/DIUM SANI salt, rock fragments at bottom aleuse. (well sorted)	S 17(1)						
4					150		As I reld Testing Results		1					
W+	8.11	ме	กริสัย	**	XX		Light brown to gray moust, FINE TO MITDIEM SAND fragments, dense	Frock			Beginnueral 55th 5			
38										dri				
						41	W (SAND	+		#2 Morie Sand 69.5'-79.5'			
70	2013	un Si	7m75	11	54		Light brown to governorst 1181/10/11110/31/8433	,	ľ					
2										THE STATE OF				
7.4					500		As Field Testing Results		1					
ote					nofile sam ter refusal		militeted on 5.24 10 & 5.26 10		Ker		Cement Drill Cuttings Native Stalk Hentonite Grout Sand Screen River			
em		times and 2) Field : were colle 3) Sample	under cor As testing ected at the ests design	iditions si values rep e same de ated as cil	rared Flue resent arse pili interval ther "C" for	nie con ind s comp	undaries between soil types and the transition may be gra- is of groundwater may occur due to factors other than thos centrations in ug-1 collected using Industrial Test System aboutted to a laboratory for testing. Please see tables for k osite or "G" for a discrete grab sample cubte NR. No Recovery bys. below ground surface ag	e gresen) af the time meastr s Arsenie Quick fest Kits : dicastory data	emen.	is were i	ed at made			

r	1111	905B S	reign (South M ield, Ma	lain Str		nc.		Boring Well ID: SHM-10-06			Sheet 4 of 4
Pro Pre	ent; oject oject N cation	lumber:	Fort De Ayer, N	ort Dev				Drilling Co.: Geosearch Drill Rig Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney SCI Inspector: Danielle Eastman	Cusu Type Steel Size 1.25* Haun NA1	ner	Sampler Geoprobe Spoon 60° Fall NA°
		S	ample I	nforma				Start Date: 6/21/2010		-	evation: 232.77 - NGVD 29'
	121	Sample 1D Pen/Rec. (in.) Interval (Ft.) Blaw/6" Field As Testing Sample Type						Completion Date: 6/21/2010	10 m		evation: 229.8+/- NGVD 29'
	Sample ID	Kec.	Interval (Ft.)	9	2	Sample Type	Water Detected		Stratum		Test Boring/ Monitoring Well
Depth	due	750	ater	Blaw/6"	Tield	me	Vate	Sample Description	Change (ft.)	Notes	Construction
-	S-16	00/40	75-80	NA	N.A	ı,	_	Light brown to gray moist, FINE TO MEDIUM SAND, rock	Change (ii.)	1	
76					>500			fragments, dense As Field Testing Resolts	SAND		1 5" Schedule 40 PVC Well screen - 0 01" slot 00 5-79 5'
		i			200			as their teating results		11	
80	_							SAMPLER REFUSAL @ 80°		2	CASING REFUSAL (ii: 79 5)
								SAMITER REPUBLIE III			
82						H					
8+										I	
Si										B	
							ij			h	
teg											
92											
94				45	10				1 3 3		4
		1	242		10- 18			Contract to the second	2 10		Int I
96	000										
98											
Not	es				profile san der refusal			Ineted on 5 24 10 & 5 26 Hz		Key	Centent Draft Cuttings Native Soils Historium Cuttin Sand Sereen Riser
Ren	narks	1) Stratif times and 2) Field . were coll 3) Sampl	f under cor As testing ected at the e is design	nditions s values rep ie same de tated as ci	tated Fluo resent arso opth interva (ther "C" for	etuation enic cr d and r cont	ns o nce subi posi	adaries between soil types and the transition nery be gradual. A of groundwater may occur due to factors other than those prese nitrations in ug.l. collected using Industrial Test Systems. Asset intied to a laboratory for testing. Please see tables for laborator teor. (C. To) a discrete grab sample.	nt at the time measure Quick Test Kus ry data	remen	completed at its were made

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1		905B S	outh M	Consu Iain Str issachu	eet	Inc.	Boring/Well ID: SHM-10-06A		Sheet 1 of 4
70 20	nt: jeet: jeet N ation	lumher: :	AC001 Fort De Ayer, N	Fort Dev			Drilling Co. Geosearch Drill Rig. Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman Start Date: 6/16/2010	Type Steel Size 125° Hann NA	Geographe Spoon 60° mer Fall
				nforma		Surfac	ng Elevation: 248.39 - NGVD 29' ee Elevation: 245.7 +/- NGVD 29'		
Depth	Sample 1D	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type		Wel Stratum	Hhead Type: Standpipe Test Boring/ Monitoring Wel Construction
ě	S-1	60.40	0-5	MA.	I NA	ž ;	Sample Description 0"-7" Dark brown, dry. Topsoil	Change (ft.)	Construction Standpape is 3' aux
2							7"-16" Light brown to gray, dry, MEDREMITO COARSE SAND, with gravel 16"-24" Light brown, dry, FINE TO MEDRIM SAND	1073011	Cement 0-2 ⁺
6	S-2	60:46	5=10	NA	NA.		Light brown to grav, Jry, FINE TO MEDIUM SAND, hace	SAND	
8	S-3	101.53	un15	NA.	N.V		Eight buwon to gray, maist, FINF TO MP DIFM SAND, trace gravet		1.5" Schedule 40 PVC Ri
4	\$-4	7MX 511	15-20	37	SA		Light brown to grav, moist FINE TO MEDIUM SAMD frace gravet	SAND	Group 2:-72*
8						H		1	
	0.3		**				a a 15 por 5 4 m	DAT 8 3	1
0	250 (MICHAE	5m25	NA	NA.	1	o of Agia masa to gay six. SII BII SI 10 ca Vest		
2							SAXD		
							82"- 60" Light Brossa, mass. MFDIEM 110 COARSE SAND, some gravel.		
1									
ote							midirered on 5.24 10 & 5.25 10 5° As = 0 ag f , ii = 104° and As = 20 ag f , ii = 110°		Key Coment Drill Cultings Native Soils HE Bentante Grout Sand Sereen
em	niks	1) Strauf times and 2) Field ; were colf 3) Sampl	l under en As testing eered at (l e is desigi	nditions s values rep te same de rated as er	tated [F] present are opth inter ther "C"	netuatis seme co val and for com	mindaries between soil types and the transition may be gradual its of groundwaret may occur due to factors other than those pres accountations in u.g.l. collected using bidustrial Test Systems, Arisa administed to a laborations for testing. Please see tables for laborations for "G" for a discrete grab sample. NR: No Recovery bess below ground surface ages abs	ent at the time meas nic Quick Test Kits ary data	surements were made is Additionally, samples

T	1111	905B S	iouth A	Consu lain Str assachu	cet	Inc		Boring/Well ID: SHM-10-06A			Shee	120	of 4	
Pre Pre	ent: ject: ject N ation		AC'001 Fort Do Ayer, A	Fort Dev evens MA				Drilling Co: Geosearch Urill Rig. Geoprobe 66 [010] Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	(bisin Type Size) Size 3.25" Hanny NA.II	her hs:				
		-		nformat		be.	ected	Start Date: 6/16/2010 Completion Date: 6/18/2010	Surfac	e El	evation evation	к.	248.39 - NGVD 29' 245.7 +/- NGVD 29'	
Depth	Sample 1D	Pen./Rec. (in.)	Interval (FL)	Blow/6"	Field As Testing	Sample Type	Water Detected		Stratum Change (ft.)		Test	Bori	Standpipe ng/ Monitoring Well	
	S-6	60.60	25-30	NA.	NA NA	<i>\$</i>	11	Sample Description Light brown to gray, dry, FINE TO MEDIUM SAND	Change (ft.)	1	HEH	EE	Construction	
28														
32	S-7	60/56	30-35	ŅΛ	NA			Light brown, moist, MEDIUNI SAND, some line and coarse sand, trace gravel	SAND				l 5" Schedule 40 PVC Riser	
34	М				5			As Field Testing Results		1.			0.77	
	5-5	(0x,5-	35.40	84	21		•	Light brown wer, All DH M SAND some (me and coarse sand trace grave)						
41)	8.9	101.22	40-45	NA.	84			Eight brown, wet XII DR M SASD, some time and course						
42								saink three gravel	SAND				Cjum(2 ⁶ 7 2 ¹	
	-		-	-					Situate	1				
44		3430		-	40			As Field Testing Results		1	1		ad the	Control of
46	S-10	60.13	45-50	···NA	NA.			Brown moist FINE TO MEDIUM SAND trace coase sand					9.1 (2.1)	,
48														
21														
Sol	Ore .							inducted on 5.24 facts 5.25 (0) 87 As = 0 (ig 1) a 10 trained As = 20 (ig 1) a 140°		Ke	1	_	l Curings Sauve Sods tomic Groat d	
Ren	mrkš	Omes and 2) Field were coll 3) Sampl	Lunder co As testing ected at the cas design	nditions s Values rep re same de tated as et	tated Fi resent are opth inter ther "C"	uctual senic val an for co	trons enno d su inpo	induries between soil types and the transition may be gradual of groundwater may occur due to factors other than those pres- centrations in ug.L. enflected using Industrial Test Systems. Asso- bituded to a laboratory for testing. Please see tables for laborat- sition. "Gr for a discrete grab sample."	ent at the time meas enre Quick Test Kits ory data	aren	ients wer	e made		

1	1111	905B S	Wereign Consulting Inc. B South Main Street Boring/Well ID: SHM-10-06A Insfield, Massachusetts USACL Drilling Co : Geosearch							Sheet 3 of 4							
ro	ent ject: ject N eation	lumber:	SUL +1 ACOUL Fort De Ayer, A	ort De evens dA				Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Damielle Fastman	Casing Samples								
1		Z Completion Date: 6/19/2018											Casing Elevation: 248.39 - NGVD 29				
	q	(E)	(FL.)		Testi	Eype	etecte	Completion Date: 6/18/2010		Surface		d Type:	245.7 +/- NGVD 29' Standpipe				
Depth	Sample ID	Pen./Rec. (in.)	Interval (FL)	Blow/6"	Field As Teating	Sample Type	Water Detected	Sample Description	45.500		_		ring/ Monitoring Well Construction				
1	S-11	60-30	5(1-55	NI	NA	ī		0*-14" Light brown to gray, wet MEDIUM TO COARSE SAND, (well sorted)									
n				(1-180)			W										
								149-309 Orange moist MI DICAL SAND, trace course sand				開用					
1									1								
4					10			As Field Testing Results			1		i				
			الللا						S	AND							
6	S-12	60.32	55-60	N.A	NI		Ш	Gray, wet, MI DIUM SAND, some coarse, (well sorted)									
												開開					
									1				1 5" Schedule 40 PVC Ris				
58			-										0-77'				
				-								開日					
ea.	X-00	43(32)		***	07.1												
1	Self	601 J.Z.	Diblis	NA.	2.1			Ons, we to samuated, FIM: 10 MEDICAL SAND, dense			1	間間					
3																	
						1	1					HII II					
i							3		1		1	HEH H					
1				-	20	Н	-	As Ereld Testing Results			1		Gront 2:72'				
١	Sola	MIST	105.711	XX	11			Gins, sect to sammared JTN/ TO MEDICAL SAND, dense									
		1.450	00.74	200				The section of the se									
									1								
8												開用					
										0.20							
	er jeer	(2)		>						AND +							
n	5842	int po	inni	7.4	3.5			tane, were it is it this in a server stemme			1		5				
2							Ш		1								
												開用	Benfunte 725-74				
7.4					311-414			As Freld Testing Results									
							T	2 Ave. 10 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			,	-	#2 Morre Sand 7-F-87				
ote	251							iducted on 5.21 ftr& 5.25 ftt	-		Ke		ement				
		2) Grount 3)	dwater pro	tile samp	der refusa	1 11 1	His	'As 40 (g) a 104' and As 20 (g) La 110'					nill Cuttings Native Soils: entonite Good				
		41										□ s.	md				
		61										R	ricen				
ens	uiks	11 Stratif	ication fin Luider coi	es represe	ant approx	imate	e bor	ndaires between soil types and the transition may be gradual of groundwater may occur due to factors other than those pres	Water tev	el readings	Wer	e completed	al Glo				
		2) Field	As festing	values rep	nesent ar	seme	conc	entrations in ug I collected using Industrial Test Systems Arsa	enie Quie	k Test Kits	Ach	hinemath, sa	mples				
		1) Samuel	e is design	ated as e	the "C"	in en	or stil	omitted to a laboratory for testing. Please see tables for laborate or "G" for a discrete grab sample.	orr data								

T	in the	905B 5	reign (South M ield, Ma	lain Str	cet	Inc	Boring/Well ID: SHM-10-06A			Sheet 4	of 4
Pro Pro	ente oject:	lumber:	USACI SHL - I AC001 Fort De Ayer, N	Fort Dev evens AA	vens		Orilling Co.: Geosearch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Size 125°	uner ths		Sampler Geoprobe Spaan 60" Full NA"
	q	10.7		iioi iiia		ada	Start Date: 6/16/2010 Completion Date: 6/18/2010	Surfa	ce Ele	evation: evation: I Type:	248.39 - NGVD 29' 245.7 +/- NGVD 29' Standpipe
Depth	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Completion Date: 6/18/2010 Sample Description	Stratum Change (ft.	sotes		ring/ Monitoring Well Construction
76	S-16	60 14	75-80	NA	NA		Light-gray to brown, saturated. FINE TO MEDIUM SAND dense				#2 Morie Sand 74'-87'
80	S-17	60/34	80-85	NA.	NA.		Light gray to brown, saturated. FINE TO MEDIUM SAND dense	SAND			1 5" Schedule 40 PVC Well screen - 0.01" slot
84					60		As Field Testing Results		1		77'-87'
Ste	S-18	ou (4	85-00	NA	SA		Light gray to Ecosol, salmated: TESC TO MEDICAL SASD				
etz.											
0							SAMPLER REFUSAL in 907				SING REFUSAL at 100°
04		,			5 -		Arsenic Field Testing Results		1,		
) i			41.7/	-		A Dec Co	(5.8.4%)		\$ 3N	11 Sec. 11
18											
kon							conducted on 5.24 10 & 5.25 10 0.5° As = 0 ng 1 n (04° and As = 20 ng 1n +140°	1	Key	30 Bi	cment nH Cuttings Nance Soils entonite Grout and green sec
ten	narks	1) Strati) times and 2) Field were coll	f under cur As testing ected at th	nditions s values rep e same de	tated III resent ar epili inier	uctuat) senic c val and	boundaries between soil types and the fransition may be graduations of groundwater may occur due to factors other than those procentrations in fig. 1, collected using Industrial Test Systems A submitted to a laboratory for lesting. Please see tables for laboratory for its factors of "G" for a discrete grab sample.	esent at the time mea sente Quick Test Ki	sareme	ecompleted ints were ma	at de

T	m	905B S	reign (South M ield, Ma	ain Str	eet	Inc.	Boring Well ID: SHM-10-07		S	heet 1	of 3
Pro	ject:	1	USACI SHL - I AC001 Fort De Ayer, A	Fort Dev evens 4A			Drilling Co Boart Longycai Drill Rig: Alini Sonic Drill Method: Rotary-Vibratory Foreman: Rob Danckert SCI Inspector. PJV	Uxpic Steel Stre 67 Hainn NA II	ner bs		Samples (me Barel 24)* Fall NA*
			ample li	nformat		36	Start Date: 5/19/2010 Completion Date: 5/20/2010	Casin Surfac	g Eleva e Eleva		246 59 - NGVD 29' 244 6+/- NGVD 29'
Depth	Sample 1D	Pen/Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	2.26	Wel Stratum	Notes T		Standpipe ing/ Monitoring Well
š	5-1	60.36	JI-5	SE NA	NA.	7 :	Sample Description (**-16** Brown, dry All: DICAL TO COARSE SAND, but 6 fine	Change (ft.)	Ž		Construction Standance is 3' ags
104		(11-0)	00000	0110	0000		gawel, trace course gravel 16"-19" Dark brown, FINESAND; organic materials (feaves		35		Cement to 2
4							& most)		HHHH		
	S-2	60.53	5-10	NA	NA		19°-36" Gray, dry. FINE TO MI:DIUM NAND, some coarse sand to fine gravel, trash (metal fragments)				
6							97-12" Brown: moist, MEDIUM TO COARSE SAND, httle- fine gravef	SAND	H1000		
8							12"-53" Light brown, moist, FINETO MEDIUN SAND, httle coarse sand, trace fine gravel				
10	83	(015)	10 15	NA.	18.		Brown, moist in wet, FINV TO MEDRIM SAND				
12									111111111111111111111111111111111111111		u Par ken
1.1								İ	1 1111111		
in	Sel	We lie	18/20	×V	31		Brown mass to see, FINE TO MEDICALS AND	SAND	1		100m 25 W
18											
7							, i. 3, a				9 1 and 1
20	1		26427	(Ta)	19		÷	101 -	#		
22	Sed	643-341	200.00	7,47	8.5		fitown wer FEST TO AIT DICKES (S.D.				
									HHHH		
Ħ									111111111111111111111111111111111111111		
Note	es.	2) Soil so 3). 1) 5) 6)	mple coll	ected for l	laborator	v analys			Key	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	enten old Currings Narive Soils entourie Grout and erren ser
Rem	arks	Omes und 2) Field : were cull 3) Sampl	I under cor As testing ected at the e is design	ndirions s values reg e same de lated as ei	tated Fl present ar pub fater ther "C"	uctuation sente equal valued for com	oundaries between soil types and the transition may be gradual or of groundwater may occur due to factors other than those pres- ocentrations or ug l'collected using Industrial Test Systems Arso abmitted to a laboratory for testing. Please see tables for laboratoriste or "G" for a discrete grab sample cable—NR=No Recovery—bgs below ground surface ags abo	ent at the time meas one Quick Test Kits ory data	mement	ompleted a	iti de

1	and a	905B S	reign (South M ield, Ma	ain Str	cet			Boring Well ID: SHM-10-07			Shee	(2 of 3
ro; ro;	nt: ject!	lumber:	USACT SHL - I AC001 Fort De Ayer, M	i fort Dev evens 4A	cens			Drilling Co., Boart Longycar Drill Rig: Mini Sonic Drill Method: Rotary-Vibratory Foreman: SCI Inspector: PJV Start Date: 5/19/2010	Type Sizel Size 6" Hamm NA1 Casin	nei hs	exation	Sampler Core Barrel 60" Fall NA" 1 246.59 - NGVD 29'
1						2	ted	Completion Date: 5/20/2010	Surfac	70000		
Depth	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Water Detected		Stratum Change (ft.)		Test	Boring/ Monitoring Wel
1	S-6	60 46	25-30	NA	NA.	S	Ĺ	Sample Description 0"-22" Brown, well FINE TO MEDIUM SAND	Change (n.)	1	III	Construction
8							¥	22"-46" Cray, saturated, FINE TO MEDIUM SAND		2		2" Schedule 40 PVC Ris
,	S-7	60.54	30-35	N.A	NA.			Gray, sagurated, PINU TO MEDIUM SAND	SAND			Grout 2-36
	.5-7	100 24		13.5	35.5			May, summer, Fire 10 MeDion, 3-MO	3.4.0			
	S-8	oh si	35c)m	11	NA.			Diown, saturated FINL 10 MEDICALS AND				
	-	ar B D D D D			Şidi			As Field Testing Results		1		#2 Morie Sand 38-50
	8.0	16 m	40.42	XI	N.V			10°-10° Brown, murst, FINE TO COARSE SAND AND FINE 10°-25° Brown, murst, FINE TO COARSE SAND AND FINE 10 COARSE, GRAVEL : bitle silt, dense.		2	ШШШШ	2" Schedule 40 PV C
				-				25"-30" COBBLES AND ROCK FRAGMENTS	GLACIAL TILL			40%5(r
	S-10	PD 18	45-50	NA.	N.A			30°-51° Gray, motst. FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, little srit, dense				
			Ti					0-In* Gray mood FINE TO COARSE SASD AND FIXE TO COARSE GRAVEL, little silt dense			THE REAL PROPERTY.	
		Ė			2-1-			367-48" ROCK FRAGAII NIS AND ROCK DUST V 14.23 I. = 12 mi	(0) (10) (4 ()	t.		
n e		Literature	lvater no	file same	low cond	tieter	Tyen	ra bladder pump		Ker		Cement
			umple colli								H	S Dall Cunnigs Native Soils
1177	arks	1) Stratiff times and 2) Field were coll	ander cor As testing ected at th	nditions st values rep e same de	tated Floresent are pth inters	ictum seme al an	tions com d su	indures between soil types and the transition may be gradual α of groundwater may occur due to factors other than those preservations in $(g,1)$ collected using bidiestrial Test Systems Assembly to a laboratory for testing Please see tables for laboration of G^* for a discrete grab sample.	mi at the time meas me Quick Test Kits	surem	enis wer	etect at e-made.

Clie	100	905B S Mansfi	reign (outh M eld, Ma USACE	ain Str ssachu	reet	Inc		Boring/Well ID: SIIM-10-07 Drilling Co.: Boart Longyear	Caso		She	et 3 of 3	Sampler	0	
Proj Proj	cet	umber:	SHL - I AC001 Fort De Ayer, N	ort Devens				Drill Rig: Mini Sonic Drill Method: Rotary-Vibratory Foreman: SCI Inspector: PJV	Type Steel Size 6° Hann NA	nei			Core Barr 60" Fall NA"		
			imple It	ıforma			P	Start Date: 5/19/2010 Completion Date: 5/20/2010	Casin Surfac				.59 - NG .6+/- NG		
П	Q	ć. (j.	(Ft.)		Test	Type	beteer	TEMENT THE TREET			d Typ		Standpi		
Depth	Sample 1D	Pen/Rec. (in.)	Interval (FL.)	Blow/6"	Field As Testing	Sample Type	Water Detected	Sample Description	Stratum Change (ft.)	Notes	Test	Boring/			
	S-11	60 45	50-55	NA	NA	ń	_	ROCK FRAGMENTS AND ROCK DUST	Change (it.)	2	$\overline{}$	Con	struction	1	
						П		1* - 5" Thick Rock "Picks" in Button	married.	ľ					
52						H			BEDROCK						
54						H				1					
								END BORING to: 55 FEET	-	-					
56				-		H		The second section of the sect							
			- 1												
58				-		-									
			1												
60						\sqcup									
rë.															
301										1					
							7								
nn.															
68															
			34	-		v.		711 4					u u		
, 70	٠.	X	1 = 3		1.		6				15	V .			
							F								
72															
30															
74															
Note:								a bladder pump	1	Ke		Content		_	
		2) Soil sc 3)	imple colli	ected for	laborator	y anal	1515				1	Dull Cut Fr Bentanti	ings Nanye Gront	S	17
		4)										Sand Screen			
Rema		61	ication li-	ac topour	ant ones	vinal	n Isa	ndaries between soil types and the transition may be grading	d. Water-beestt	L		Riser			
SCITIE	ot n a.	times and	l under cor	nditions s	stated FI	uctual	I Lutte	of groundwater may occur due to factors other than those pentations in ug I, collected using Industrial Test Systems	resent at the time mea-	auren	ents we	re made			

Proj Proj	ent: ject:	umber:	Fort De Ayer, N	Fort Dev	ens		Boring/Well ID: SHM-10-08 Drilling Co.: Geosearch Drill Rig: Geoprobe 661007 Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Type Steel Size 3.25° Hanu NA)	ne nei lbs	Sampler Sampler Geographic Spoon 160° Fall NA°
	q)		mple Ir		Field As Testing	Sample Type	Start Date; 6/29/2010 Completion Date; 6/29/2010	Surfac Wei	ig Elevation te Elevation lihead Type	: 211.6+/- NGVD 29
Depth	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	Blaw/6"		Sample Type		Stratum Change (ft.)	Test	Boring/ Monitoring We Construction
44	5-1	(11) 14		2.9			Tupsoil (4-melies) Brown, moist, FINE SAND, frace medium to coarse san trace salt, (well sorted)	TOPSON.	-	Standpipe is 3' ngs Cement 0-2'
4										
0	S-2	twi str	5+10	NA	NA.	H	Brown, morst, MEDIUALTO COARSE SAND, trace sol fine sand, with rock fragments Brown, morst, FINE SAND, trace medium sand and silf	SAND		
*							Brown, moist. Pline SAND, trace medium sand and suff Brown, wer, MEDIUM TO COARSE SAND, some grave			1 5" Schedule 40 PVC I
10			i i			2	(sub-rounded)			
18	\$4	M) 50	(H-15	N1	**		http://www.wet.ENETOAMEDRALSAND.fraceso As Liebt Testro: Results	0.		
11							11 The gray MDBI M [DL(11681 & ASI)] 0.15 Triving 3 and 5 27 - DaY (in account 1d) of the galaction connection 27-50 Brown, summed FIM SAND			
de.	S-1	no to	15-2n	NA .	37		Brown saturated PINES VND some medium said trac	s AND		
18										
20	1				X X		* ***	* * ** * * * *		Grout 2'-41'
22	3-7	DILYMX	-01-03	84	13		One proving similated ALEDICAL (O.C.)ARSE SAND gravel (sub-rounded) As Field Testing Results	SAND	1	
							Hower samuated MEDICACTO FINE SAND trace con- stand Contribution of CAMPINE SESSION FOR SESSION OF	ise		
							Garish brain, SASD, will sorted. Wet			
Non			Push grou divater pro				mulacted on (c.3. 10 ?		Key S	Cement Drill Currings Stative Soils Bentomite Grout Smal Seriem Ruser

	nt: ect:	umber:	ield, Ma USACE SHL - F AC001 Fort De Ayer, M	i Fort Dev evens 1A	vens			Drilling Co.: Geosearch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Casin type Steel Size 3.25° Hamir NA II	1 (2)		Simpler Geoprobe Spoon 50° Fall NA°
1	8	11	imple Ir		Field As Teating uoit	Type	patoata	Start Date: 6/29/2010 Completion Date: 6/29/2010	Surface	e El	evation evation id Type	211 6+/- NGVD 29'
Depth	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"		Sample Type	Water Detected	Sample Description	Stratum Change (ft.)	Notes	Test I	Boring/ Monitoring Well Construction
20	S-6	60/14	25-30	NA	NA			Light brown, saturated, FINF TO MFDIUM SAND, (race silt, (percent of fine sand increasing with depth)				
28		-										1 5" Schedule 40 PV C 10
30	S-7	60/27	30-35	N.A	NA			Light brown to gray, saturated, MEDIUM TO FINE SAND.	S:AND			
32					5			trace sift and coarse sand As Field Testing Results		1		
34												620 620 630 630 630
ñ.	S-8	167 ==	45. ga	×A.	383			Fight brown satingled FINE SAND place silt Light brown saturated AH:DRM SAND mass time said				Grout 2'=U'
30							Ī	Brood samiated TIN 5 WH frace an	SASD			
42	S-0	old 15	49645	N1	27		1	Brown, saturated AIFDILALTO COARSE SAND trace gravel fine sand and sill As Freld Testing Results		2		
					3			Orange brown, saturated, MEDIUM TO COARSE SAND AND GRAVEL, (sub-angular to sub-rounded)				Bentonite 41'-43'
44	S-10	60 70	45-50	NA	NA.	1	9	Binwn, saturated, MEDIPALTO COARSE SAND, some	61 19 15 44			#2 Morie Sand 43'-56'
46				1		-		gravel (angular)	SAND		E	
48			Ħ					Brown, saturated, FINE SAND, some medium sand, trace sift				1.5" Schedule 30 PVC Well serven (0.01" shit
sa												
Notes			Push grou dwarer pro					nducted on to 3-10		Ke	, <u>%</u>	Cement Drill Cuttings Native Soils Bontonite Groun Sand Recen Recen

4 24 8)

TT.	ent:	905B S	reign South M field, Ma USACI	lain Str assachu	cet	Inc.	Boring/Well ID: SHM-10-08 Drilling Co.: Geosearch			Sheet 3		
Pro Pro	ject	1	SHL - AC001 Fort Do Ayer, A	Fort Dev evens MA			Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Casa Type Steel Size \$25° Hamr XXI	nei		Samples Georgiche Spoon 1869 Full NA®	
			ample I	nforma		othe	Start Date: 6/29/2010 Completion Date: 6/29/2010	Surfac	e El	evation: evation: d Type:	214.21 - NGVD 29' 211.6+/- NGVD 29'	
Depth	Sample ID	Pen,/Rec. (in.)	Interval (Fc.)	Blow/6"	Field As Testing	Sample Type		Stratum Change (ft.)	tes		Standpipe ing/ Monitoring Well Construction	
52	S-11	60/30	50-55	N. L	NA 5		Light brown, saturated, FINES VND, some gravel and coarse sand, frace silt. As Field, Lesting Results	SAND	4		£2 Morre Sand 435-56	
54	S-12	24 12	55-57	ŊĄ	NA.	H	Brown, saturated, MEDICM 410 COARSE SAND, some time) 5" Schedule 40 PVC Well screen = 0.01" stot 4n'-56'	
56 58	5.7-1-			1070			Sand. Gray, dry, FINE SAND, some stilt, with took fragments (angular) (Tdl) SAMPLER REFUSAL till 57'	GLACIAL TILL		CA	SING REFUSAL @ 56'	
60					4		As Field Testing Results		14			
12												
(el												
68			41	n _o				-0.55	l v		(= 14)	
70			8-					t Fe		K - 2	-1 310 41	A 18
74												
Not		2) Groun 3) 4) 5) 6)	idwater pr	ofile samp	ler refus	al - <i>a</i> 62			Ke	Dr He Be Sa Se Rr		
Ren	narks	1) Field were eal 3) Samp	d under co As testing lected at the le is design	nditions s values rep re same de nated as e	nated Floresent at optionated other "C"	nematic seme co val and for com	oundaries between soil types and the transition may be gradual its of groundwater may occur due to factors other than those pres- neemations in my L-collected using Industrial Test Systems Arsa inhimited to a laboratory for testing. Please see tables for laborat- iosite or "G" for a discrete grab somple teable. NR-(No Recovery, bys below ground surface ags, also	ent at the time meas mre Quick Test Kits ory data	aneni	ents were mad	le	

Ţ	110	905B S	outh M	Consu lain Str issachu	eet	În	c.	Boring/Well ID: S11M-10-09			Sheet	1 of 3		
	ct	umber:	AC001 Fort De Ayer, M	ort Dev evens				Drilling Co.: Geoscarch Drill Rig: Geoprobe 6610D1 Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Type Ste Size 3.1 He N	is" immei Vlhs		Sample Geoproby S 60° Fall NA°		
-		Sa	imple li	nformat		-	77	Start Date: 6/14/2010			evation:			
П	0	E.	FC		Festin	The	tector	Completion Date: 6/15/2010			evation: d Type:			
	Sample 1D	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Water Detected	Sample Description	Stratun Change (i	i es		Standpi Soring/ Monitori Construction	ng Well	
	5-1	60.35	()-5	NA	NA			Topsoil (6-inches)	TOPSON					
-						-	-	6"-14" Light brown, dry, FINE TO MEDICAL SAND (Orange Tmt)						
-								14"-35" Light gray, moist, MEDIGM TO COARSE SAND AND GRAVEL (rounded), some angular fragments						
-	S-2	60 38.	5-10	NA	NA			(0°-9° Light gray, moist, AIEDRPALTO COARSE SAND AND GRAVEL (rounded), some angular fragments	SAND & GRAVEL					
								9°-38° Brown, moist, MEDIUNI TO COARSE SAND AND GRAVEL			l,	NO	,	
												WEI	6J.	
	S-3	htt öb	10/15	XA	.XA			0° 28° Brown, div. FISE TO AIL DICM SAND, some gravel (sub-rounded) 28°-17° Brown, moist × AND AND OR WELL (connided) some quantar rock fragments	SANDA					
L								k Ban (->= 1(i) 5 () €)		i				
	8-4	60 M	15/20	ÑĀ	NA			0"-12" Light Copy moist FINES AND, monthed)						
								12"-15" GRAVEL AND ROCK FRAGMENTS 15"-31" Brown, moist to wet, FINE SAND						
		+ 1 4		411				7 - 4 1 11	SAND &		0.0	of a Maria		
			11-2-5			50	¥	ar made to a second	GRAVEL			1.0 1 1		-
-	8-9)	in in	20-23	157	5.1			o - t - Brown saturated FEM ACCOPKSL SANDAND GRAVET - (well sorted) As Field Testing Results						
-								10°-30° Brown sammest FINE SAND						
-					-	H								
nor		2) Ground 3) 4) 5) (4)	dwater pro	ifile samp	ler refus.	il ar	82'	inducted on 5.28 (0.8; 6.1.10) As 5 ag 1, it 81* undaries between soil types and the transition may be gradual.		K		Sand Screen Riser	e Soris	

7	112	905B S	reign (louth M ield, M:	lain Str	reet	Inc.	Boring Well ID: SHM-10-09			Sheet 2 of 3
ro	nt: jeet: jeet N ation	umber:	USACI SHL - I AC001 Fort Do Ayer, M	Fort Dev evens MA			Drilling Co.: Geoscarch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Forenam: Rodney Kaddy SCI Inspector: Danielle Fastman	Tape Steel Size 3.25" Hamm NA Ih	ei 15	Sampler Geograbe Spoon 60° Fall NA°
	0			mor ma		ype	Start Date: 6/14/2010 Completion Date: 6/15/2010	Surface	Hile	evation: NA evation: NA d Type: Standpipe
ndaa	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	advil aldmes	Sample Description	Stratum Change (ft.)	Notes	Test Boring/ Monitoring Well Construction
,	S-6	0E 0a	25-30	NA	NA		Light brown, saturated MEDICALSAND, some coarse sand			
	S-7	60/16	30-35	N.A	NA 5		Light brown, saturated, MEDRIM TO COARSE SAND, (well sorted) As Field Testing Results	SAND	x	
	S-8	rm 23	3540	N.V.	84		Fight brown solidated All Off ACCOMENT SAND, (well makel)			SO WILL INSEMLER
								\$1513		
	S.0	h0 26	10.45	NA	SA 5		Fight brown samuared ME(DIFM SASD), some course sand twell sorted). As Field Testing Results.		1	
						N				
I	1		8			H		(A4-4*	1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	S-10	60.32	45-50	NA.	9/1		Brown sammaed PINE TO MEDIPALSAND AND SILE fittle course sand	SAND		
	1									
te	's						conducted on 5.28 10 & (c. 1.10) As = 5.0 <u>c.</u> 1, <i>n</i> /817		Key	Drill Cuttings Native Soils Heatoute Grout Sand Sereen
11	arks:	1) Strant times and 2) Field were coll 3) Sampl	d under co As testing lected at the e is design	nditions s values rej re same do nated as e	stated Fl present ar epth inter other "C"	netuati serie e val and for con	numbraries between soil types and the transition may be gradual. In soil groundwater may occur due to factors other than those presencentiations in ug.1 collected using Industrial Test Systems. Assets aubmitted to a laboratory for testing. Please see tables for laborate mistic or "G" for a discrete grab sample reable. NR. Na Receivery, best below ground surface are also	ent at the time meast are Quick Test Kits ary data	areme	ents were made

1		905B S	reign (louth M ield, Ma	ain Str	eet	Inc.	Boring/Well ID: SIIM-10-09			Sheet 3 of 3
ro	nt: ject; ject N ation:	umber	USACT SHL - I AC001 Fort De Ayer, N	ort Dev evens 4A			Drilling Co.: Geoscarch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Type Steel Size 3.25" Hamm NATb	er os	Sampler Geoprobe Spoon 50° Fall NA°
1			imple li	normat		7	Start Date: 6/14/2010 Completion Date: 6/15/2010	Casing Surface		evation: NA
	2	.c. (in.	1 (Ft.)	2.	S Test	Type	0.7.72.70		head	d Type: Standpipe
undaer	Sample ID	Fea./Rec. (in.)	Interval (Ft.)	Z Blow/6"	Eteld As Tosling	Sample Type		Stratum Change (ft.)	Notes	Test Boring/ Monitoring Well Construction
2	asili.	1WI 25	30-33	MI SI	- 5		Brown, saturated AIED/UNTTO COARSE SAND, some- gravel (tounded) As Field Testing Results		i.	
										NO
-	S-12	60/33	55-60	NA	NA .		0°-4° Brown, saturated FINE SAND, trace silt 9°-33° Brown, saturated, COARSE SAND, some grave	SAND		WFLI INSTALLED
							(angular)			
	S-1.0	00 20	olistiğ.	NA.	N.Y		Grev saturated FINF SAND some took bagments fangular (GII ACTAI		
					1.2		(1904) A-Freld Festing Results	(10)	1	
1										
							SAMPERRED SAU a 65°			CASINGRITISM it 65
	- x		9					The ga		6
	k		44	3				* V.		4 59 4
					(3)				ř	
•										
te	7	l) Direct	Push grou	indwater j	molile sa	mplag	ronducted on 5.28.10 & <i>tr</i> 1.10		Kes	Centent
		2) Groun 3) 4) 5)	dwater pro							Drill Cuttings Native Soils HB Bentonire Great Sand Sereen
***	arks:	times and 2) Field : were coll	l under cor As testing ected at th	nditions s values rep e same de	tated Fl present ar epth inter	uetuatio seme ec val and	oundaries between soil types and the transition may be gradual as of groundwater may occur due to factors other than those pres- ncentrations in ug l-collected using Industrial Test Systems Arse admitted to a laboratory for testing Please see tables for laborations to site or "G" for a discrete grab sample.	em at the time measi one Quick Test Kits	neme	ents were made

ī	m	905B S	reign (South M ield, Ma	lain Str	eet	Inc	Boring/Well ID: SHM-10-10		She	et I of 3
Pro	ject:		AC 001 Fort Do Ayer, M	Fort Dev evens AA			Drilling Co.: Geosearch Drill Rig: Geoprobe 6610DT Drill Method: Direct Posh Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Casi Type Steel Size 3.58" Hann: NAT	nei bs	Samples Chappubs Spacen carr Fall NA [†]
	0	100	ample li Z	nformat		ads	Start Date: 6/2/2010 Completion Date: 6/3/2010	Surfac	g Elevatio e Elevatio lhead Typ	in: 215.0+/- NGVD 29'
Depth	Sample ID	Pen/Rec. (in.)	Interval (Ft.)	Blaw/6.*	Field As Testing	Sample Type	Completion Date: 6/3/2010 Sample Description	Stratum Change (ft.)	₫ Test	Boring/ Monitoring Well Construction
2	8-1	60/21	(1-5	NA	NA		Topsol (Genebes) Light brown, dry, FINE TO AHEDICAL SAND, some guivel	TOPSON.		Standpipe is Y age Cement 0-2
4 4	S-2	60/29	5-10	NA.	NA		Light brown, dry, COARSh SAND AND GRAVEL, some medium sand, trace time sand.	SAND & GRAVEL		
ta Ta	S-1	-00.22	10-15	127	NA 5		U*-14" Light brown alex AlEDH M RECEARSUS AND AND GRAVEL to the fine sont Aveloded testing Results 14 = 2 42 + 0 = 600 (0.0488) + y (2000 (0.0488) + 1000 (0.0488) y + 14 2 + 0 = 0 = 600 (0.0488) + y (2000 (0.0488) + 1000 (0.0488) y + 14 2 + 0 = 0 = 600 (0.0488) + y (2000 (0.0488) + 1000 (0.0488) y + 14 2 + 0 = 0 = 600 (0.0488) + y (2000 (0.0488) + 1000 (0.0488) y + 14 2 + 0 = 0 = 600 (0.0488) + y (2000 (0.0488) + 1000 (0.0488) y + 14 2 + 0 = 0 = 600 (0.0488) + y (2000 (0.0488) + 1000 (0.0488) y + 14 2 + 0 = 0 = 600 (0.0488) + y (2000 (0.0488) + 1000 (0.0488) y + 14 2 + 0 = 0 = 600 (0.0488) + y (2000 (0.0488) + 1000 (0.0488) y + 14 2 + 0 = 0 = 600 (0.0488) + y (2000 (0.0488) + 1000 (0.0488) y + 14 2 + 0 = 0 = 600 (0.0488) + y (2000 (0.0			1 5" Seliedule 40 PV C Riser 0-56"
13	8-4	60 43	lá-án	81	27		or Cor Light broken, slic. CO VRSE, TO VILDRESE SAND AND GRAVEL.			
18							20°-43" Light brown, wet, COARSE SAND AND GRAVE [aub-angular to sub-rounded), some medium sand			
2		777		7				4 69 . 93		
20	8-5	101 -l	20-25	.3.1	SA. -5		Brown, saturated COARSE SAND AND OR ACLE (sim- rounded to) funded), rock fragments As Field Testing Results	SAMPA GRAVEL	-	Grout 2-5 (*
24										
Nego		2) Choun \$1 4) 5) (a)	dwater pro	atile Samp	ter refus:	i			Key S	Cenent Drill Cuttings Native Soils Hentanite Grout Sand Screen Riser
Rem	arks	fil fil f) Strant times and 2) Field a were coff 3) Sample	l under en As testing ected ar ili e is desigi	nditions s values rep re sume de nated as ci	tated 14 present ar apili oner ther "C"	uctual senic (val and for cor	orundaries between soil types and the transition may be gradualist of groundwater may occur due to factors office float floss procentrations in bg 1, collected using Indicated Test Systems A submitted for a laboratory for testing. Please see tables for laborator for a discrete grab sample theather. NR *No Recovery hers forlow ground surface are a	resent at the time meas rsenic Quick Test Kits ratory data	mements we	Screen Riser leted at the made

m	m	905B S Mansfi	reign (South M ield, Ma	lain Str issachu	eet	Inc.	Boring Well ID: SHM-10-10			Sheet	2 of 3
Pro	ject	lumber	USACI SHL - I AC001 Fort De Ayer, N	ort Dev			Drilling Co.: Geoscarch Drill Rig: Geoprobe 661017 Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector: Danielle Eastman	Using	ner		Sampler Geopriste Spoon 140* Fall NA*
			imple fi	nforma		pe	Start Date: 6/2/2010 Completion Date: 6/3/2010	Surfac	e El	levation: levation:	215.0+/- NGVD 29'
Depth	Sample ID	Pen,/Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Provide National	Stratum	stes	Test E	Boring/ Monitoring Wel
20	S-6	60 15	25-30	NA	NA.		Sample Description Brown, saturated, COARSE SAND AND GRAVEL (sub- rounded to rounded), rock fragments	Change (ft.)	1		Construction
28								SAND &			
30								GRAVEI	ł		
32	S-7	60/15	30-35	NA	NA 15		As Field Testing Results Brown, saturated, COARSE SAND AND GRAVEL (sub-rounded to (ounded), jock fragments		9		1 5" Schedule 40 PV C R 0-56"
34											
far.	S-8	wi-j=	15alta	27	21		Hrown samural COARSES AND AND OR AVEL paib- emody (100) windest (1984) Institution				
-								>(15)) 16	ļ		
10						11.		GRAVEI			
42	Sin	644.22	40-45	NA	3		As Frield Testing Results Brown: saturated, COARSE SAND AND GRAVEL (sub- rounded to rounded), rock flagments		1		
44				,00 e=							Grout 2551*
			1.3		6			5000	*		
46	S-10	00.33	45-50	NA	NA	Н	Brown saturated MEDIUM TO COARSE SAND some fine sand, trace gravel	SAND			
18						Ш					
30											
Sore			Push grou dwater pro				1 midjested on 6.2.10 & 6.3-10		Ke		FFI Center Drill Cuttings Native Soils Hemonic Grout Sand Servent Riser

min	905B S	eign (outh M eld, Ma	aln Str	eet	Inc.	Boring/Well ID: SIIM-10-10			Sheet 3	of 3
hent: oject: oject N ocation	Number:	Fort De Ayer, N	Fort Dev evens AA			Drilling Co Geoscarch Drill Rig: Geoprobe 6610DT Drill Method: Direct Push Foreman: Rodney Kaddy SCI Inspector; Danielle Eastman	Lasm Type Steel Size 3.25° (Jamin NAII	ier 15		Sampler Geoprobe Sprion 141 ⁹ Fall NA ⁴⁰
H		mple II	nformat		ne or	Start Date: 6/2/2010 Completion Date: 6/3/2010			evation: evation:	217.04 - NGVD 29' 215.0+/- NGVD 29'
Sample ID	Pen,/Rec. (in.)	Interval (Ft.)	Bluw/6"	Field As Testing	Sample Type Water Detected	W. mark and a second	Stratum	head solo.	Test Bo	Standpipe ring/ Monitoring Wel
S-11	60.29	30-55	N.V	12	7 =	Sample Description 0%15% Light brown, sourneed, FINE SAND, race salt.	Change (ft.)	1		Construction Grout 2'-51"
		-+		5	1	Imottled) As Field Testing Results 15°-29° (right brown samuted MEDICAL TO COARSE				Beninmie 51953*
						SAND, trace time sand, (well sorted)	F AND		EFFF JE	42 Mone Sand 53'-06'
S-12	60 18	55-60	NA	NA		Brown, saturated, FINE TO MEDIUM SAND, trace coarse sand	SAND			
S-13	10) 260	60-65	NA	N1	H	As Field Lesting Bosolts		ı		
						67-12 Borren namental FISE HEARTH M SASAC mass craise sand				
-	-	-	-			tragments (angular)		1		1.5" Schedule 30 PV t Well sereen - 0.91" shii
8-14	2415	#5447	27	NA		(mgr pions) (TNI/SAND with cock fragments (mgmbg) (14H)	101 W 1A1			SECONS SINGREFUS AL 11 66
						SAMPLER REFUSAL (# 67*				
:	· ·					The state of the s	g ()			
	0			10.4	Ш	en le le rei il	W 84	X		
				5		As Field Testing Results		1		
tes		Push groi dwater più				onducted on 6.2. (0.8. 6.3-10)		Key		oment bull Cuttings Kanve Soils, contained cuted creen

	icct	lumber:	USACE SHL - I AC001 Fort De Ayer, N	fort Dev			Drilling Co Boart Longyear Drill Rig: Mini Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JICWJW	Casing Type Sieel Size of Hamma NA46	ei	Sampler Core Dariel (d) Fall (A)
		S	mple li				Start Date: 8/3/2010		Elevation	
	e ID	Pen./Rec. (in.)	finterval (Ft.)	4	Field As Testing	Sample Type Water Detected	Completion Date: 8/4/2010	Surface Well	Elevation head Type	: 260.35 +/- NGVD 2 : Standpipe
Depth	Sample ID			Blow/6"		Sampl	Sample Description		Test I	Boring/ Monitoring W Construction
	S-1	60	0-5	NA	NA		Topsad	TOPSOIL.		Standpipe is 3' ags
*					0000		Light brown, MEDICATO COARSE SAND, with pebbles	SAND & GRAVEL		Centent 0-2'
4										
Н		60	5-10	NA.	NA.		Light brown, MEDIUM SAND, with waste			
Tr.	5-2	300	5-7	13.5	1923		Tight blown, ALEDIC ST SAIVE, Will Wasie	SAND & WASTE		
	S-3		7-12	NA	NA.	W	COMPACTED WASTE (paper), some light brown medium			
8						-	sand			
		-								2" Schedule 40 PVC R 0-50"
10		bit	30.15	SV	N.A	+	1			
15										
1	×i		10.00				(-1 + x (3)(sq) = Y ()			
13									i iiii	H
16.	\$5	193	15,80	21	84		Light brown (1) ARSI-SAND, with wood fragments			
18										
			-				F) P 2 4 0 0 00	D 8 8		
20		1000	3624		Sek		Dank involutorages a stabled or and	e ASia		Grant 2:46
	S-6		20-23				Annual Market State of Market State of	-3.1317		
22						-	-			
	5.3		*1.13				1.34 at MODEN SNO			
24						+				
Note	5		dwater pre	ifile samp	ling com	hiered w	th a bladder pump		Kes	Cement Cement
		3)								Drill Cuttings Native Soils Bentomte Grout
		41 51								Sand Screen
Rem	arks	(i) Stratif	ication lin	es represe	orana fue	cimale by	oundaries between soil types and the transition may be gradual	Water level readings	word comple	Riser

m	905B	reign (South M field, Ma	lain Str	eet	Inc.	Boring Well ID: SHM-10-11	8	Sheet	2 of 3
Tient rojec rojec ocati	t: t Number ou:	Fort Do Ayer, M	Fort Decivens			Drilling Co.; Boart Longyear Drill Rig; Min/ Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JIC/WJW	Type PA C Size 6" Hammy NA lb	ci s	Sampler Free Barrel on! Fall NAC
-	1.00	iample h ≩		l'esting tion	ype	Start Date: 8/3/2010 Completion Date: 8/4/2010	Surface	Elevation: Elevation: head Type:	260.99 - NGVD 29' 260.35 +/- NGVD 29' Standpipe
Depth Generals ID		Interval (Ft.)	Blow/6"	Field As Testing	Sample Type Water Derected	Sample Description	Stratum Change (ft.)		oring/ Monitoring Well Construction
5 S	500	25-30 25-33	NA	NA	H	Light brown, COARSE SAND			
8							1		
h							SAND		
-	602	30-15	NA	N.A.	H	1			
2									2" Schedule 40 PVC Riser 0-50"
S-	.g.	33-35				Light brown, FINE SAND			
	rae	75-Hr	*1	31		SURTROSTRY			
İ				-80		As Freld Testing Results	5-(81)		
-	100	4(1-15	7.1	20	H				
S .	(6)	50-53			Ш	Light brown, COARSE SAND (speekled)			
	-								Grom 2'46'
*	60	¥\$.5()	NA	NA.		e produce and a second	SAND		
-									Bentonne 46'-48'
N _				711		As Pield Festing Results			Violet & Sould Street
nes.		idwater più	ifilė samp	junk cond	ucted w	rth a bladder primp			Cemen
	2) 3) 4) 5)								Ordf Cottogs Naive Sints Bentomie Graat Sand Sergen
marks						nundaries between soil types and the transition may be gradual is of groundwater may occur due to factors other than those pre	CONTRACT STATISTICS AND ADMINISTRATION OF THE PERSON OF TH	were complete	

	nt; ect:	umber:	ield, Ma USACE SHL - I AC001 Fort De Ayer, M	ort De vens 1A	vens			Drilling Co.: Boart Longyear Drill Rig: Mini Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JJC/WJW	Expc (N) Size (F) Hammer NA (I)	nei		Nample (Are Baroll 60° Fall NV
	9		imple Ii			lype	pataeted	Start Date: 8/3/2010 Completion Date: 8/4/2010	Surface	e [i]	evation: evation; id Type:	260.99 - NGVD 2 260.35 +/- NGVD Standpipe
Depth	Sample 1D	Pen/Rec. (in.)	SC-09 Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Water Detected	Sample Description	Stratum Change (ft.)	_		ring/ Monitoring V Construction
52	9	60	30.55	NA	6 -							2" Schedule 40 PVC Well screen - 0 01" sl. 50'-60"
54												
56	S-11	MI	55-60	NA.	NA			Light brown, MEDICM SAND	SAND			
38												
60					150			As Field Tesning Results	GLACIAL	1		
10	8/12	.60	AGE 5	NA.	NA			GLAC(A), THE over lying Bedrock HEDROC & approximately of their	(11)			
fe l					u			As field Testing Residis	titibe n i_	1		
telt								LND OF BORING 65 FFEE		ĺ		
68												
70		1	. 1			à	-	#	A		ev e	2 72
72												
7.4												
Note	s	1) tiroun	dwater pre	file sam	ding con-	ducter	distri	fra bladder pungs		Ke		ement
		2) 3) 4) 5)						Annual Louis				onth Cuttings Native Sort entonne Grout and creen

T	1141	905B 5	South N	Consu Iain Str assachu	cet	Inc	Boring Well II	D: SHM-10-12		Sheet	t f of 3
Pro Pro	ent: jeet; jeet N ation	lumber:	USAC SHL - AC001 Fort D Ayer, I	E Fort Dev evens MA	ens		Drilling Co.: Drill Rig Drill Method: Foreman; SCI Inspector:	Boart Longyear Mini Sonic Rotary-Vibratory Fred Lavoie JIC/WJW	Uasii fype Steet Size 6° Flamm NA fl	ner	Sampler Core Barrel 60° 4'all N.V°
	Q			nformat		Lype	Start Date: Completion Date:	8/5/2010 8/9/2010	Surfac	g Elevation e Elevation lhead Type	251.41 +/- NGVD 29'
Depth	Sample 1D	Pen/Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Completion Date:	nple Description	Stratum Change (ft.)		Boring/ Monitoring Well Construction
	Sil	till	11.5	NA	27		Topsoil		ropson.		Standpipe is Tags
14							Dark brown (5Y 4/3), 5	SAND (poorly sorted)			Cement 0-2'
6	S-2	60-	5-10 5-9	NA	NA		Light grey to dark gray debris	(5Y 5 1), SAND AND ASH, some	SAND & ASH DEBRIS		
8	S-3	(rel):	9-10	NI	NA		Light brown (5Y 7/2), Ash So recovers	MEDIUM SAND (poorly sorted), some			2" Schedule 40 PVC Riser 0-45"
10	8-5	/m	15-20 15-17	NA	XX.		Light brown, (5Y 8/3).	MEDICM SAND (proofly sorted)			
18	5-0		17-20				Light brown, (5Y 8/3),	MEDIUM SAND			
					Vo.			1 4 4 2 ×		I III .	
20			1 *							-	Grout 2'=11"
22	5-1	OUT	الأيمان	27.7	Sel		1.1800 (0000015-2-9-3)	TIMES AND (well sorted)	SASD		
24											
Nut	2%	1) Groun 2) 3) 4) 5)	I idwarei pi	pfile samp	lmg cena	I L Incred	sult å bladder pump			Key S	Cement Onli Cuttings Native Soils Hemonite Cront Sand Sereen Riser
Ren	arks	1) Stratit	l under ec	onditions s	naed 19	netuati	ons of groundwater may be	pes and the transition may be gradual " ear due to factors other than those presi-	ent at the time meas	mements were	red at

were collected at the same depth interval and submitted to a laboratory for testing. Please see tables for laboratory data.

3) Sample is designated as either "C" for composite or "G" for a discrete grab sample.

• Approximate water table —NA Not Applicable —NR No Recovery bys-below ground surface ags-above ground surface.

Sovereign Consulting Inc. 905B South Main Street Mansfield, Massachusetts Boring/Well ID: S11M-10-12		Sheet 2 of 3
nt: USACE Drilling Co.: Boart Longyear eet: SHL-Fort Devens Drill Rig: Mini Sonic eet Number: AC001 Drill Method: Rotary-Vibratory ation: Fort Devens Foreman: Fred Lavoic Ayer, MA SCI Inspector: JJC/WJW	Type PAC Size h ⁿ Hamme NA lb	Core-Harry 60° er Fall
Sample Information Start Date: 8/5/2010 Sompletion Date: 8/9/2010		Elevation: 254,39 - NGVD 29' Elevation: 251,41 +/- NGVD 29'
Sample Description Sample Description Completion Date: 8/9/2010	Stratum	head Type: Standpipe Standpipe Standp
Z Z E E Z S Sample Description S-8 60 25-30 NA NA Tight brown (5Y 8 2). MEDICAL SAND (well sorted)	Change (ft.)	Construction
\$59 607 30-35 NA NA Light brown (5Y 8/2), MEDIUM SAND (well sorted)	SAND	2" Schedule 40 PVC Riser 0-45"
S-16 (ii) V-16 NA NA Grey Drown to medimoraley (AV to 11 MI DIII ALS AND		
760 40-45 NA NA Unghi Gues (5 V to 2) AH-DH M SAND	*\\$0=	
No.11 (0:42)		Bentomte 41/43
Medium grey (5Y 6 2), COARSE SAND (well sorted)		
> 500 As Field Testing Results) 8 m = 105.	#2 Morre Sand 43'-55'
5-13 45-52 NA NA Medium erec (SV 6.2) COARSE SAND medium in	SAND	
Medium grey (SY 6.2) COARSE SAND (well smited)		
		2" Schedule in PVC (0.79 mag and 1.6) 43555
(1) Groundwater profile samphing conducted with a bladder pump 2) 3) 4) 5) 6) (a) 1) Stratification lines represent approximate boundaries between sorl types and the transition may be gradu.		Key Cement Drill Cornings Native Soils Hermanite Gront Soild Sereen Riser

7	m		reign (South M ield, Ma	ain Ste	cet	Inc.	Boring/Well ID: SIIM-10-12			Sheet 3 of 3					
Pr	ient oject oject catio	Number	USACT SHL - I AC001 Fort De Ayer, N	ort Dev	vens		Drilling Co.: Boart Longyear Drill Rig: Mini Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JJCWJW	Type PVC Size 6" Hamm NA 16	ner		Samplet Core Bairel (8)** Fall NA**				
	-		ample It	iformat		pe	Start Date: 8/5/2010 Completion Date: 8/9/2010	Casing Elevation: 254.39 - NGVD 2 Surface Elevation: 251.41 +/- NGVD							
Depth	Sample ID	Pen./Rec. (in.)	Interval (FL)	Blow/6"	Held As Testing	Sample Type Water Detected	Sample Description	Stratum Change (ft.)	Notes Sales	Test Bori	Standpipe ing/ Monitoring Wo Construction				
32		(1/1)	5(7-5-5	NA	NA.						#2 Morie Sand 43'-55'				
54	S-1		52-55				Light brown (5Y 8 3), MEDRIAI SAND				2" Schedale 40 PVC Well screen - 0 01" slot				
56	S-1	5 60	55-60	NA	>500 NA		As Field Testing Results Light brown, (5Y 8-3), COARSE SAND	SAND			45'-55'				
58															
66	S-I	o ot	50-65	NA .	NA:		GLACIAL HILL	66-XCIVI							
n2								38.1							
64					30		As Field Testing Results		t						
706		60	(+5-7()	12	8.1		GLACIAL BLI overlying Bedrock BEDROCK approximately 70 feet								
68											ar w				
70	4						I SDOT BORISO WITEI	BEDROCK			-				
72															
7-1															
No	tes	1) thom 2) 3) 4) 5)	idwater pre	offic samp	I ling conc	fucted wi	h a bladder promp		Kes	Di Ber	een				

T	m	905B 5	reign (South M ield, Ma	ain Str	eet	lne,	Boring/Well ID: SIIM-10-13		Sheet L of 4
10	jeet:		USACE SHL - F AC001 Fort De Ayer, M	Fort Dev evens 4A			Drilling Co.; Boart Longyear Drill Rig. Mini Sonic Drill Method: Rotary-Vibratory Foreman Fred Lavoic SCI Inspector: JJC/WJW	(38)) Type Steel Size of Hamo NA II	Core Barel - 60° mer Fall
			ample Ir	ıformat		. 3	Start Date: 8/9/2010 Completion Date: 8/10/2010		ng Elevation: 244.52- NGVD 29 ce Elevation: 241.18 +/- NGVD 2
	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	9/	Field As Texting	Sample Type		Well Stratum	Ilhead Type: Standpipe 2 Test Boring/ Monitoring W
nepin	Sall	Pen.	0-5	Z Blow/6"		Nem		Change (ft.)	Construction
	5-1		0-3	N.A.	NA		Medium gray 15Y 7-2), COARSE SAND, with pebbles (poorly sorted)		Standpipe is 3° ags Centent 0-2°
		10	5-10	N/	NA			SAND	
	\$-2	10/	5-8	17/1			Dark gray (SY 6.2), COARSE SAND		
	S-J		8+10-				(5V 7-2), COARSE SAND, with wood and ash	SAND & ASH	2º Seiredule 40 PVC R
1	8.1	(4)	1045 1041	NA.	NA		Ureht grav (5V 7.2) CO ARSE SAND, with pebbles		
	**		R)			H	f=3a (Y ¬ ≥) Mr.Dif(M > VXI) compγ×γγγ	SAND& OR W [1]	
							-		
	Sati	iar .	15-20 15-17	27	54		Fight (SY § 2), MEDIUM SAND, with pebbles	<u> </u>	
	S-7		17-20				Light grey (5Y 8/1), FINE SAND		
			13	1,4	1.5		free or the time of the second		4
	-1	2 -		(100 m)	4		the man state of the state of t		Grow 2'-56'
	S-8	4.63	20-23	21			Light brown (SV 6-2), MEDIUM SAND	CANTA IGUA	
	S.0		23-25				Dark grey (5Y 5-1), ALLOH ALSAND, with ash and class	SAND, ASH& DEBRIS	
He		1) Greens 2) 3) 4) 5) 6)	dwater pro	ofile samp	ding von	Incled v	ab a Madder pump		Key Centen Drill Cultings Native Soils
71	arks	1) Stratif times und 2) Field were coll 3) Sample	I under con As testing lected at the e is design	nditions s values rep le same de lated as ei	tated (f) present ar gith inter other "C"	netuano seme er val and for com	numbries between soil types and the transition may be gradual ins of groundwater may occur due to factors other than those pies neentrations in u.g.t. collected using Industrial Test Systems Aiso admitted to a laboratory for teating. Please see tables for laborat- iosite or "G" for a discrete grab sample teable. NR-No Recovery. has below ground surface ags. abor	ent at the time meas one Quick Test Kus ory data	surements were made is Additionally, samples

ri	1117	905B S	reign (South M ield, Ma	ain Str	eet	Inc.	Boring Well ID: SIIM-10-13		S	sheet 2 of 4
Pro	ject:		USACT SHL - I AC001 Fort De Ayer, M	ort Dev vens 4A			Drilling Co.: Boart Longyear Drill Rig: Mim Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JOC/WJW	Cisu Type PV(Size 6" Hamn NA II	nei hs	Samples Core Bairel 60° Fall NA°
		Toy.	ample Ir	iformat		. 3	Start Date: 8/9/2010 Completion Date: 8/10/2010	Casin Surfac		ration: 244.52- NGVD 29' ration: 241.18 +/- NGVD 29'
	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	1.9)	Field As Testing	Sample Type Water Detected				Type: Standpipe Fest Boring/ Monitoring Well
Depth	Samp			Blow/6"		Sump	Sample Description	Change (ft.)	13	Construction
20.	S-10	60	25-30 25-27	NA.	NA	,	Brown (5Y 8/2), MEDIUM SAND	SANO	1000	
28	\$1)		27-30	-			Dark brown (5Y 4-2) PF-XF (thick)			
36						Ш		PEAT	1000	
	S-12	602	30-35 30-32	N/	NĄ		Dark brown (5Y 4-3), PEAT, with medium SAND		1000000	2" Schedule 40.PN C Ryser
32	8-13		32-35			Ħ	Medium brown (5 V 5-6), PEAT, with medium sand, (less peat 25%)			0-60,
34						Ш			1	
11	54)	14)	(45-4) r	×v	NA.		Medium forma gres (5Y o 2) MBHI MS XXII (vell sorred)	SANIE	Terrandom Co.	
					žu.		As Field Testing Results		-	
40.	S-15	ter	40.45	M	×1		Medium brown grey (5Y (c2) TTV1 SAND (well sorted)		10000	
42						H			1	Grout 2556
44				-	-					
40	3.	60	45-50	NA	N.A		POOR RECOVERY	SAND		
40										
48					· o		As Freid Josting Results		-	
Note	US		idwater pre	ofile samp	ling com	lucted w	uh a bladder pump		Key	Cemen
		2) 3) 4) 5)								Drill Curnings Native Stals HH Bentonite Circuit Sand Sereen
Ken	_	0)	Beatian lin	es represe	ent appro	ximate h	oundaries between soil types and the transition may be gradual	Water level reading	s were i	Roci
		2) Field were col	As testing lected at th	values rep e same de	resent a opth inter	seme co val and s	ns of groundwater may occur due to factors other than those pres recentrations in ug L collected using hidustrial Test Systems Arso abmitted to a laboratory for testing. Please see tables for laborations in "G" for a discrete grab sample.	me Quick Test Kils		

Pro	roject SHL - Fort Devens Froject Number: AC001 Frozention: Fort Devens Fort Devens Ayer, MA Sample Information S				0.00			Drilling Co. Boart Longyear Drill Rig: Mini Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JJCWJW	Costing Sample Type PYC Core Barrel Size it our Unimmer Fall NA lbs NA*					
				itornia			para	Start Date: 8/9/2010 Completion Date: 8/10/2010	A STATE OF THE PARTY OF THE PAR		evation: evation:	244 52- NG 241 18 +/- N		
Depth	Sample ID	Pen/Rec. (in.)	fateryal (FL)	Blaw/6"	Field As Testing	Sample Type	Wafer Detected	Post No. 1 de	Stratum	fes	d Type: Test Bo	Standp ring/ Monitor		
Ť	Sale	(10)	50-55	K1	1.7.	Ť	٦	Sample Description Light brown grey, (5Y 8-1), FINE SAND (well sorted)	Change (ft.)	1		Constructio		
52		-	0)									Ciron P-316		
									8					
54														
									SAND	L				
56		(6)1	55-60	NA	NA									
	S-17		35-67					Light grey (5Y-7.2), COARSE SAND		13		Rentomte 50%		
58														
	-											#2 Morie Sand		
60		60	0045	N-V	100			As Field Testing Results		X				
		(00)	none.	NA	1:1				SAND					
n5.														
										V		1		
14-4												2" Schedule II Well sereen = (
		DX)	05-30	XX	3.1							100-700 100-700		
140							H							
	S-18		67-70				J	Light brown yellow (5Y 8.3), FINE SAND						
68		-												
	eep to	-		*	>500			As Field Testing Results		1.				
70		žn _k	īmī.	35	100					-				
77	S-19		70-72					Medium brown (5Y 7-3), MEDIUM SAND, with pebbles	SAND &					
72							H		GRAVEL					
74	s.		13					Hat promises (A = 10 MHH d s (AH mas only).						
1.7														
Note		L) Circum 2)	dwater pis	tile sang	ling con	lucte	dan	h a bladder pump		Kes		ement		
		31									11	Orlf Cuttings Nate tentomite Grant		
		5)										and creen		
Rem	arks	1) Stratif	ication Im	es represi	ent appro	xunal	e ho	undaries between soil types and the transition may be gradual s of groundwater may occur due to factors other than those pres	Water level readings	s were	e completed	at		

nt: cet: cet: diaplames	t: t Number: on:	USACI SHL - I AC001 Fort De Ayer, N		vens		Drilling Co.: Boart Longycar	Casi	1111			
S-21	Si		/A			Drill Rig. Mini Sonic Drill Method: Rotary-Vibrator Foreman: Fred Lavoie SCI Inspector: JJC/WJW	Type PV(nei	Sample Cote Bat 60° Fall NA"		
S-21		imple fi	nforma			Start Date: 8/9/2010			evation: 244.52- NGVD 29		
S-21		g		estin	be.	Completion Date: 8/10/2010			evation: 241.18 +/- No		
S-21	Pen./Rec. (in.)	Interval (Ft.)	9/	Field As Testing	Sample Type				Test Boring/ Monitori		
	Pen./	Inter	Blow/6"	Field	Sam	Sample Description	Stratum Change (ft.)	Not	Construction		
	60	75-80	11	N.V			SAND &				
8.22	21	75-77				Medium brown (5Y 7-4), AHEDRUM SAND, with pe					
8.22								1			
	32	77-80				Medium brown (5V 7-2), MEDICM SAND	SAND				
				20		As Field Testing Results		1			
	00	80-85	NA	NA		GLACIAL PILL (5Y 8 3)	GLACIAL				
							311.1.				
	7	p = 0									
							1				
	-	-				BEDROCK		1			
	24	85-87	357	NA		1,000,000	DEDROUS				
							III DKOV IS	1	1		
		J = i									
				12		EXDOR HORINGS* LEET					
	4										
									1		
_						4					
	-	-									
	13,	41.4	5.			miller .		-	0.00		
					-	1 10 -1 to 10 11	1 18 at		. (2 2 2 2		
			-					1			
				- 1							
	+			1	1	-					
									1		
	I I I I I I		P. Nore								
	1) Cironn 2)	dwaler pro	tile samp	ling conc	lucted v	odt a bladder pump		Ke	Drill Cuttings Nativ		
	3)								H Bentonte Grout Sand		
	5)								Screen		
		ication lin	es represe	ent appro	ximate l	noundaries between soil types and the transition may be	gradual Water level reading	s wer	Rusei re completed at		
		1) Group 2) 3) 4) 5) 6)	1) Groundwater pro 2) 3) 4) 5) 6)	1) Groundwater profile samp 2) 3) 4) 5) 6) 1) Stratification lines represtimes and under conditions s	1) Groundwater profile sampling conc 2) 3) 4) 5) 6) 1) Stratification lines represent appro- times and under conditions stated. Fl	1) Groundwater profile sampling conducted w 2) 3) 4) 5) 6) 1) Stratification lines represent approximate b	1) Groundwater profile sampling conducted with a bladder pump 2) 3) 4) 5) 6) 1) Stratification lines represent approximate boundaries between soil types and the transition may be times and under conditions stated. Fluctuations of groundwater may occur due to factors other than	1) Groundwater profile sampling conducted with a bladder pump 2) 3) 4) 5) 6) 1) Stratification lines represent approximate boundaries between soil types and the transition may be gradual. Water level reading times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time mean	1) Croundwater profile sampling conducted with a bladder pump 2) 3) 4) 5) 6)		

T	111	905B 5	reign South M ield, Ma	lain Str	cet	Inc	Boring Well ID: SHM-10-14		Sheet	11 of 4		
'ro	ent: ject: ject h ration		Fort Do Ayer, M	Fort Devens			Drilling Co. Boart Longyear Drill Rig: Mint Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JJC/WJW	Type Steel Size 6° Hamine	ei	Samples Core Barrel 160° Fall NA"		
			mple I	nforma		be	Start Date: 8/16/2010 Completion Date: 8/17/2010	Casing Elevation: 237.43 - NGVD 29 Surface Elevation: 234.62 +/- NGVD 20				
Depth	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Completion Date: 8/17/2010	Stratum	head Type Test I	Standpipe Boring/ Monitoring Well Construction		
2	ÿ.	60	0-5	NA MA	NA	Ť	Sample Description Medium brown (SY 7-2) COARSE SAND, with pebbles	Change (ft.)	7.	Construction Simulaipe is Fags		
4	OFF					Ц	(poorly surted).	SAND &		Cenient 0-2*		
								GRAVIII,				
6	Sal	60	5-10	NA.	NA		Medium brown (5Y 7-8), SAND, with pebbles					
										2" Schedule 40 PVC Riser		
CI.	N-3	tali	(0.13	N.V.	12		Medium brown (5V 4-1), SAND, with waste, paper and glass					
4.6							-	2 1 -U/0 2 3×11				
4						H						
ů.	9-3	:00:1	15/20	XA	21		Dark gree (\$Y 4-2), WASTE (paperont glass) with said					
B												
		i	ç	4		,		9 9				
0	97	ide	2 20-33	Sa	53	\square	A CONTRACTOR	111		Growi 2'-56'		
2	S-4		20-23				Dark grey (5 V.4.3), SAND, Ash, waste, glass	SAND, ASH & WASTE				
4			61.5				Merconologia (5A = 5 SASI)					
	5											
(1)	**	1) Groun 2) 3) 4) 5)	dwater più	ifile samp	pué sou	lucted	arik a bladder primp		Ket H	Centent Dull Curings Nanve Soils Heurondy Grant Sand Serven Riser		
em	arks:	1) Stratif times and 2) Field were coll 3) Sampl	l under co As testing ected at the e is design	ndmons s values rep le same de pated as ei	tated [7] present ar pth inter ther "C"	sente o val and for cor	noundaries between soil types and the transition may be gradual- ons of groundwater may occur due to factors other than those pro- incentrations of ug/1 collected using bidustrial Test Systems Ar- submitted to a laboratory for testing. Please see tables for labora- posite or "G" for a discrete grab sample licable NR=No Recovery. bgs: below ground surface ags at	sont at the time meast some Quick Test Kits itory data	irements were	eted at		

mr	905B	reign South M field, Ma	lain Str	eet	Inc		Boring Well ID: SHM-10-14		Sheet 2 of 4	
lient: roject roject N ocation	Number i:	USACI SHL - I : AC001 Fort De Ayer, N	i Fort Dev evens MA	vens		10 10 15 S	Orilling Co.: Boart Longyear Drill Rig: Mint Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JJC/WJW	Casing Type PAC Size 6" Hammer NA ths	Care Barrel 60" a Fall 6 8.4"	
a		ample I	ntorma		Adv		Start Date: 8/16/2010 Completion Date: 8/17/2010	Surface	Elevation: 237,43 - NGVI Elevation: 234,62 +/- NGV nead Type: Standpipe	VD 29
Sample ID	S Pen/Rec. (in.)	Interval (Ft.)	Blow/6"	Freld As Testing	Sample Type	Water Detected	Sample Description		Test Boring/ Monitoring Construction	
	60		39.2)	8.3		+				
S-6		27-10					Sark (5Y, 4.2), PEAT	PLAT		
100										
	607	30-35	NA	NA	П					
S-7		10-31				-	5V 4-4) PEAT AND SAND		2" Schedule 40 PV 0-60"	CRISE
S-8		31-35				10	Sank (SY 4.2), PEAT			
8.9	444	35-(1)	NA.	NA.		10	Oark (55 4 1) PLAT some sand			
				4		X	vs Field Testing Results			
8:10	lite	40-14 40-14	31	27		D	ank Gog (SY 5.) (ARDRALS IN)			
-					H				Grout 2:36	
S-J1		44-46				t.	ight (5Y 8/1), COARSE SAND	F 4		1 16
	600	15-50	NA	NI	3	5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	to y		00
Ş-12		46-53				G	dray (5Y 7/2), FINE SAND	SAND		
							$F(\omega^2 F(k)) ::= H.$			
tes	1) Gran	idwater pro	ofde samp	ling con	Inered	wahr	a bladder pump	_	Key Coment	_
	2) 3) 4).								Drill Connigs Native S HE Bentonite Gront Sand	mls
	51 6d								Screen Riser	
ntes smarks	2) 3) 4) 5) 6) 1) Snate times an 2) Field were col	fication lin d under co As testing lected at Il	ies reproso inditions s values rep ie same do	ent appro- dated Fl present ar	simate uctual senie val and for vo	boundions of concert subm	ndaries between stud types and the transition may be gradual of groundwater may occur due to factors other (han those pr intrations in up 1, collected using Industrial Test Systems A mitted to a laboratory for testing. Please see tables for labor fe or "G" for a discrete grab sample.	I Water level readings vesent at the time measur (secue Quick Test Kils	Drill Cunnigs Native S Hentourie Grout Sand Sereen Reset were completed at rements were made	00

Pro	ent: oject oject N cation		USACT SHL =1 AC001 Fort De Ayer_A ample In	ort Dev evens AA				Drilling Co.: Boart Longyear Drill Rig: Mini Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JJC/W/JW Start Date: 8/16/2010	Casing Sampler						
	Q					ype	rected	Completion Date: 8/17/2010		Casing Surface Well	e El	eva	tion:		237 43 - NGVD 29' 234 62 +/- NGVD 29' Standpipe
Depth	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	How/6"	Field As Testing	Sample Type	Water Detected	Sample Description	100					ori	ng/ Monitoring Well Construction
		(M)	50-55	2.7	NA.										Grant 2-516
52						-									Ordin 2-5m
54	8-14		53-55					Light (5Y 8/2), MEDICAL SAND							
	S-14	60	55-60	NA	NA			Light (5Y 8-2), MEDIUM SAND		SANO					
56						Ī									Bentomte 56'-58'
58					-500			As Field Testing Results			1	H		H	#2 Morre Sand 58'-80'
60	S-15	re(s	00.03	NA	27	H		Light (5V 5.2), FINE SAND				X		-	
12															
(2)															2º Schedulo 40 PV (
	Sette	teks	05.70	SA	SY			Light (5Y 5 2) (1NLS (NL)		8 (ND					Well screen = 0.04" slot off-par
Obc												l			
68				-	>500	-		As Field Testing Results		- 4		X-2228		1 1 3 3	1
70	s-Hi		100	/ do		ā	4	and the man	3	.6		0000			W 1
72	2-1-	one	2040.2	2.1	201			Light (SY 7.2), FINE SANO							
-															
74												8			
None		21 31 41 51						that bladder pump Induces between soil types and the transition may be gradual	1		Ke			Dri Ber San Sen Risa	en en

Mansi	ield, Ma		ect setts		Boring Well ID: SHM-10-14	Sheet 4 of 4				
lumber:	USACE SHL - I AC001 Fort De Ayer, M	ort Dev vens 1A	vens		Drilling Co.: Boart Longyear Drill Rig: Mini Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JJC/WJW	Type Steel Size 6° Hamni NA Ib	ci s		Sampler Core Barrel 60° Fall NA°	
		itorma	tion still	ad	Start Date: 8/16/2010 Completion Date: 8/17/2010	Surface	Ele	vation:	237.43 - NGVD 29' 234.62 +/- NGVD 29'	
Pen./Rec.	Interval (F	Blow/6"	Field .vs T	Sample Ty Water Det	Sample Description	Stratum Change (ft.)	Notes		Standpipe ring/ Monitoring Well Construction	
60	75-80	N.A	NA		Light (SY 7-2), FINE SAND	NAND			π2 Morre Sand 58'-80'	
			-Stite		As Field Testing Results		Ŧ		2" Schedule 40 PA C Well serven = 0.01" slin 60'-80"	
507	80-85	NA	NA		GLACIAL TILL (5Y 8/3)	GLACIAL TILL	ĺ			
							N			
101	X5-90)	NA	NI		GLACIAE III L(\$Y % 3)					
141	*10,215	1.7	- NA.		(HEDROK & (7.5)\ 7.11	BEDROCK				
						+ 74 (1.44		-Ex	alle es a	
	X	Cerns			. 0 2 P	X		# y-	Man a - A Japan	
					END OF BORING 96 FEET					
1) Ciroun 2)	dwater pro	file samp	ling cond	ucted wi	h a bladder pump		Key	222	ement nill Cuttings Native Soils entonite Grout	
4) 5) 6)								S S R	and creen tser	
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Pro	ject:	umber:	USACI SHL -1 AC001 Fort De Ayer, N	Fort Devens			Drilling Co.: Boart Longyear Drill Rig: Mini Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JIC/WJW	Casing Type Steel Size is Hammer NA lbs			Sampler Core Barrel 180" Fall N V*
			imple I	ıforma		, ,	Start Date: 8/11/2010 Completion Date: 8/11/2010	Casing Surface			
	le ID	Pen,/Rec. (in.)	Interval (Ft.)	9	Field As Testing	Sample Type		Well	head	Type	Standnine
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						Ħ		SAND &	1		
6	S-3	60	5-10	NA	NA		Light (5V 7-1), WASTE AND SAND	WASTE	1000		
8											2º Sahadala 10 M C
10								SAND, ASH &	1		2" Schedule 40 PA C I 0-45'
	S-4	- 00	10-45	8.1	2.1		Light (5Y 5 D. WASTE AND ASTE	WASTE	1		
12						H			1		
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10-	S-5	160	15-20	NI	NA.		(5Y 4-4), MEDIUM-SAND, some waste	SAND &	1		
	S-6		17-18	3	44		(5Y 5/6), MEDIUM SAND, some waste	WASTE	10000		
18	S-7 ·		18-20				(5Y 4/2), MEDIUM SAND, some waste:		10000		
20		٠.,		0.	*		/	+40	1000		Grout 2'-41!
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Note		1) Group 2) 3) 4) 5)	dwater pro	file somp	ding cond	lucted v	nh a bladder pump		Kev		Cement Drill Cuttings Native Soils Bentonite Grout Sund Serien
Rem		(1)	ication lin	es renrese	nt annro	simate l	oundaries between soil types and the transition may be gradual	Water have tradenus	Lucate d	rounder	Riser

1111	905B	reign (South M field, Ma	ain Str	eet	Inc.	Boring Well ID: SHM-10-15		Sheet 2 of 3				
lient: roject: roject ocatio	Number n:	USACI SHL - I : AC001 Fort Do Ayer, N	ort Dev evens 4A			Drilling Co. Boart Longyear Drill Rig: Mini Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JJC/WJW	Lype PAC Size 6" Hamm SAR	er es		Sampler Care Barrel G(r" Full NA"		
H	7	ample Ir	nformat		e .	Start Date: 8/11/2010 Completion Date: 8/11/2010	Surface	Ele		243.47 - NGVD 29' 241.89 +/- NGVD 29'		
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S-0	INI	25-30 25-28	N.V	NA	N N	Sample Description Black (5Y 3 1), MEDIUM SAND, with pebbles, odor (creosote)	SAND &			Construction		
S-II		28-30				Brown (5Y 6-2), MEDR/M SASD	WASTE					
							SAND			Grant 254 1		
S-11	60.	30-35	NA	NA.		Brown (5Y 7/6), MEDIUM SAND (orange status)						
5-13	2164 2	35,40	SA	N/		Brown (5Y 7-4) MEDRALS VS (Frogange status)	SWIL			2" Schedafe 10 PV (- Risa 0-15		
				(31)		As Field Testing Republis						
543	140	10-45	NA	XI		Light Brown (SY 5-4) MEDITAL SAND						
										Bentimite 41'-43		
	-14			-		and the second		П		#2 Motie Sand 43'-55' - +		
	iat	15.50	NA.	ÑA		Liebr Brown (SV 7-4) ARDRALS AND	SAND					
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Sovereign Consulting Inc. 905B South Main Street Mansfield, Massachusetts								Boring/Well ID: SHM-10-15			Sheet 3 of 3				
ro	ent: jeet; jeet N ation:		USACE SHL - I ACOUL Fort De Aver, A	ort Dev				Drilling Co., Boart Longyear Drill Rig: Mini Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoie SCI Inspector: JJCAVJW	Size PVC Size o" Harome NA file						
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nachtin.	Sam	Pen,	Inter	Blow/6"	Field	Sample Type	Water	Sample Description	Change (ft.)	Sof	Test Boring/ N Cons	truction			
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1111	_	(i) 1.) Stratif	fication bu	es tentes	ent apprise	eimai	e ho	undaries between soil types and the transition may be gradial	Water Involved	L	Riser				
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1	440	905B 5	South M ield, Ma	ain Str ssachu		THC.	Boring/Well ID: SHM-10-16		Sheet 1 (
ro)	ent: ject ject N ation:	Y	USACT: SHL - I AC001 Fort De Ayer, M ample Ir	ort Dev			Drilling Co. Boart Longyear Drill Rig: Mini Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JICW JW	Fspe Succi Size to Hamm	ier is	Sampler Core Barrel 100° Pall X X°				
1		- 5	1.3	norma			Start Date: 8/17/2010 Completion Date: 8/19/2010	Casing Surface						
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1	8.1	60	0-5	SA	NA NA	Ž.	Sample Description Dark brown (5Y 3 2) MEDRUM SAND	Change (ft.)	1	Construction Standpipe is V ags				
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-		Jan J	W. W.						1					
			11111											
	8.2		5-15				Light (5Y 7-3), MEDIUM SAND							
		1-1								2" Schedule 40 PVC Ris				
		1111								0-75'				
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le		1) Groun 31	dwater pro	file samp	ling cond	neted (uh a bladder pump		Ker	Cement Orill Cuttings Native Soils				
		31								HI Bentomte Groot				
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-	_	ы	unting her	DC 1/SINFOR	ust process	(Imale	oundaries between soil types and the transition may be grade	of Water In al and a	I II	Riser				
rii		times and	i under enr	ditions s	tated 1/h	ictuati	ns of groundwater may occur due to factors other than those	present at the time meast	aremen	its were made				
							ncentrations in fig.1, collected using Industrial Test Systems aboutted to a laboratory for testing. Please see tables for lab		Addin	ionally samples				
							osite or "G" for a discrete grab sample							

Sovereign Consulting Inc. 905B South Main Street Mansfield, Massachusetts								Boring Well ID: SHM-10-16			Sheet 2 of 4
Client: USACE: Project: SHE - Fort Devens Project Number: AC001 Location: Fort Devens Ayer, MA Sample Information								Drilling Co.: Boart Longyear Drill Rig: Mini Sonie Drill Method: Rotary-Vibratory Foreman: Fred Lavoie SCI Inspector: JJC/WJW	Lasing Type PV (Size 6° Hamme NA lb	er	Sampler Core Barrel 60° Fall 8tA**
-	-			ntorma			2	Start Date: 8/17/2010 Completion Date: 8/19/2010	The second secon		evation: 219,04 - NGVD 29 evation: 216.50 +/- NGVD 3
	9	e. (in,	1 (FL)	-	s Test	Type	Detect	and a surface of the	Well	head	d Type: Standpipe
Depth	Sample ID	Pen./Rec. (in.)	Interval (Ft.)	Blow/6"	Field As Testing	Sample Type	Water Detected	Canada Darantagia	Stratum	Notes	Test Boring/ Monitoring W
	7					ľ	Ĺ	Sample Description	Change (ft.)	-	Construction
26		1011	25-30	NA.	NA.			A CA			
AP.	2-1		25.29					Dark (5Y 54), COARSE SAND			
8	-		-				-		SAND		
15	5-5		29-30					Orange (5Y 6-8) COARSE SAND	A10.00		
10		604	30-35	NA.	NA.	_		Strange 12 For the Charles Strange			
		LICE.	3(0/32)	-3.3	1925			A R (TA) A A A A A A A A A A A A A A A A A A		H	
13 15	S-6		30-36					Yellow (5Y 8 3), COARSE SAND			2" Schedule 40 PVC R 0-75'
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4					5			As Field Testing Results		1	
		. 1	100								
		nel:	35-10-	7.1	1.1						
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	- 1										
ii -	-	2001-	40-45	12	1.1	-	-	ROX K (5Y 7 1)			
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	H	11									Sand
	- (1)			-						Screen Risci
count		imes and	under cor	nditions s	tated FI	uctua	dions	indaries between soil types and the transition may be gradual of groundwater may occur due to factors other than those pres	ent at the time meast	reme	ents were made
	1	vere coll	ected at th	e same de	pth inter	val m	rd su	centrations in ug I, collected using Industrial Test Systems Arsa binitted to a laboratory for testing. Please see tables for laborat	one Quick Test Kits ory data	Add	fitumally, samples
	3	Sampl	e is design	rated as er	ther "C"	ior co	ompo	site or "G" for a discrete graft sample able - NR "No Recovery - bgs - below ground surface ags: abe			

Sovereign Consulting Inc. 905B South Main Street Mansfield, Massachusetts							Boring Well ID: SHM-10-16	Sheet 3 of 4				
roj	eet:		Fort De Ayer, A	Fort Dev evens 4A			Drilling Co Boart Longyear Drill Rig: Mini Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoie SCI Inspector. JJC/WJW	Type PYC Size 6° Hamm NA16	e()	Samplet A saw Harsel 1844** Fall NA**		
1			ample li	nformat		pe	Start Date: 8/17/2010 Completion Date: 8/19/2010	Surface	Hes			
Depth	Sample ID	Pen/Rec. (in.)	Interval (Et.)	Blun/6"	Field As Testing	Sample Type Water Detected	Sample Description	Stratum Change (ft.)	-	Type: Standpipe Test Boring/ Monitoring Well Construction		
52	848	-6t)	50-53	NA	NA		Light (5V 7-1), COARSE SAND		0.0000000000000000000000000000000000000	Circut 2571		
54					Į)		As Each Lesting Results	SAND	-			
56	200	60	53-60 55-60	NA	N.A		Light (5¥ 7-1). MEDIUM SAND					
5.00												
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72	S-12.		70-80				Light (SY 7-1), MEDIUM SAND	SAND		Bentomie 71'-73'		
74					100		As Field Testing Results		1	=2 Morre Sund 7 9-85"		
Series	6	1) Groom	dwater ne	otile samo	line com	dueted n	th a bladder pump		Nex	Content		
1014		2) 3) 4) 5)			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		and a second of the second of			Drill Cornings Native Stats Heritage Grout Sand Screen		
72 74 Notes	nrks	2) 3) 4) 5) 6) 11 Stratil times and 2) Field were col	dwater profession lin d under co As testing lected at the	ies represe inditions s values rep ie same do	ent appro tated by present ac	extimate b fuctivation (senie conval and :		Water level readings sent at the time meast sente Quick Test Kits	were	-2 Morre Sand 7.9. Coment Drift Cuttings Native Softending Sand Serien Riser completed at answer made		

Sovereign Consulting Inc. 905B South Main Street Mansfield, Massachusetts	Boring Well ID: SHM-10-16	Sheet 4 of 4				
Tient: USACE Project: SHL - Fort Devens Project Number: AC001 .ocation: Fort Devens Ayer, MA	Drilling Co.: Boart Longyear Drill Rig. Mini Sonic Drill Method: Rotary-Vibratory Foreman: Fred Lavoic SCI Inspector: JJC7W1W	Casin Type PVC Size h ^a Hanna NAH	iei	Sampler Core Harrel 60° Fall NA*		
Sample Information	Start Date: 8/17/2010 Completion Date: 8/19/2010	Surface	: Ele			
Sample (D Sample (D) Frankes, (in.) Interval (F.i.) Blawfor Sample Type Nater Detected	Sample Description	Stratum Change (ft.)	les	Type: Standpipe Test Buring/ Monitoring Well Construction		
6 60 75-80 NA NA		NAND		#2 Morre Sand 73'-85'		
5 607 80-85 NA NA S-13 80-93	Light (53° 771), MEDIUM SAND			Well screen = 1/01* shit 75'-85'		
100	As Field Testing Results					
101 85 JM1 XA XA		SAND				
72 9696 NA NA						
	As Field Testing Results	47 15-2	1:	6.00 a 46.		
2000 000 000 000 000 000 000 000 000 00	GLACIAL TILL (5Y 7/3) BEDROCK (5Y 7/1) END OF BORING 96 FEET	GLACIAL TILL HEDROCK		14 1 1 A 42 A A		
tes () Groundwater profile sampling conducted with 21 31 41 51 10 10 10 Stratification lines represent approximate bo	h a bladder pump undaires between soil types and the transition may be gradual		Key	Cement Drill Cuttings Native Soils Hentomete Grout Sand Sereen Riser		

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Attachment B

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Attachment B

Seismic Refraction Survey Report Devens Ayer, Massachusetts

Prepared for SOVEREIGN CONSULTING, INC. July 2010

APPLICATIONS INCORPORATED

July 29, 2010

Mr. Neil Schofield SOVEREIGN CONSULTING, INC. 905B South Main Street Unit 202 Mansfield, MA 02048

Subject:

Seismic Refraction Survey Report

Devens

Ayer, Massachusetts

Dear Mr. Schofield:

Geophysical Applications, Inc. conducted a seismic refraction survey to help ascertain bedrock depths and elevations at specific locations designated by Sovereign, at the above-noted site.

METHODS OF INVESTIGATION

Survey Control

Sovereign's surveyor pre-staked three seismic lines prior to data acquisition. Along these three seismic lines, Geophysical Applications' personnel marked the seismic shot points with spray paint (on pavement or other hard surfaces) and labeled pin flags (on soft ground). Horizontal survey sontial area in the maintain traverses (approximately every 100 teet) was provided by Sovereign's surveyors. Vertical control was provided by Geophysical Applications.

The three seismic traverse locations are shown as red lines on Figure 1. Note that the distance stations in red on Figure 1 are those utilized by our field personnel: they represent distances along the ground surface, as determined by our geophone cables.

Distance stations noted on the surveyor's stakes are shown along the ground surface on each seismic cross section. Distance stations used during data acquisition and modeling are shown at the bottom of each seismic cross section. Note that the surveyor's stations along Line B, northeast of approximately geophone station 1125, have a minus sign as a prefix.

Seismic Refraction Profiling

Refraction profiling was performed along each designated traverse to profile stratigraphic horizons, particularly the bedrock surface.

Refraction data were acquired along 3,900 linear feet of traverse using an EG&G Stratavelw seismograph. Each 24-channel geophone array was 250 feet long with 10-foot geophone spacings. Geophones were coupled to the ground surface with spike bases on soft ground, and tripod bases on pavement or hard ground.

Either a Betsy seisgun or a 450-pound accelerated weight-drop device generated seismic energy at each shot point for this survey. Whenever possible we used the 450-pound weightdrop as the energy source.

A Betsy firing rod was used primarily at shot points that were inaccessible to the trailer-mounted weight-drop device. The firing rod was placed in shot holes driven 1 or 2 feet deep with a steel bar and sledgehammer to enhance recorded energy and minimize airborne noise. The weight-drop device strikes an aluminum impact plate on the ground surface. A geophone on the Betsy firing rod or adjacent to the weight-drop impact plate initiated seismic data recording.

Refraction seismograms were recorded using 0.25-millisecond sampling intervals, with record length of 256 milliseconds. Seismograms were reviewed in the field, and stored on the Strataveiw's internal hard drive and on floppy diskette for backup data storage.

Shot points were usually located at roughly 85-foot intervals along each traverse, with additional shots placed outside the traverse endpoints (where possible) to more accurately profile bedrock near the traverse endpoints. Five to seven shot points were occupied along each geophone array to provide reversed seismic profiles. Each shot point was marked with either spray paint or a labeled pin flag. These labels and flags were left in place at the survey's conclusion.

Refraction data analysis was performed by measuring compressional (P-wave) first-arrival times with WinSism11 software, followed by modeling with Rimrock Geophysics' SIPT2 delay-time interpretation software. This software uses a ray-tracing algorithm, in which calculated layer thickness beneath each geophone is varied to optimize agreement between observed and modeled arrival times. Time-distance plots were reviewed and selected layer depths manually calculated with the crossover-distance technique as a quality assurance check.

SURVEY LIMITATIONS

The southwest section of this site had large changes in ground surface elevation that could have caused some error in layer-depth calculations. We surveyed vertical elevation along each seismic line to within ½ foot to minimize ground surface elevation effect on the model.

Seismic survey depth calculations are typically accurate within \pm 10% (or \pm 3 feet, whichever is ranger) for cross sections presented in this report.

Weathered bedrock or overburden layers (especially glacial till) too thin to be detected by seismic profiling may be present along any of the interpreted bedrock surfaces shown on the attached cross sections.

Seismic velocity values shown on the cross sections were calculated over 24-channel geophone arrays, and therefore represent averaged subsurface conditions. Localized low-velocity zones (e.g. discrete bedrock joints or fractures) occur naturally and may be present at this site.

RESULTS

Three seismic traverses covering 3,900 linear feet were performed during this survey, at positions represented by red lines on Sovereign's accompanying plan map (Figure 1). Cross sections depicting interpreted subsurface stratigraphy are presented on Figures 2 through 4. Gaps along each traverse (e.g. Line A between Stations 250 through 412 feet) were due to flooded swampland.

Most seismic cross sections show three interpreted velocity layers. The uppermost layer exhibited compressional seismic velocity values of approximately 1,000 to 1,500 feet per second (ft/sec), probably representing dry, unconsolidated overburden or fill.

Calculated velocity values for the second layer were approximately 5,000 ft/sec. This velocity is judged to represent water-saturated overburden.

The deepest layer is interpreted to represent bedrock, with velocity values averaging mostly between approximately 15,100 to 16,400 feet per second, indicative of competent bedrock with little weathering or fracturing.

Note that the overall range of seismically-inferred bedrock depths and elevations exhibit good agreement with bedrock refusal depths observed at direct-push wells SHM10-2, SHM10-03, SHM10-04, and SHM10-08.

Variances between seismically-modeled bedrock depths and push-rod refusals depths may be due to the following;

- 1) the push rods may have either bent or deflected slightly along the bedrock surface, thus giving slightly deeper "apparent" refusal depths;
- 2) ground elevations at each well were not known at the time this report was prepared, therefore we assumed approximate ground elevations at each well; and
- 3) most wells were offset slightly from the seismic traverses.

Please call the undersigned at 508/429-2430 if you have questions regarding our report. We appreciate this opportunity to provide geophysical services to Sovereign and we welcome inquiries regarding this survey.

Sincerely,

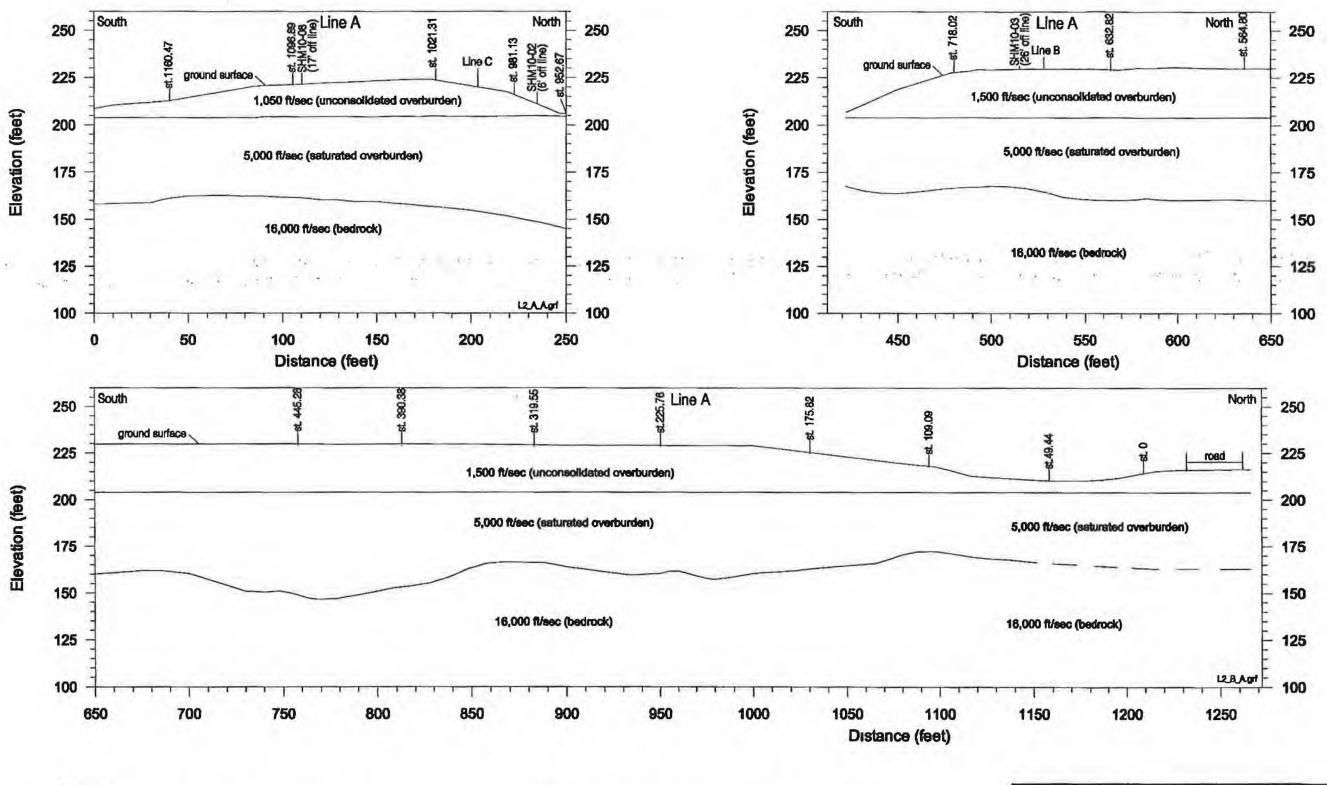
GEOPHYSICAL APPLICATIONS, INC.

Peter Giger Geophysicist Mark Blackey

M. Black

Principal and Geophysicist

1101225



Notes:

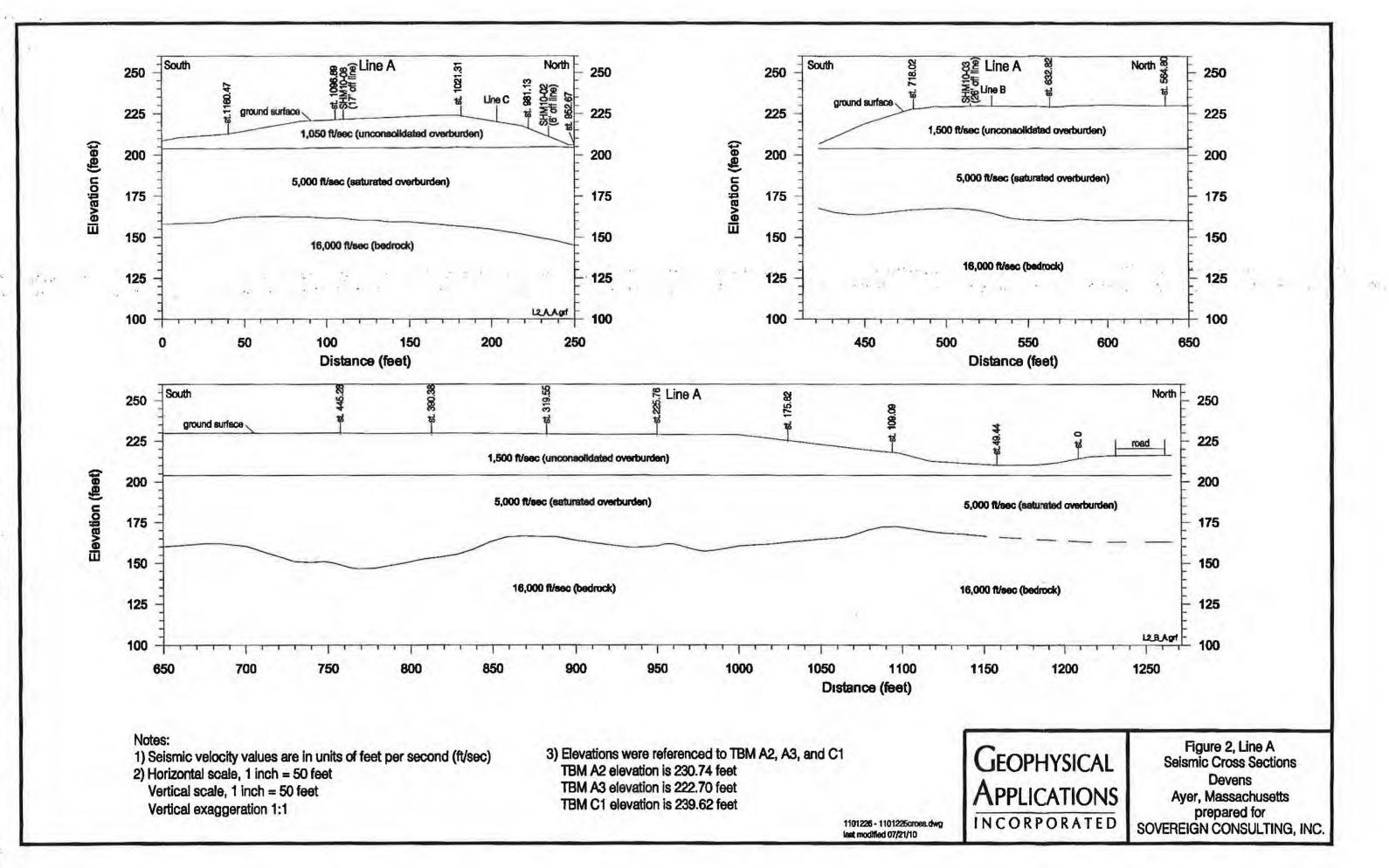
- 1) Seismic velocity values are in units of feet per second (ft/sec)
- Horizontal scale, 1 inch = 50 feet
 Vertical scale, 1 inch = 50 feet
 Vertical exaggeration 1:1

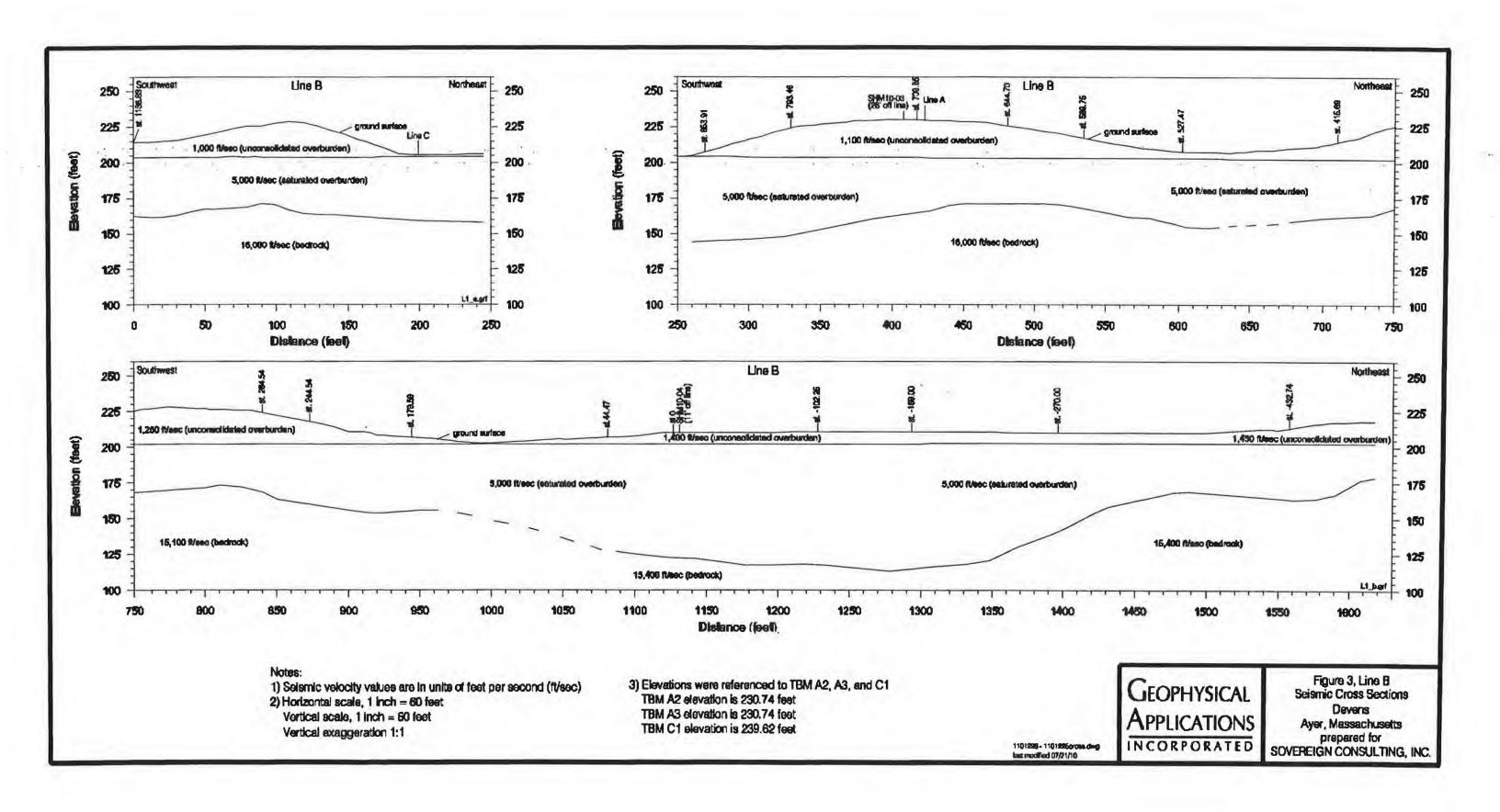
3) Elevations were referenced to TBM A2, A3, and C1

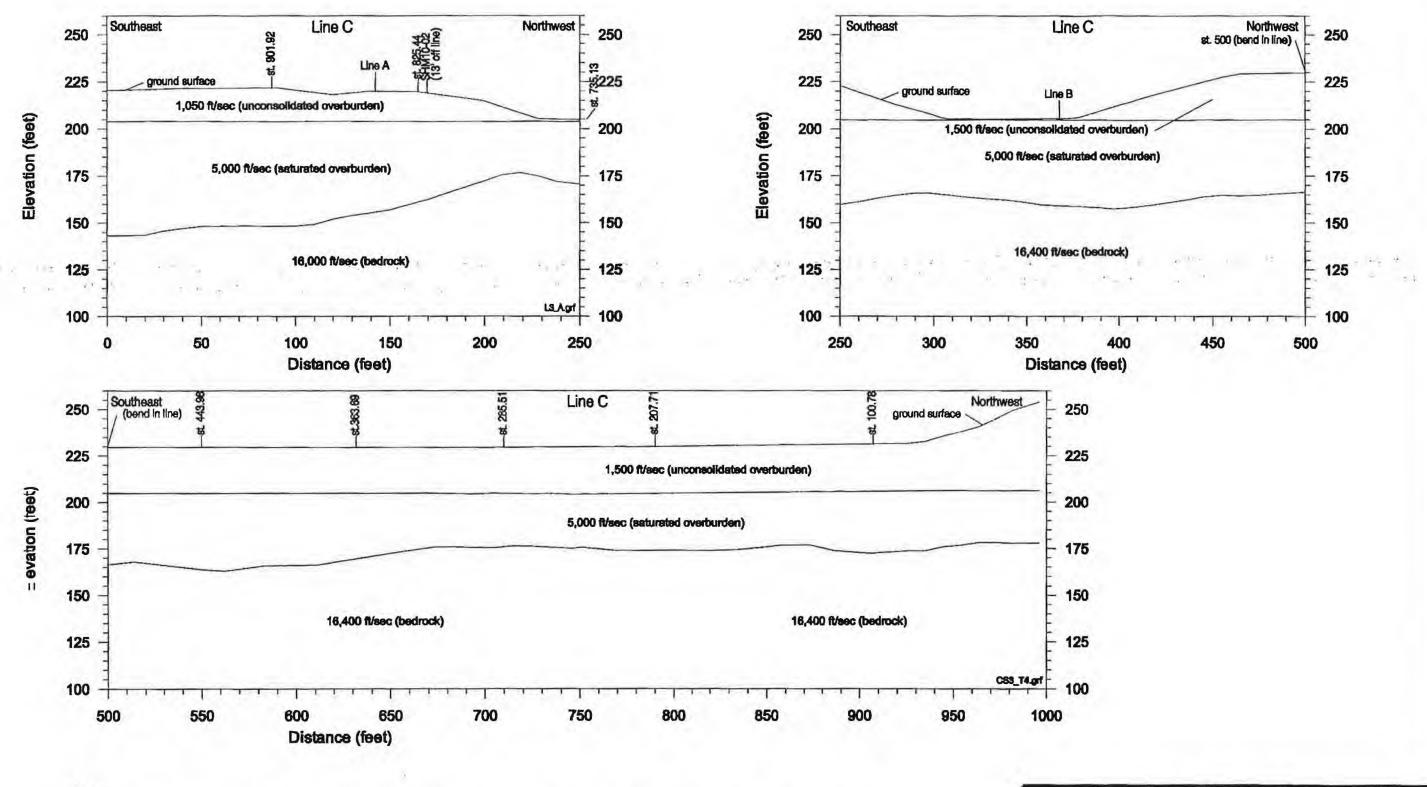
TBM A2 elevation is 230.74 feet TBM A3 elevation is 222.70 feet TBM C1 elevation is 239.62 feet

1101226 - 1101225cross.dwg INCORPO

GEOPHYSICAL APPLICATIONS INCORPORATED Figure 2, Line A
Seismic Cross Sections
Devens
Ayer, Massachusetts
prepared for
SOVEREIGN CONSULTING, INC.







Notes:

1) Seismic velocity values are in units of feet per second (ft/sec)

 Horizontal scale, 1 inch = 50 feet Vertical scale, 1 inch = 50 feet Vertical exaggeration 1:1 3) Elevations were referenced to TBM A3, and C1 TBM A2 elevation is 230.74 feet

TBM C1 elevation is 239.62 feet

GEOPHYSICAL APPLICATIONS INCORPORATED

Figure 4, Line C
Selsmic Cross Sections
Devens
Ayer, Massachusetts
prepared for
SOVEREIGN CONSULTING, INC.

1101226 - 1101225cross.dwg lest modified 07/21/10

Attachment C

Attachment C

Sovereign Consulting Inc. 9058 South Main Street. Suite 202 Manshuld, MA 02048

508-339-3200

SHM-10-07 Well Development MONITORING WELL SAMPLING LOG

Low Flow Samping



MOJECT LOCATION 10 3HM-1601 · DEVE DEPTH TO BOTTOM DEPTH TO WATER (Get) PID READING dawlant. (ppmv) NUMBER VIEW PURGING DATA FURING DIAMETER TUBING MATERIAL CODE PURGE PUMP TYPE PUMP EQUIPMENT MODEL & SERIAL AS (see below) LITERS WELL VOLUME PURGE: I WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Foot) 0.75 = 0.02; F = 0.04; 1.25 = 0.06; Z = 0.16, 3 = 0.37; 4 = 0.05, 5 = 1.02, F = 1.47, 12 = 5.88 I GALLON = 3.705 LITERS TOTAL VOLUME PURGED INITIAL PLANT (IR THIRM'S DEPTH IN FINAL PLANT OR TURING (1891) HIM PLARGING INITIATED AT WELL (feet) WELL SCREEN INTERVAL PURGING ENDED AT GALLONS DEPTH (feet) LITERS DEPTH TO WATER WITH PUMP. WATER LEVEL STABLIZATION (feat) Water Lavel Stable | VOLUME PURGED DURING TIME INTERVAL FLOW RATE PUMP SETTINGS DEPTH TO WATER (feet) (Yes or No) (min) (mL/min) START END INTERVAL (mL) SPECIFIC COLOR FLOW DEPTH TO TURBIDITY DISSOLVED ODOR WATER OXYGEN CONDUCTIVITY (mV) (describe) RATE (NTU) ('C) (describe) (ml/min) (mg/L) (µ5/cm) (feet) 14/- 10mVI (11- 0.3) THE 10WY (100-500 nvL/ (3.5 minsas) 850 476 -1656 12.90 9:40 0.42 cloudy NOR. 9:50 270 482 -167. 6 34 charge none, lane cloud 490 3 0.32 1246 None aco 497 12.75 none 0 Clear 498 10:10 Clear Horle EPA slabilization parameters from EPA/540/S-95/504 April 1996 SAMPLING DATA SAMPLED BY (PRINT) (AFFILIATION SAMPLER(S) SIGNATURES SAMPLING INITIATED AT SAMPLING ENDED AT PUMP CA TUBING OPPTICH WELL SAMPLE PUMP FLOW RATE INLINE MINORY FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL WE HELD-FILTERED Y FILTER SIZE ___ jim DUPLIENTE MELTI DECONTABINATION Y N 9 14 Fallman Equipment Type MATERIAL CODES AG - Andel Gues CG - Clou Class PF : Polymopping 5 : Sacono F : Tulem 0 : Clinar (Speedy) WELL CONDITION CHECKLIST (circle appropriate item(a), cross out if not applicable) Type: Flush Mount / Sland Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock Good / Broken / None ince of Rain Water Between Steel & PVC7 Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None .vandence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None



508 (19-1200)

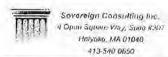
MONITORING WELL SAMPLING LOG



ITING DIAMETE	FI Dev	ens	(melies) 2	1	DEPARTITION ATC		DERDITO	MOTTON	PID READIN	V.
· 14"	R			- 1	man 26 .			1.20	(spow)	NIA
74		TUBING MATER	NAL CODE	FURGE FUMP	PURGING D	DATA		PUMP EQUIPME	NT MODEL & SERIAL NA	1
ELI VOLUME P		(see bishow)	E	FURGE FIME				TAXA CANAN	nown line	45
BOOK AS THE R ARTS OF THE LABOUR.		VOLUME: (TOTAL W						3.9		
ELL SCREEN IN		INITIAL PUN	AF OR TUBING DEP	T = 0 16; 3' = 0 37.					Y = 3 785 LITERS 3 ENDED AT	TOTAL VOLUME PURGED GALLONS
EPTH (Icel) 41	0'-50'	WELL (loe)	45'	WELL (leat)		11 100	1210			LITERS
WATERL	EVEL STABL		PTH TO WATER W	ITH PUMP:					protection	
TIME INTERVA	L FLOWR		00 26.84	PUMP SETTINGS			DEPTH TO W	ATER (feet)	Water Level Stable (Yes or No)	VOLUME PURGED DURIN
(min)			see robill	4 000 0	whave	Ž.	26.84	26.88	y	INTERVAL (INC)
10 15	400	mymin 30	sec rel	11 5 See	clische	W.	24 38	26.80	ÿ	
						3.				
		,								
TIME	FLOW	WATER.	(NTU)	DISSOLVED	Hq	TEMP (*C)	SPECIFIC	(mV)	(describe)	OUOR (describe)
(3-5 minutes)*	(m//min)	(leat) (*/- 03)*	(*/- 10%)*	(rog/L)	64. 018	146 330	(µ5/cm)	(see things	3.3	
3.20	400	26.80	314	0.25	6.55	12.21	780	-133.6	cloudy	none
12 35	400	26.81	109.7	0.32	656	12.18	784	-/39.4	clear	none
1258	400	26 82	51.2	0.28	658	13.20	~	-145.2	clear	none
/305	400	36.75	257	0.39	6.58	1941	775	-141.3	clear	none
1400	400	26 75	16.3	0.24	658	1049	771	-143 a	Clear	None
1105	400	26 74	18.8	0.27	6107	1.5 %	770	-1419	Clear	none
1408	400	26 75	184	0.28	650	1357	771	-1405	- War	none
1412	400	21.79	19.0	0.28	657	1254	771	-139 6	1.00	Person
111/2	183		1	1					2.15.60	7.07.52
Tursidi	W 1. 0	W L. A	ttempte	RESI	ABILL	PATH	N.			
1610	225	26.36	345	0.14	1.94	13.06	751	-1964	Cloudy	none
1613	205	26.36	286	0.14	6.98	13.4	751	-1977	M. d.	none
1616	225	26.31	237	0.15	6.97	1343	751	-195.k	Cloudy	none
100	<u></u>				0.77	1	1	17.6	CIVILIAN	10755
-			No St	abiliza	tion a	fler	4 HPS	. Act	SOP bea	un samp
	1			4.70		1	1	11	J	r
regarded and the second	A Trade of the Artist of the A	EPA/SIDVS-05/504 A	pill 1996		21101111					
	HINT L' AFFILIATI			ERIST SIGNATURE	SAMPLING	DATA		SAMPL	ING INITIATED AT	SAMPLING ENDED AT
		s - Sovien		Kunil	~	-		1	620	1730
PUMP OH TUBIN	IG LIEPTH IN WE	Co. P. L. Landon Co. Co.	PTLOW BATE (mt)	we famuse)	The state of the s		NG EQUIPMENT M	COLL & SERIAL	lls	
- /			J.5	FILTERFLY Y	and the second second	CCCX C	_		1	
PIELD DECDNIA	WINATION C) N	1,0,~	ин Едиричий Туре	19. (24.1109)				DOMICATE	Y 60
MATERIAL CODES	danh ≈ ΩAi	m Glass - Cla Chim G		на ры наураруч						
Property Francis	Marint 200	and Oliver		ONDITION CHE					Tank Access	T Davis The
11	Mount / Star Rain Water Br	nd Pipe etween Steal & P		on: Good / Nee			Good / Brok Riser: Good			/ Broken / None
		ound Welli ² Y		crete Collar G				Damageo	/ THURIE	
REMARKS:					-1-1-1					

Soveraigh Consulting Inc. 2058 South Mann Street State 202 Mansfield, MA 02018 509-339-1200

MONITORING WELL SAMPLING LOG



ROJECT NA	USACE-	DEUEN	S WELL DIAME	AM, TS	DEPTH TO WATE		осетно	S/JU	110 PID READI	SHW-10-06-
AND DESCRIPTION OF THE PERSON NAMED IN	COOL - OC		(inches)	- ((tent) w 3	5	(feet)	NIA	(ppiny)	
IING DIAM	ETER U.	[TUBING MA	TERNAL CODE PE	PURGE PUI		DATA	To the Marine	PUMP EQUIPM	ENT MODEL & SERIAL #	
lvus)	44	(see tielovi)	YE	7	enstalt	1		Ge	Lamas	
	St. St. Miller T. D. Mar.	A THERETON DOLLARS	L WELL DEPTH - 5	The second of the second of	7 W - 7 - 0 - 0 C			GALLONS	LITE	KS.
II SCREET	VINTERVAL		"= 0.04; 1 25" = 0.06. "UMP OR TUBING DE						ON = 3.785 LITERS IG ENDED AT:	TOTAL VOLUME FURGE GALLONS:
TH (feet)	93-92	WELL (H		WELL (leaf):				1		LITERS:
-	LEVEL STABI	IZATION	DEPTH TO WATER	WITH PUMP:	some					
ME INTER			(leel)	PUMP SETTING	e		DEPTH TO W	ATER (Inal)	Water Level Stable	VOLUME PURGED DUR
(min)	[mL/m	iley)					START	END	(Yes or No)	INTERVAL (mL)
(0M	iu 300	melmi	Nute				- A)(A	PNGL	49	
TIME	FLOW RATE (mUmn)	DEPTH TO WATER (feet)	TURBIDITY (NTU)	DISSOLVED OXYGEN (mg/L)	рН	TEMP ("C)	SPECIFIC CONDUCTIVITY (IIS/4m)	ORP (mV)	COLOR- (describe)	ODOR (describe)
minutes)"	(100.500 mUmin)*	(4/- 0.3)	(-1-10%)-	(+/- 10%)*	Life Oily	1 1/- 3/1)	(4/· 3%),	[+/- 10mV)*		
5	450	NIA	240	0.40	7.04	10.17	38	96.7	CLL	None
10	450	V)(Y	240	0.30	6.67	9.68	98	106.4	chrico	None
15	450	A)(A	170	0.24	6.12	9.44	27	115.7	Cralcio	None
90	450	N(A	100	0.30	5.77	9.18	36	139. 5	CLR	None
25	450	AIN	50	0.19	5.57	9.16	26	127.4	cur	None
7846	on parameters from B		s is the first consider.	PLER(S) SIGMATURE	*SAMPLING	DATA		SAVAPI	JHG INITIATED AT:	SAMPLING ENDED AT
									*	×
OH TUBI	NG DEPTH IN WELL	SAMPLE FUL	AF FLOW RATE (ALL)				ig Equipment Mc	IDEL & SERIAL	lis .	
THEODER	AMINATION: Y	N Siero CO = Calin i	Fille, in) PIL TEREO Y Kan Equipmera Type Kao PP = Polyszapyli	rid S = Silkene	Y⊄1ellon Q≐			DUMICATE	W B
ence of	n Mount / Stand Rain Water Betw of Ponding Arou	veen Steel & F	General Condition		ds Repair umb?: Y / N	Well Caps: PVC I	Good / Broke Riser: Good	n / None		Broken / None



Sovereign Consulting Inc. 905B Soidt Main Street, Suite 202 Mansheld, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG

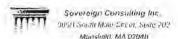


ROJECT NUM	USACE .	Devo	us	PROJECT LOS A y e WELL DIAMETE (Inches) 3/1	~	DEPTH TO WATE	R	(DECTIVIO		PID READ	8H14-10-05-
Was I		www.actio	B 35	(inches) 7/		PURGING I	DATA	Itaei) A	·A	(ppuny)	NA NA
BING DIAME		TI	BING MATE	RIAL CODE.	PURGE PUM	P TYPE		2000		HT MODEL & SERIAL A	
				Vethykn			ADACITY		GALLONS	Lin	ens
				0.04. 1.25 = 0.06;				12'=588	1 GALLO	N = 3.785 LITERS	TOTAL VOLUME PURGED
PTH (feet)			WELL (loca	MP OR TURING DEP	THON TEMAL PUMP	OR TUBING DEPT	HIN PURGH	G INITIATED AT		G ENDED AT:	GALLONS &
33.	351 LEVEL STAR	LIZATIO	ON DI	34	WELL (feet): 34	,,	12:	20	43	- 1235	IITERS
IME INTER (min)	(mL/	min)	I(fe	eat)	PUMP SETTING	S		DEPTH TO W START	ATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DUR!
	500 /	Mi7									
TIME	FLOW		тнто	TURBIDITY	DISSOLVED	рН	TEMP	SPECIFIC	ORP	COLOR	ODDR
3-5 menulos) ¹	RATE (ral/min) (100-500 ml/min)*	0	TER eel) 03)	(NTU)	OXYGEN (mg/L) (#/- 10%)	(+t- 01)*	(*C)	CONDUCTIVITY (()(5/cm) ()(7/- 3%)*	(n)V)	(describe)	(discribe)
225	500			70	.85	6:07	13.74	135	-13.8	clear	None
230	500			45	1.44	16.01	12.72	104	-12.1	Clear	Non-P
235	500			31	.39	5.49	12.66	103	~12.3	Clear	None
							· ·				
1.0	-7(P) *	-	HOS.	15.0 7	(PCe)	7 %	dr.m	- I			
*A stobilizatio	un parameters from	-			Land and	D.A. SERONIA	DATA	Carrier bearing	This is a	4 1999 November 17	
MPLED BY (F	RINT / AFFILIATI		Sou (A SAME	LER(S) SIGNATURE		MATA			ING HIITIATED AT	SAMPLING ENDED AT
AP OR TUBY	NO FO	ey		T. CWRATE (INE I	ii 16	FIFLD FAVALLET	EN MONTORIO	KS EDITIONALINI MI	DORE & SEMICE	335	1937
(1)											
LERIAL CONE	AMINATION Y		CG = Clear Gra	Falcas	NEILTERED Y NA Equipment Type No PP = Polywapy		Ta Dalou Da	Dillor (Scot As)		DUPLICATE	N N
		T-00			ONDITION CHE				application)		
ence of		tween S	iteel & PV	General Condition	on: Good / Noo Is Well P	eds Ropair lumb?: Y / N	Well Caps: PVC I	Good / Brok Riser: Good	en / None		/ Broken / None
vendence o	of Ponding Are	und We	W? Y)	N Con	crete Collar: G	Good / Cracks	ad / Leakir	ng / None			





US DECT NUM		vons	WELL DIAMET	Alex	TOPETH TO WATE	r.	DEFINIO	SOTTOM	4-10	SHM-10-06
	- Land Concept	200	(inches)	HA 3/4	(leat) KATE		(foul)	A	(upmv)	NH
SING DIAME	Staff Water of Left to to a long or a		TERIAL CODE	PURGE HUI	IP TYPE	DATA	1.86.	PUMP EQUIPM	ENT MODEL & SERIAL #	2. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.
eesy	_/4_	(see below)	Poly	Charles Control of the Control	Seapuml			GALLONS	[uv	ERS
		TO THE PARTY	AL WELL DEPTH - ST						ON = 3765 LITERS	
SCREEN		INCTAL	"= 0.04, 1.25" = 0.05, PUMP OR TUBING DE	PIH IN FINAL PLIM			GINITIATED AT		IG ENDED AT:	GALLONS
	3-45	WELL (I	DEPTH TO WATER	WELL (less)	441	17	300	1.5	330	LITERS
ME INTER	1000		(feet)	PUMP SETTING	S		DEPTH TO W	ATER (feel)	Water Level Stable	VOLUME PURGED DURI
(min)	tmUmi			TOWN OFFICE			START	END	(Yes or No)	INTERVAL (mL)
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	рH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	(mL/m/n)	WATER (feat)	(NTU)	OXYGEN (mg/L)	1.7.1	(°C)	CONDUCTIVITY (#5/sm)	(niV)	(describe)	(describe)
G minutos)*	(100-500 mL/min)*	(1/- 0.2),	(»/- 10%)°	(44, 10%),	(1,0 41)	(1/- 3%)*	1-1- 361	(+/- 10mV)*	3 10 37-4	
305	800				-51				Cloudy	
300	450		290	45	5.66	(3.85	(88)	4.2	+ leon	None
310	450		400	.33	5.62	14.16	193	6.9	cloudy	Name
3/5	uso		550	. 23	5.53	14.01	19a	8.3	cloudy	None
30	250		750	.21	5.65	16.12	194	5.1	cloudy	None
	250		800	.19	5.65	15.69	1901	4.9	cloudy	None.
				Ę. *			7/			
		(- 14		100	
						- 1				
	on pavameters from F		P. A. C.	ii Maayoo oo aa	o my resource	N. P.	TENNA PERSONAL	S. 3. 152	wager out only	A Section of the section
PLEO BY (F	TRINT) / AFFILIATIO	N.	SAM	TERISI SIGNATURI	SAMMEING	DATA	118 18		ING URTIATED AT	SAMPLING ENDED AT
6.	To Toby	5000	MT TOWKATE ONLY	i fla	Cir. Li con Diàzas Y	EO AACIAL EFERM	GEWU PMENT MC		330	1335
CITTURE	- Landing	J. J. J. J. J. J. J. J. J. J. J. J. J. J	and the later of the later of	and the same of	(SWADOWS)	E-1-00-031 LOBBY	COLUMN WIGHT WIS	occio actività		
DECONT	AMINATION Y	N		o-Fit TERED Y non-Equipment Type	N FILTENS	ilze jim			DUPLICATE	V 10
RIM CODE	S AG : Anno I	JOSE CE - CHIM		ONDITION CHE				constant		
g: Flore	Mount / Stand	Pipe	General Condition	ONDITION CHE			Good / Broke		Lock: Good	/ Broken / Name
lence of	Rain Waler Belv	veen Steel &	PVC? Y / N	Is Well P	umb?: Y / N	PVC	Riser: Good			Second Little
agence o	of Ponding Arous	no well! Y	/ N Con	crete Collar.	ood / Cracke	a / Leakin	y / None			



500-239-3200

MONITORING WELL SAMPLING LOG Low Flow Sampling

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Sovereign Consulting Inc. 1 Gpen Square Way, Scale ISU/ Halyaka, MA 01010

луона МА 01010 313-540-0650

PROJECT LOCATION CHO PEL NAME 26 \$10 CAS FOC (SHIM IC CLO DEVOICE MELL DIMMETER PAN (vinga) (men NA (Teor) MA PURGING DATA TIRGE PUMP TYPE TURING DIAMETER TUBING MAYERIAL CODE PUMP EQUIPMENT MODEL & SERIAL BY Isaa Browt Geopump inches) POLY SALL ONS WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Salous Per Fooi) 075 - 0.02 1" + 0.04, 1.25" + 0.06, 2" + 0.16, 3" + 0.37, 1" + 0.55, 5" + 1.02, 5" + 1.47; 12" + 1.00 T GALLON = 3.785 LITERS TOTAL VOLUME PURGED INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN (PURGING INITIATED AT WELL SCREEN INTERVAL PURGING ENDED AT SALLONS WELL (feet) WELL (lost) 541 58-55' ITERS: 0750 DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (feet) VOLUME PURGED DURING TIME INTERVAL FLOW BATE PUMP SETTINGS DEPTH TO WATER (feel) Water Level Stable INTERVAL (mL) (Yes or No) (mL/min) END (min) TIME TURBIDITY DISSOLVED SPECIFIC ORP COLOR CONDUCTIVITY RATE WATER (LITM) OXYGEN (mV) (describa) (describe) (°C) (mt/lmn) (leat) (mg/L) (us/cm) (100-300 mLimb (14 03) 1-1- 10%)* (+/- 10%) 10. 011 (+/- 376)* 44. 391 686 574 5-87 14.79 0080 250 HUNR max C words 985 1038 Olo 29 13.53 250 None max 6000 0820 12.89 280 -119.6 6.04 250 None MOX * EPA stabilization parameters from EPA/SAD/S/99504 April 1996 SAMPLING DATA SAMPLED BY (PRINT) I AFFILIATION AMPLING IN TIATED AT SAMMUNG ENDED AT AMPLERICI SIGNATURES 835 835 Erin Foly Sar can. Ca SAMPLE PLAN' FLOW RATE IN PERMINDIN PUMPOR TUBING BESTHIN WELL HELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL IIIS (kept) 541 ON TER SIZE OF DELD FRITERED (F) 0 FILLU RECONTABINATION (F) N DUPLICATE Felications Exportances Lype-MATERIAL CODES AG & Amber Libes CG 1 Older Gibes PR Dispathyours OF Calapropylene 5 - Securic 1 - Inflam D - correct Specify WELL CONDITION CHECKLIST (circle sepropriate nemis), cross total visit oryalizable). Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock. Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb? Y / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Welli? Y / N Concrete Collar Good / Cracked / Leaking / None REMARKS-

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Sovereign Consulting Inc. 9950 zonit blan Baent, Sam 202 Manshell, MA 02048 606-399-3200

MONITORING WELL SAMPLING LOG Low Flow Sampling

min

Sovereign Consulting Inc. + Open Square Way, Some 1907 Holyalia, MA 01040

41.6540-0650 PORCETHANG HOJECT LOCATION (PELLUTO CIS ACE m) WELL DIMMETER WELL DIMMETER (MEN'N) 3/4 26:10 31-1M1-16 DEPTH TO WATER NY Over MA (ppmw) **PURGING DATA** PLIMP EQUIPMENT MODEL & SERIAL IN TUBING DUMETER TUBING MATERIAL CODE Geophing PLINCE PURKE (see below) POIN twesters 74 GALLONS WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Callions Per Fool) 0.75 = 0.02 | T = 0.04, 1.25 = 0.06 | 2 = 0.16 | 3 = 0.37 | 4 = 0.65 | 5 = 1.02 | 6 = 1.47 | 12 = 5.88 GALLON = 3.785 LITERS TOTAL VOLUME PURGED INITIAL PUMP OR TUBING DEPTH IN PHAL FUMP OR TUBING DEPTH IN WELL (feet) WELL SCREEN INTERVAL PURGING INITIATED AT PURGING ENDED AT: GALLONS DEPTH (feel) 0910 63-65 64. LITERS WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP (feet) TIME INTERVAL FLOW RATE VOLUME PURGED DURING PUMP SETTINGS DEPTH TO WATER (leet) Water Level Stoble (mL/min) (Yes or No) INTERVAL (ml.) (min) SPECIFIC **I'LOW** DEPTHIO TURBIDITY DISSOLVED pH. ORP COLOR COOR HATE WATER (NTU) OXYGEN (-C) CONDUCTIVITY (osv) (describe) (describu) (mUmln) (feet) (ing/L) (05/em) (100-500 mt/m (-1- 03) (H. 10%) 14/- 0.05 100 YEST (er. 10mV) 147- 10557 (4)- 5%1 5-9 6.03 12.78 8a8 1100 113 None 250 -117 5-89 ·al 828 250 12.28 None Max 135 14 827 -120 220 None max EPA stubilization plyameters from EPA/5/6/S-95/5(M. April 1996 SAMPLING DATA SAMPLED BY (PRINT) I AFFILIATION PANDLING MILITARED AT SAMPLER(S) SIGNATURES AMELING ENDED AT 950 940 Eria Way Sou SAMPLE PUMP PLOW RATE (NA. per n VIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL IN 641 DELO-FR TERPO ENTER 2056 THE PIFER DISCONTAMINATION () (R OUT IT ATE (1) Y midnon Equipored Type MATERIAL CODES AGE Armer Chief CG - Carne Glas uny one PP = Polygroppy one S = S + cov T = Tellulo O + Co. vo / Specilly WELL CONDITION CHECKLIST (raide appropriate non(s), crass out from applicable) Good / Braken / None Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb't: Y / N PVC Riser, Good / Damaged / None Evendence of Ponding Around Well? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS:



608-320-5200

MONITORING WELL SAMPLING LOG Low Flow Sampling

Sovereign Consulting Inc. LOpen Simula VPay Sella #207

Helyona MA 01040 411-54(40650

HING DIAME	TER		TERIAL CODE	PURGE PUM	PURGING D	ATA		PUMP EQUIPM	NT MODEL & SERVAL I	3
iclies)		(see helow)						GALLONG	TO?	FAS
	Contract of the Contract of	THE PARTY	L WELL DEPTH - ST.			The second second			PH = 3.785 LITERS	
ELL SCREEN	INTERVAL	MATTAL	"= 0 (M 175" = 0.06. PUMP OR YUBING DEP COL)			HIM PURGING	TA DETAITING		G ENDEU AT	GALLONS 3
	73.75		74		114.		090			LITERS-
	LEVEL STABL		DEPTH TO WATER ((feet)							
TIME INTER	VAL FLOW R		-	PUMP SETTING:	s ,		START	END	Water Level Stable (Yes or No)	VOLUME PURGED DURI INTERVAL (ML)
TIME (3-5 namutos)*	FLOW RATE (mUmin) (100-500 mL/mm)*	DEPTH TO WATER (lest)	TURBIDITY (NTU) (47: 10%)*	OXYGEN (mg/L) (XYGEN	34% 2' 6% DH	TEMP (°C)	SPECIFIC CONDUCTIVITY (µ5/sm) (v/- 594)*	ORP (mV)	(describo)	ODOR (describe)
1030	300		max	.19	4-40	14.46	726	-130	cloudy	Mang
040	300		max	.160	3.90	13.88	124 77	5-194	Clarky	Kune
1050	300		max	14	4.08	14.16	725	-124	Cloud	Mone
-				-		-		-		
EPA siabilizar	ion parameters from	EPAISIOIS-95/50	April 1996	1						III.
Eril	PRINTINGENERALIE TOLEY UND DEPTH IN WEL	500 (rverico) susuprijuri E20. AM our wurning			G BOURTANT CO	1.10	JING MATILATED AT	SAMPLING ENDED AT
ELD DECON	TAMINATION (5)		Filtra	О-РУДИНІО У Ком Ециринан Тупа «« ГР = Р•ивери			Dane Was-		numacass:	(E)
TETOM COM	AU T A(ris)	£346. CG = 1240		CONDITION CHE				урукажы)		
	h Mount / Stan Rain Water Be		General Conditi	on: Good / Nee	eds Repair	Well Caps:	Good / Broke	n / None		/ Broken / None

00 See

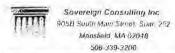
Sovereiga Consulting Inc. 9669 South Mair Strent State 20% Manshala, MA (1208) 400-319-3200

MONITORING WELL SAMPLING LOG

THE

Sovereign Consulting Im. : Guen Space: Way, Sude Whit Hayake: MA 01040 (17-540-0660)

LIS LIS LOUICT HUM	ACE D	cens	WELL DIAMES	2x , ms	PEPTH TO WATE	A	DEPTH TO	MOTIOS	PID READ (ppins)	
BING DIAME	TEA		TERM CODE	PURGE PU				FUMP EQUIPM	ENT MODEL & SERIAL II	(a-
thest V		(See below)	PUY NEWELL DEPTH - ST		200 V WELL		-	GALLONS.	Lit	ERS
A - 4 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5		0.75 ± 0.02.	1 = 1104; 1.25 = 0.06.	2 -016, 3 -03	7. 4 = 0.65; 5'=	1 02: 6" = 1,47	12' - 5 08	T GALLO	IN = 3 MIS LITERS	TOTAL VOLUME PURGEO
ELL SCREEN EFTH (1861):	19-80°	WELL (PUMP OR TUBING DEP		79.51	THIN PURGIN	GINITIATED AT	PURGI	NG ENDED AT:	GALLONS: 3
WATER	LEVEL STABL	W. 20 A A S	DEPTH TO WATER ((leel)	VIIII PUMP.						
TIME INTERV (min)	/AL FLOW R/ (mL/mi)		7	PUMP SETTING	s .		DEPTH TO W START	ATER (feel) END	Water Level Stable (Yes or No)	VOLUME PURGED DURI INTERVAL (mL)
									*	
TIME	FLOW RATE (mUmin)	DEPTH TO WATER (feel)	TURBIDITY (NTU)	DISSOLVED OXYGEN (mg/L)	pił	(.C)	SPECIFIC CONDUCTIVITY (Ins/cm)	ORP (mV)	COLOR (describe)	ODOR (describe)
1200	300	1+9 0 23.	max max	U 10%	5.00	16.25	670	14 10mm)1	claudy	None
210	200		max	ax	4.50	15.36		-115	cloudy	None
рав	300		mox:	.19	434	14-89	670 669	109	Clonay	Mane
								H.		
									9	
ZPA stobilizati	on parameters from E	PA/540/S-95/504	April 1096		1			1		1
Fire	OITALISTA LITHER	5.15 0	on 1	TERIS SIGNATURE	1			l,	1995 INITIATED AT	SAMPLING ENDED AT
	ng bernan weu 15	SAMPLEP	DAFF FLOW RATE INC.	Francisco A	FIELD PARAMET	ER MONITORIN	G EQUIPMENT LIC	DEL & SERIAL	HS.	
	ANIINATION (*)		Filtras	HALL PRESS (C) AND Examplement Types On PR SPENIES IN		76E 100	Elfai (P.co. de)		DUPPR 61E	P
14 100AL 1/13/0E	a no tensor)	distr mar CN		ONDITION CHE				ipplicatili)		
vidence of		ween Steel &	General Condition PVC? Y / N ' / N Con	is Well P	lumb? Y / N	PVC	Good / Broke Riser: Good .			Broken / None
EMARKS:		379 200	300	- Sec. Solidi.	- Jorgan	repon				





DIECT NUM	ACE D	EVEN	MELL DIAMET	ER	DEPTH TO WATE	R	DEPTH TO	5/2º	A. In ordania	SHM-10-06A
-98500	Table Same	r 75 as	(inches)	3/4	PURGING I		(feat)	NA	(ppunv)	NA
IBING DIAME	TER	TUBING MA	TERIAL CODE	PURGE PUM	Pump	JA J A	· contain	РИМР ЕДИРМ	ENT MODEL & SERIAL #	110 (1) (1) (2) (2) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4
		(see pelow)				CALL A		GALLONS	Time Time	FAS
		122 120 7 7 11	L WELL DEPTH - S					7		
ELL SCREEN		INITIAL	*= 0.04, 1.25* = 0.06, PUMP OR TUBING DE	PIH IN FRIAL PUMP				the state of the state of the	IN = 3 785 LITERS IG ENDED AT:	TOTAL VOLUME PURGE GALLONS
6PTH (Inei). 33- 3	35	WELL (R	34	WELL (lest)	113	2	30			LITERS
WATER	LEVEL STABL	JZATION	DEPTH TO WATER	WITH PUMP:	01					h T
TIME INTER			(feat)	PUMP SETTINGS	5	1	DEPTH TO W	ATER (feet)	Waler Level Stable	TVOLUME PURGED DURI
(min)	(roL/m	in)					START	END	(Yes or No)	INTERVAL (mL)
	-	-						-		-
	-	_							-	
	-						-			-
							-			
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	рн	TEMP	SPECIFIC	ORP	COLOR	DDDR
	RATE.	WATER	(NTU)	OXYGEN		("G)	CONDUCTIVITY	(mV)	(describe)	(describe)
(il-5 minu(es)*	(mL/min) (100-500 mL/min)	(leal)	(*/* 10%)*	(+/- 10tv)*	(*/- 0.1)*	(4)- 49)°	((15/cm) (+/- 3%)1	(+/- 10mV)*		
2:45	125		65	10.30	6.00	17.23	32	160.2	clear	nene
2:48	185		5.3	10.24	5.81	16.31	30	171.2	Clear	nene
2:61	125		2.3	10.04	5.66	14.58	24	194.9	Clear	nene
							11231			
- 7			-							
-				-					-	-
-					-				-	
-			-							
				1: 1-14						
				1 29 1						
					-		**	J-7-		1
- 4	3 - 1	100		*	21.0		-	- 1	*	
			-			-	-			
EPA stabilization	on paramejers from F	PAISALYS DEVOUA	April 1996			-				-
	and the control of the figure of the control of the	Contract of the contract of th)	201	SAMPLING	DATA	(((((((((((((((((((E 67 9 - 17	250	THE PARTY OF THE P
WILL FEE BA II	un Hos		SAM	u Ly	H	M			:55	SAMPLING ENDED AT
IMP OR TUBI	HG DEPTH IN WELL		MP FLOW RATE (OIL		IFIELD PARAMET	ES WONITORIN	G EQUIPMENT M		The second second	3.00
rei)		J	an a contract of the	par /manu/	(ICCC) IN INC.	LI WOLLINGTON	are below means to	DOME OF GRAND		
KI DECONI	AMINATION Y	9	PIEL	DELTERED Y	H FILTERS	5/2E			CONTICATE	V W
400.00				dan Equipment Type					Delliente	Х (6)
ATERIAL CODE	> AG = Anthor	Guss CO Clum		CONDITION CHE				andicable)		
voe Finel	Mount / Stand	Pine		on: Good / Nee					Lock Good	/ Braken / None
			PVC? Y / N				Riser: Good			. Person / Morie
			/ N Cor					- 211.00 946	ALL AND THE SECOND SECO	
EMARKS										



Will.

Sovarenga Gonsulting Irre Il Open Somen Way, Some ISO Holyaka, MA (Haria a (S.Garalifel)

SJECT HOM	ACE	Dewas	WELL CHARLES	er, mr	A CHOOL CO WATER		DEPTITO	5 ~ 3	04/10 (0)000 READ	
		1		/ 4	PURGING D	ATA		IH.		M)
HING DIAME	1/4	(sortelaw)	TERIAL CODE	CHEON	aumo			MIMP EQUIPME (MI MODEL & SERIAL II	i.
LL VOLUME	PURGE: WELL	VOLUME (TOTA	L WELL DEPTH - 57			VEVCUA		GALLONS		LHS
LL CAPACIT			FUMP OF TURING DE				CONTINUED AT		N = 3 7/15 LITERS G ENDED AT	TOTAL VOLUME PURGE GALLONS
PTH (leel)		WELL (I	noi)	WELL (feel)	ece!	25	EF)	11	.: 2	LITERS
13- 4 WATER	LEVEL STAB		DEPTH TO WATER	WITH PUMP:	Υ'	3.	00 160	20 1 /4	, v	
IME INTERV			((ecl)	PUMP SETTING	\$		DEPTH TO W.	ATER (feet)	Water Level Stable	VOLUME PURGED DUR
(min)	(mL/r	nîn)		. 4.1.		_	START	END	(Yes or No)	INTERVAL (ml.)
TIME	FLOW	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	DA	(°C)	SPECIFIC	(mV)	COLOR (Haseribe)	ODOR (describe)
-5 némios)*	(mt/min)	(feet) (*/- 0.3)*	(1/s-10%)*	(why)	= (0% 0 ty	11//+ alvis	(165/ean)	(*/: 10nt/)		1
1604	850	Alo	02.0	16.7				1	1-1-2	* L**
605	456	1	Max	0.31	5.66	13.0	95	34.4	'tloudy	none
610	450		800	0.37			SF - sil			1 - E
615	4570		650	4ST C			radias			
6:30	450	L	140	1.54	5.79	14.66	76	17.0	Clauder	None
									1	
	45.			4-151			1000			
		Acres a		1.4.4	8	-	i		4 - A - A	
100	The American Line Line	EPA/9/0/5-9///10/	A 1006							
100			мри тип		SAMPLING	DATA				
PIUCED BAT	PRINTEL AFFE IAT	irit.	SAM	IFI FIT(8), SIGNATURI	es.	-	*************	SAMP	INC MINIMED AT	16:30
MIP TORT TIME	ING DEPTH III WE	LL TSAMPLE PI	IMPTERVIRATE INC	mer numuie)	TOTAL D PARAMET	RICHMONTOR	NG EQUIPMENT NO	DDEL A SERIAL	16:25	16.90
pd)				,						
по овсом	TAMINATION Y	H		D-SILTERED Y	N PILTER!	size poi			00800.831	15 (1)
TERAL CODE	S AC : Minh	eritass CG Den		виле тор - Разулара	inion \$ - A5-sine	T = 1-dCm D	- Oling, Popuse Per			
			WELL	CONDITION CH	ECKLIST perce	appropriate fine	olog, cross us (if no)	appresido).		
	h Mount / Star			ion: Good / Ne			Good / Brok			/ Broken / None
			PVC? Y / N					/ Damageo	/ None	
STREETER.	or conding Are	oute Mail.	/ N Co	United Course (SOOR I CISCIO	ca / reum	AGUE			



Sovereign Consulting Inc. Might Stuff Dan for set Tailor 207 Manshell, MA 1704h 508-339-3200

MONITORING WELL SAMPLING LOG

Tritto

Suverniga Consulting Inc. 11 pr - Sname Way 5 pp 11.07 Halyaka, MA 6/1210 11/14/10/0020

USI	ACE - De	veus	PROFE	Ayer				5/2	4/10	SHM-10-08-C
AC AC	OOL - 00	2	(metros)	34	(foot)	(A	(feel)	MOLIDM	(Mana)	MG .
IBNIS DIAMET			TERNI CODE	Tonner den	PURGING D	ATA		PUMP EQUIPM	ENT MODEL & SERIAL O	
icuas)	B14	(sea bolow)	PE PE	1000	Penstul.	S.C		G	eapure 2	
And Arrival and			L WELL GEPTH - ST	The second second	CL W IL C. PLUCIA			GALLONS	· · ·	
IELL SCREEN I	(Golkos Per Foot) NTERVAL	INSTRAL I	PUMP OR TUBING DEF	THIN FINAL PUNIS					ON = 3 VELLITERS NG ENDED AT:	TOTAL VOLUME PURGE GALLONS
EPTH (feet)	3-55 B	S WELL (N	054'	WELL (lost)	054'	*	16:40	- 1110		LITERS
	EVEL STABLE		DEPTH TO WATER		0.50					
TIME INTERV			(feet)	PUMP SETTING	s ,		DEPTH TO W		Water Level Stable	VOLUME PURGED DUR
Pwag	(mL/min	Dan	_			-	START	END	(Yes or No)	INTERVAL (mL)
1 way	100	Sastr								
TIME	FLOW	DEPTH TO	TURBIDITY (NTU)	DISSOLVED	pi-1	TEMP (°C)	SPECIFIC	ORP (mV)	COLOR (describe)	ODOR: (describe)
order to the	(mU(titit)) (190-500 ns (mhi):	(1661)	(1/- (B/L)	(mg/L) (-7- 10%)	(vs. 0.15	D/c 351*	(µ5/em) (r/. 1¥Y	(*/: (Ont//)	1,	(assembly
705	400	66 631	Max	125	5.93	14.47	150	-25.6	Cloudy	No.
1715	400		Max	.ao	5.71	14.2/0	159	-5.9	cloudy	None
1720	400			1.4	5.79	15.11	157	3.1	Cloudy	Note
1723	400		900	1.47	5.80	14.10	lale	8.1	01 11	None None
100	4.00		700	1.11	3.00	1110	VIALE	12.1	cloudy	House
										1
-										
										-
							-			1
				1	-					1
						1				+
		-						1		
										13
		-	0.1					-		-
			-							
EPA sukarunasi	n parameters ham t	PAG10/S-95/50	April 1996		-			1-	H	1
SALIM ED 29 JIS	REPUT OF AFFILIATIO	N	Dexe	PTER(S) SIGNATUR	SAMPLING	DATA		Icarau	NING BUILDING AT	SAMPLINGENDETTAT
antanceo se in	ACT TO ALL PROPERTY.	,,	2016	renjaj aranstun	6			1	775-	730
	4G DEPTH IN WELL	SAMPLE P	UMP FLOW HATE (m)	becommunic)	FIELEFARAME	ERMONTORX	IG FOLUPATAL IA	OHEL & SERIAL	# Q 3	11100
herly	54'			- 2						
HELD DECONT	Ý NOSTÁNIKJA	И		DIFFETERED (*)	N FILTERY	(H) 1818	0.45.00	h	District Cold	
AATEMAT COURS	Ati : Ameri	tribes CC Plan			hive Brismann	(Ardion Q	Other Paper Age.			
			WELL	CONDITION CH	ECKLIST (course	эррюрияй кен	मुड्डी, ट्यालंड काम में क्या	applicables		
Marie Company	Mount / Stand			ion. Good / Ne	TOTAL MANAGEMENT		Good / Brok			/ Broken / None
			PVCY Y / N		Humb? Y / N		Riser Good	/ Dalmage	1 / None	
REMARKS:	l Ponding Arou	ANGINE A	I IN Co	nerete Collar: 1	POOG 1 CHECK	ud / Leaki	ng / None			



Sovereign Consulting Inc. 20:8 Sooti Kiin Shear Siite 20:3 Maasladd, MA 02048 200-239-2000

MONITORING WELL SAMPLING LOG

IIII

Sovereiga Coasulting Inc. I Dinui Square Way, State (1907) Halyoko, MA 010.IU 413-640-0850

PROJECT NAME PROJECT LICENTION WILLIAM HOUSET NUMBER -1111 Durage WELL CHAMFLER DEPTH TO WATER PID READING DEPTH MAN DE milles) 3/4 NA (teel) WA **PURGING DATA** TUBING GRAMITER TUBING MATERIAL CODE PUMP EQUIPMENT MODEL & SERVAL ME (see below) Poly (menes) Yy Geogning GALLONS WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY GALLON = 3.765 LITERS WELL CAPACITY (Gallom Por Frio) 0.75 = 0.02, 1 = 0.01, 1.25 = 0.06, 2 = 0.16, 3 = 0.37; 4 = 0.66, 5 = 1.02, 5 = 1.47, 12 = 5.81 TOTAL VOLUME PURGED GALLONS: 36 M INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN PURGING INITIATED AT WELL SCREEN INTERVAL DEPTH (leel): PURGING ENDED AT WELL (leet): 0920 0855 64 64 63-65 WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP (feet) FLOW RATE DEPTH TO WATER (feet) Water Level Stable VOLUME PURGED DURING TIME INTERVAL PUMP SETTINGS INTERVAL (mL) END (Yes or No) (min) (ml./min) TIME FLOW DEPTH TO TURBIDITY DISSOLVED SPECIFIC ORP COLOR ODOR RATE (NYLI) DXYGEN CONDUCTIVITY (InV) (describe) (describe) ('C) (mL/min) (feet) (mg/L) (µ3/cm) 147- 10th 1100 500 ng aring 101-031 (-/- 10%) 14 011 147 2842 14/ 181 (4)- 10mV1 -57,4 0900 400 6.75 MUNG Max 400 73 (a.53 13.66 NOCK 0910 16 Max 67 -1341 0920 400 None Max ,-EPA statutization parameters from EPA/540/S-95/504, April 1996. SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION SAMPLERUS I SIGNAMURES SAMPLING INITIATED AT SAMPLING ENDED AT Carry Lobe ED PARAMETER MORATORING EQUIPMENT MODEL & SO PRIFICACE WI THE FILTERED FIELD DECONTAMINATION (0) DUPLICATE n Orașian Emmanem Luni MATERIAL CODES 45 a mir tron Glass CG a Chone Genes. PP - Polymon Avenue S. V. Sacretto T. e. Tanker D. - On per 15 red Par WELL CONDITION CHECKLIST (Grade appropriate appropriate appropriate appropriate (and a popular abita) Type Flush Mount / Sland Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None vidence of Rain Water Between Steel & PVC? Y / N is Well Plumb?: Y / N PVC Riser: Good / Damaged / None Everidence of Ponding Around Welli? Y. / N. Concrete Collar: Good / Cracked / Leaking / None REMARKS:



508-339-3200

MONITORING WELL SAMPLING LOG Low Flow Sampling

तांगा

Savereign Consulting Inc. 4 Gpa: Spanistry, Sont 1787 Holyaka, MA 01040

6lyalis, MA 01040 413-940-0650

TRIDUECT HANE HOUSEL LOCATION CISECH MINIBER 25 10 4-180 D'Vans SIND TO CYA PIE READING WELL DIAMETER OM TO MOTION OTHERS DEPTH TO WAS (co'ne) (feet) (ments) 3/1 PURGING DATA TUBING MATERIAL CODE UMP EQUIPMENT MODEL & SERIAL III TURING DIAMETER Grenoump owhes) (see induse) ALLONS WELL VOLUME PURGE: 1 WELL VOLUMB: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallum Pur Fnot): 0.75 = 0.02: 17 = 0.04. 1.26 = 0.06. 27 = 0.06. 37 = 0.03. 37 = 0.03. 37 = 1.02. 35 = 1. 1 GALLON = 1.785 LITERS TOTAL VOLUME PURGED IPURGING INITIATED AT PURGING ENDED AT GALLONS agal 741 73-75 211. LITERS OSCI 1090 DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (legt) FLOW RATE Water Level Stable VOLUME PURGED DURING TIME INTERVAL PUMP SETTINGS DEPTH TO WATER (leet) INTERVAL (mL) (Yes or No) (min) [mL/min] START END DEPTHTO TURBIDITY DISSOLVED TEMP SPECIFIC COLOR ODOR FLOW pH RATE WATER OXYGEN CONDUCTIVITY (NTU) ('C) (Vns) (describe) (describe) (mg/L) (o)L/min) (feat) (us/cm) 146 silinVi 1100-600 ITE/mi (+/- 10%) (3-5 overelent) 118 1030 305 109 192 6.42 max Cloud None 196 , 14 6.36 15.08 -1017 Clout None 1040 125 mar. .14 6.37 -115 Many 125 1050 max EPA stabilization paramidus from EPA/540/S-95/504 April 1996. SAMPLING DATA SAMPLED BY (PRINT) / AFFICIATION SAMPLER(S) SIGNATURE MAPUNE INITIATED AT 0 20 Erin Feler SAMPLE PUMP FLOW RATE (mt per numule) FELD PARAMETER MONITORING CONFINENT MODEL & SERIAL IN PURPOR RUBING BEPTHIN WELL eser wen seven (A) (b) PHITER SIZE ____ mm POLO DECONTAMINATION 6) N 00.3 DUPLICATE Гиськоп Ефизичной Туре MATERIAL COORS AG = Ambertainte GG : Clean conc PE : Begangen e PP Prigroppine B : Stear 1 = Tellen Originari Specific WELL CONDITION CHECKLIST (circle appropriate item(s) cross out if wit applicable) General Condition: Good / Needs Repair Type: Flush Mount / Stand Pine Well Caps: Good / Broken / None Lock: Good / Broken / Mone Evidence of Rain Water Between Steel & FVC? Y / N is Well Plumb'e Y / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS:

Savereign Consulting me 4660 South Multi Street, Saite 202 Manshell, MA 02040

208-339-3200

MONITORING WELL SAMPLING LOG

Savereign Consulting the 4 Open Supare Way Suda #307 Historie MA 01040 413-610-0600

CONSTRAINE CIS	ACF "	Dendus	VIELL DIAMET	484 1	(N)	9	осети 10	2-32.	1 (C)	SAMO-113 - (31.0
			(mellion 3)		((ce) 11/1)		(teet)	114	(ppmy)	14/-1
THIS DIAMETE	F		TERIAL CODE	PURGE PUR	PURGING D	PATA		PUMP COUIPM	ENT MODEL & SERIAL #	
none y		(see helow)	Polt		yany?	-		GALLONS	LATE	वर
			N. WELL DEPTH - 5				T-10-1			
LL CAPACITY		INITIAL	PUMP OR TUBING DE	PTHIN FINAL PULL	PORTUGING DEPT	1 02 6' = 1,47	GINITIATED AT		ON = 3,785 LITERS	GALLONS -
33 - 6	35	WELL (SL1	WELL (feet)	84'	Ad	135 IIS	-	990	LITERS
	EVEL STABL	IZATION	DEPTH TO WATER	WITH PUMP			100 110		GWO.	
IME INTERV	3 11 2 11 11 11 11		(feot)	PUMP SETTING	SS .		DEPTH TO W	ATER (leel)	Water Level Stable	VOLUME PURGED DUR
(min)	(mL/mi	n)	-		-		START	ENO	(Yas or No)	INTERVAL (mL)
	-	-								
	-	-		-						
-	-	-								
		-					-			
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODDR
_	RATE (niL/min)	WATER (leet)	(NTU).	OXYGEN (mg/L)	19 00 -	(,c)	CONDUCTIVITY (jis/tm)	(my)	(describe)	(describe)
5 minutes):	(cocoo introlo):	1-1- 031-) e/- (0%)·	(*z- 10%)*	16.0.42	\$4/ 33EF	(4/- 3X)*	(+A 10mV)*		
200	200		max	1110	641	17.27	313	-11/	Claray	Mone
alo	200		Max	1.94	640	10:37	318	-114	cloudy	None
200	200		max	119	6:34	14.83	3110	-115	cloudy	MOVE
								1 ()		
541						2 - 31				
- 11										
						100		ILE	Li como	
- 9.7		v 16 1			100	- ×.		V 40 - 2		
	- Tr - T	1007						0		
				-						1
	-		-	+		-				
PA statemento	i parameters from I	CPA/540/S-95/50	1 April 1996	-	-	¥			L	
	RUNT) / APPILIATIO				SAMPLING	DATA		- Constant		To company to the second
27111211	in tole			PER(S) SIGNATUR	Coba			100	CINGINIMATEDAT	SAMPLING EMOTO AT
	E DEPTH IN WELL		UNID FLOW RATE (ml.	Cicu V	(PIDLU PARAMET	ER MONITORIN	IG FOUIPAIENT AN	DEL A SERNAL	992	1932
st)		3 13 46	22.00.00.00.00.00.00.00.00.00.00.00.00.0	2.3.30						
LD DECCHITA	MINIMATION (V)	N		O FILTERED (*)	(i) PILTERS	37E			DUPLICATE	v (E)
ICRIAL COORS	100			льн Ефиривы Туре Дели — РР - Регунора	une k - Skrite	T-Tulsia 0:	may visus to			
and second second				CONDITION CH				applicable)		
oe Flush	Mount / Stant	1 Pipe	General Condit	ion Good / Ne	eds Repair	Well Caps:	Good / Broke	en / None	Lock: Good	Broken / None
			PVC? Y / N					/ Damaged	/ None	
	Ponding Arou	and Wellt? Y	/ N Co	ncrete Collan I	Good / Cracke	ed / Leakir	ng / None			
MARKS.										

Sovereign Consolting Inc. 9656 Saniti Man Strum, Sano 202 Mansheld, MA 02040 500-330-3200

MONITORING WELL SAMPLING LOG

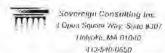
Time

Sovereign Consulting Inc. 4 Open Sipere Way, Sailo 1907 Helyoko, MA 11090 4 13-540-0650

OJECT NUM	SAC DO		(mcNes) 3/	e i	DEPTH TO WATER		DEPTH TO	AIJ ROLLOW	PID READ (FI) PV)	LANY)
IBING DIAME			TEMPL CODE	PURGE PUM		DATA		PUMP EQUIPME	ENT MODEL & SERIAL II	
elius) Y		(see below)	AL WELL DEPTH - STA		Pury Pero	APACITY		GALLONS 1	ur	ERS
		0,75 = 0.02,	1"= 11.04: 125 = 0.06.	2" = 0 16, 3" = 0.37	, 4 = 0.65, 5 =	1 02, 6'= 1.47	12" = 5.08	1 GALLO	N = 3 785 LITERS	TOTAL VOLUME PURGED
PTH (feet)	INTERVAL	WELL (PUMP OR LUBING DEP	WELL (leg).	OR THRING DEPT	HIM PURGIN	GINITIATED AT:	PURGIN	IC ENDED AT	CALLOHS
	3-95		11	90	<i>l</i> *	13	55			LITERS
WATER	VAL FLOWR	OF 800 YOU. 10	DEPTH TO WATER V	PUMP SETTINGS			DEPTH TO W	ATER /(oal)	Water Level Stable	TVOLUME PURGED DUR
(min)	(n:L/mir			FUMF SETTING			START	END	(Yes or No)	INTERVAL (mL)
1405										
TIME	FLOW FLATE (mUmin) 1180-500 Int/min)	DEPTH TO WATER (lest)	TURBIDITY (NTU)	DISSOLVED OXYGEN (mg/L) (1// 10%)	HQ 4(0 -1+)	TEMP (°C)	SPECIFIC CONDUCTIVITY (us/:m) (1/: 3%)*	ORP (mV)	COLOR (describe)	ODOR: (describe)
CIO	300		max	-38	5.94	15.81	496	5.4	cloudy	Mang
420	300		max	.32	5.77	Holds		- 25 8	clady	Mone
1430	300		max	16c	5.81	16.77	508	-119	Cloudy	Hone
		-	1-3						J	
							-			-
							-			
	, ar	-			31 1				- X	1
					-	-				1
PA shibbad	ling parameters from I	EPA/540/5-95/50	4 April 1996		SAMPLING	DATA				
AMPLEO BY	IPRINT) / AFFILIATIO	140	SAM	LER(S) SIGNATURE		DATA		10.000	ING INITIATED AT	SAMPLING FADED AT
DANP OR THE	I (> \ C)C	L SAUPLE F	ONE ACOM HATE THE T	200	FIELD PARAMET	ER MONITORI	IS EQUIPMENT OF		<u>(ござ</u>	1) 11/1(2
and the same	C HOLTANIHATI	N	Paljest	FILTENEO (V) (vio Equipment Type					DUPLICATE	v (0)
NTERIAL GOD	ES AG - Arriva	whele EG - Ch		ONDITION CHE				appurcable)		
ype: Flus	sh Mount / Stand	Pipe	General Condition				Good / Brok		Lack. Good	/ Broken / None
			SPVC? Y / N				Riser Good	/ Damaged	/ None	
vendence EMARKS		ind Welli?	Y / N Con	crete Collar: C	Good / Crack	ed / Leakii	ng / None			



Low Flow Sampling



WELL DUNKETER 3 PROJECT HAVE UATE. VOELL IO PIERENONO CXEA DEPTH TO WATER. DEPTH TO BOTTOM **PURGING DATA** TUDING MATERIAL CODE PUMP EQUIPMENT MODEL & SERIAL IN (see below) mones) 7014 (DENDUMNA GALLONS LITTERS WELL VOLUME PURGE: 1 WELL VOLUMB: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (GOROUS PREFOUR) 0/5=002 V=004, 125=000, X=0.10, T=0.07, F=0.05, 5'=1.02, G=1.47, 12'=5.88

WELL SCREEN INTERVAL INITIAL PUMP OR TUBING DEPTH IN FURING DEPTH IN PURGING INITIATED AT WELL (Red): WE 1 GALLON = 3.705 LITERS TOTAL VOLUME PURGED PURGING ENDED AT GALLONS DEPTH (levi): 103-105 31505 LITERS POL 104 WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP. (feet) DEPTH TO WATER (feet) START END TIME INTERVAL | FLOWRATE VOLUME PURGED DURING PUMP SETTINGS Water Level Stable INTERVAL (mL) (Yes or No) (min) (mL/min) TIME FLOW DEPTH TO TURBIDITY DISSOLVEU SPECIFIC ORP COLOR ODOR CONDUCTIVITY RATE (NTU) OXYGEN (-C) (mV) (describe) (describe) (8) (mL/min) (mg/L) (leet) 1µ5/cm) (+1- 10%)-1100-500 na/nwi 150. 0.31 (-7. 164s) per air (4) 300 693 -3,54 200 Clouds None max 100 633 900 30 200 260 Clouds Mare Bool San 400 17 6.24 cloud None 1605 EPA stabilization parameters from EPA/MOS-95/104 April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION SAMPLERISI SIUNATURES SAMPLING INITIATED AT SAMPLING ENDED AT co fla EVIN FOR 610 PUMP OR TORING CEPTH IN WELL ELD PARAMETER MONITORING EQUIPMENT MODEL & SERV 1001 YSI GOUXL win to mond (1) (1) HELD DECONTANUATION () WPI ICATE (B) **Рамония Епрерациии** Туре MATERIAL CODES 16G - Jungos Oldan | EG - Elinit Giber PP = Player mona & visite me. T = Ealism Q Carme (Some to) WELL CONDITION CHECKLIST (and/s appendinals demis) cross and direct applicables Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps Good / Broken / None Lock: Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Welli? Y. / N. Concrete Collar. Good. J. Crucked. J. Leaking. J. None. REMARKS 15

Savereign Consulting Inc. 2058 South Meat Street Sinle 207 Manasinia, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG

uin.

Soverbigh Consulting Inc 4 Open Square Wile State IPDF Holyolm, M& 01040 413-bile-0660

U.S. A	ICT.	bevuns.	WELL DIAMETE	Ayer	PV N'		OEPTH TO	5 35	PIDREAD	SIMI WX
DECT NOMBE	"		(nuclear 3/	Υ	(toen) MAY		(feet)	MA	(blane)	NA
MING DIVINETE	R	TUBING MATE	RIAL CODE	PURSE PUN		DATA	- "	FUMP EQUIPME	INT MODEL & SETTIAL I	9
new /Y			Poly		pump	I S I Marie		GALLONS	Lif	CR5
			WELL DEPTH - ST				12' = 5 88	1 GALLO	N = 3.785 LIVERS	TOTAL VOLUME PURGED
LL SCREEN IN		WELL (Fee	MIP OR TUBING DEP	THIN FINAL PUMP WELL (foot)	OR TUBING DEPT	HIM PURGIN	G INITIATED AT	PURGIN	G ENDED AT	GALLONS: (2
2.80	-110.	5 11	0.5		0.5	17	20	17	25	LITERS
WATERL	EVEL STABL	ZATION 0	EPTH TO WATER V	NITH PUMP						
TME INTERVA	L FLOW R/ (mL/mir			PUMP SETTING	s ,		DEPTH TO W	ATER (leel) END	Water Level Slabis (Yes or No.)	VOLUME PURGED DURIN
	-					_				
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mL/min)	WATER ((cvt)	(NTU)	OXYGEN (mg/L)	100	(,c)	GONDUCTIVITY (u5/cm)	(mV)	(describe)	(describe)
	100-500 n(L/n)-n)*	1+- 037	(+// 10%)*	(4/ 10ts)*	(4/ D. LF	105-33[1	10/- 10]*	(1/2 TOME/IT		
	300		Max	129	6.60	16:19	607	-950	cloudy	None
715	300		Max	113	6-18	14.59	603	-339	cloudy	None
900	300		max	-11	6.14	14.106	603	-352	cloudy	XIONE
738	-								- 1/1	
			-							
-						-			-	1
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		-	-		-	+		-		1
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						-		-		
		-							1000	-
		100	J				-			-
				25. 3		1		-	13	***
-		-		*	100	-	-			
-			-		1	-	-		-	
PA stabilization	paremeters from E	PA/540/S-95/504	April 1986		4	1	-	-	-	
and the nation	TINT) / AFFILIATIO	N	leans	PLETE'S SIGNATUR	SAMPLING	DATA		TSAUD	LING INITIATED AT	SAMPLING ENDED AT
	W	20.00		1	2			1100	13040	17xta =7
UMP OR TURIN	G DEPTH INVELL	L SAMPLE PO	IP FLOW RATE SOLE	per minute)	FIELD PARAME	TER MONITORI	NG EQUIPMENT M			10000
rel)		تحللية	Tana							
FIN DECORTA	WINNING A	N	100	TO FOLL TERRETS OF THE SECOND TYPE	M DEALER	SOME DOWN			DUPLICATE	X M
ATERIAL CODES	AG + Ambes	Clear EG Clima		The PP = Despery						
COST - CO	AND ROOM			CONDITION CH					Paper Name	
	Mount / Stand		General Condition VC? 7 / N				Good / Brok Riser: Good			/ Broken / None
amence of t							2011	Lamageo	1 NONG	
vendence o	Ponding Arou	ing Welli Y	L M COL	icrete Collan.	SOCO / CINCK	ed / Fener	ng / None			

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Sovereign Consulting Inc 9056 South Mann Street Some 202 Exceptions, MA 02040 500-209-2200

MONITORING WELL SAMPLING LOG

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Sovereign Consuming Inc.
1 Dpan Emper Way State #30 /
1 Majobe, MA 0/040
115540-0550

MELL DIVISER US ACE DEVONS 10-01 DEPTH TO WATER DEPTH LOB meters 3/4 MA **PURGING DATA** TUBING MATERIAL CODE (see below) PURGE PUMP TYPE UMP EQUIPMENT MODEL & SERIAL #5 (sea below) Geogump GALLONS. WELL VOLUME PURGE: 1 WELL VOLUME (FOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gotons Per Food) 0.75 = 0.02, 1 = 0.04, 1.25 = 0.06, 2 = 0.16, 3 = 0.37, 4 = 0.65, 5 = 1.02, 6 = 1.47; 12 = 5.68 I GALLON = 3.785 LITERS TOTAL VOLUME PURGED INITIAL PUMP OR TUBING DEPTITION PHALPUMP OR TUBING DEPTH IN PURGING INITIATED AT WELL SCREEN INTERVAL PURGING ENDED AT GALLONS 01- 8 WELL (lea) WELL (lest): 9' 0850 0906 ITERS: DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (feel) TIME INTERVAL FLOW RATE PUMP SETTINGS DEPTH TO WATER (feel) Water Level Stabio VOLUME PURGED DURING (niL/min) (Yes or No) INTERVAL (mL) (min) FLOW DEPTH TO TURBIDITY DISSOLVED SPECIFIC ORP ODOR RATE WATER (NTU) DXYGEN CONDUCTIVITY (mV) (c) (describe) (nin/Linia) (lent) (mg/L) (µ3/cm) (100 500 ml/r (46- 10%) 14/ 14/ (+/- (OmV) (1/- II 3) 5-53 0900 7.34 113 Clour 300 11.26 alola 26 None 0903 300 5.38 265 109 clear 1 0 1104 None 300 0906 U 10.80 las des clear None EPA stabilization parameters from EPA/S10/S-95/50/. April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION 0930 trin Foley PULAP OR TURING DEPTH IN WILL IELD PARAMETER MONITORING FOURMENT MODEL & SE DECORATIONED & CATER-SOF LIFED DECENTALINATION & N msms Filtration Equipment Type Paymilyane PP - Driggengamin 5 - Steam T - Subject 0 - Commissions WELL CONDITION CHECKLIST (circle appropriate tients) cross and it not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Welli? Y / N Concrete Coltar Good / Cracked / Leaking / None REMARKS



Sovereign Consulting Inc. 4 Open supere Way Same #30; Holyake, MA #1040 #13-640-0550

7 30 10 10	1	(See Delow)	Editi COOS		PURGING D					
I VOLUME P I CAPACITY I SCREEN IN	1		10	WINGE PUM				PUMP EQUIPME	NT MODEL & SERIAL A	*
L CAPACITY	URGE: I WELL V		WELL DEPTH - ST	ATIC DEPTH TO WAT	ER) X WELL C	MESTY	-	GALLONS	107	ins.
	(Collons Per Foot)	075=007; 1	-004 125 - 000	2' = 0.16. 3' = 0.37	4° = 0.65 5° =	1.02 6' = 1.47.	12° × 5.08		N = 3 705 LITERS	TOTAL VOLUME PURG
	TERVAL	WELL (III	UMP OR TURING DE	PTH IN FINAL PUMP WELL (lee):	- 140	/	S INITIATED AT		G ENDED AT	GALLONS
	L				E	-		7.	35	LITERS
	EVEL STABLI	911177	DEPTH TO WATER (feat)	The second second		1				Too the suite and
ME INTERV	AL FLOW RA			PUMP SETTINGS			DEPTH TO WATER (Icol) START END		(Yes or No)	VOLUME PURGED DU INTERVAL (mL)
	-	_					-			-
_		-						-		
	-						-			
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	ρН	TEMP	SPECIFIC	ORP	COLOR	ODDR
3.1	RATE (mUmin)	WATER (feat)	(NTU)	OXYGEN (mg/L)		(.c)	CONDUCTIVITY (us/cm)	(mV)	(discriba)	(describe)
C Hamiles!	(100-500 mL/man)"	(+1- 0.3)	2 3 5	177- 10°61°	(+1: 0.1)	by est	10-20	At II	cloudy	114.202
40	300		390	2.49	6-99	19.02	401	91.4		Kone
45	300	-	500		6.19	11-67	401	75.9	Clongh	Mone
55	300	400	260	2.58	6.04	11.40	101	76.5	Cloudy	Hane
1000	300	+	90	3.28	5.99	11.35	400	84.3	clear	None
005	300		90	0.01	13.77	11.36	401	04. 2	Clear	None
30 100	IN DECEMBERS FROM B	w	SAU	PLETI(S) SIGNATURI	SAMPLING	DATA		SAMPI	IA DETAITHE DUL	SAMPLING ENDED AT
MP OR TUBI at)	A FORE-/ NO DEPTHIN WILL AKIMATION (S)	SALAPLE PL	MP FLOW RATE (INC.	D.FILTERED (3)		ER MONITORIN	КС ЕОШРМЕНТ М		DUPLICÁTE	1025
TORIAL CODES		taxs CG - Clea		nune PP - Polymany	una Sésdages	T - Tellon O	Other (Spierdy)			
				CONDITION CHE				upplicable)		



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Savoronja Consenting Inc. a Open Sausia Way Suda II307 Hulyaka MA 01040 31765100066

Law Clew Sampling

LIS ACE DOLORS			SECTION TO	1 40.		5-29	-10	MATCH TO SOLL		
			WELL DIAME		DEPTH TO WAT	NA	Diamen (O	VA CIM	PRO READ (posts)	NA
BING DUME		TUBING M	Pay	punce rui	PURGING IP TYPE	DATA		POMP FOURM	ONT MODEL A SCHIAL A	
-	Υ			CLOEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY					i ka	ras
			1 * 0 04 125 - 0 00		The St. 100 - 340		12° = 5 AB	CWTON2	ON = 3 700 LITERS	TOTAL VOLUME PURGEO
PTH (loci)			PUMP OR TUBING DE		ON TUBING DEP				NG EMIDEO AT	GALLONS
28-			29	-	29		1030			LITTIRS
CAMPAGE	LEVEL STABLI		DEPTH TO WATER (feet)	-117713						
TIME INTERV (min)	/AL FLOW RA			PUMP SETTING	S		DEPTH TO W	ATEH (feel) ENO	Water Level Stable (Yes or No)	VOLUME PURGED DURIN INTERVAL (mL)
-		-								
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pti	THAIP	SPECIFIC	ORP	COLOR	DDOR
3 5 minutesit	RATE (mL/intn) (100-600 mL/min)*	WATER (feet) (*/- 0.7)*	(NTU)	OXYGEN (Ing/L) (*): 10%)*	142 0.1p	(*C)	CONDUCTIVITY (us/on) (v) (si)	(mV)	(describe)	(describe)
035	300		270	6.27	6.26	11.94	377	98.9	cloudy	Nave
1040	200		600	4.53	6.13	11.21	380	87.2	cloudy	None
045	300		500	4.51	6-11	11.19	381	84.6	cloudy	None
055	300		230	4.49	6.08	11.09	385	83-2	1.96124	None
				-						
			7	.						
						-5-				
PA stabilization	on parameters from E	PAISANE OSIGN	Aunt 100C							
	200	(1) on 1 11	. 3	100 mg	SAMPLING	DATA			- American	
Erin	FO 164	Sau C	on E	ri Ha	A STREET A THEORY				HO O O	SAMPLING ERIDED AT
ot) 6	NG DEPTIVIN MELL	SAMPLE PI	UMP FLOW RATE (mL	per ministe)	PIELO PARAME	TER MOUNTGRIN	G EQUIPMENT MO	ULL & SFRIAL		
0.10.70.11	VVIINV 110M .	н	1000	DEFICTERED Y	N FILTER	90ZE			DUFLICATE	r is
ATERIAL CODES	5 AG - Amber (ilps ng cian		one PP's Polyskips						
une Elizab	Mount / Stand	Dina		CONDITION CHI					Look Cond	/ Reglun / Many
		Walter Street	General Condili PVC? Y / N				Good / Broke Riser Good		Lack Good / None	/ Broken / None
vendence c			IN Con							
EMARKS:										



Sovernige Consulting Inc. 1 sisy on Spicory West, Emby with: Hulyaka MA 01060

Low Liow Sampling 550-229-2200 412 996 0559 ROJECT NUMBER ACE DOLLOTE DAMES FARITAGE 10-01 5.27.10 DEPTH (field) PURGING DATA PUMP EQUIPMENT MODEL & SERIAL UL TURNO MATERIAL COUR URGE PUMP TYPE (Me Indow) POY (inches) Geopump GALLONS 3 WELL VOLUME PURGE: TWELL VOLUME: (FOTA), WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY I GALLON = 3 785 LITERS WELL CAPACITY (Gollons Per Foot) 0.75 = 0.02: 1" = 0.04, 1.25 = 0.06, 2" = 0.37, 4" = 0.65, 5" = 1.02, 5" = 1.47; 12" = 5.08 TOTAL VOLUME PURGED: INSTIAL PUMP OR TUBING DEPTH IN JUNAL PUMP OR TUBING DEPTH IN JOURGING INITIATED AT WELL SCREEN HTERVAL PURGING ENDED AT GALLONS: WELL (feet) 39' 155 UTURS 1128 38-40 WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP (feel) FLOW RATE DEPTH TO WATER ((ec.))
START END VOLUME PURGED DURING TIME INTERVAL PUMP SETTINGS Water Level Stable (Yes or No) INTERVAL (mL) (min) (mL/min) THAE FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR ODOR RATE WATER OXVIGEN CONDUCTIVITY (describe) (doscribe) (NTU) (mV) (feet) (mg/L) (millmin) his/em) 101 011 W/ 35P (+/- 10m/V)* 1.6 (0%) (100 500 ml Anin) (10 10%) (1/ 28) .56 R.43 5.98 1115 300 110 Cleen None 100 .43 5.98 12.14 672 69.3 None 300 1130 80 Nana 300 6.00 11.811671 627 ILAS EPA slabilization parameters from EPA/540/5-95/504 April 1990. SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION SAMPLING INITIATED AT SAMPLING ENDED AT SAMPLERUS) SIGNATURE Enh Follow sou con 1130 40 NECD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL IN PURE OR TURNES SEPTIMEN WELL SAMPLE TITME FLOW BATE IN L. per in mile) 39' FIFLD-FILTERED () THE TERR SIZE PO (9 FIELD DECONTAMINATION (S) N DUFLICATE Surraman Equipment Type MATERIAL COOKS AG = Ainjun Glass CG = Chuir Glass WE = Polyomytaine OF = Polypropytere S = Solvant T + Tallon O > Other (Steedil) WELL CONDITION CHECKLIST (circle appropriate tremps), tross out if not applicable) Type: Flush Mount / Stand Pipe General Condition. Good / Needs Repair Well Caps: Good / Broken / None Loca: Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plunib? Y / N PVC Riser Good / Damaged / None

Evendence of Ponding Around Well? Y / N Concrete Collar Good / Cracked / Leaking / None

REMARKS



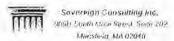
2010/119-11/06

MONITORING WELL SAMPLING LOG

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Sovereign Consulting Inc. Layer Fanate Way, June 11,007 Halyake, MA D1030 31 (3540.065)

US AC	E Le	ions	DA 6					2-9	7.10	10-151
IOJEGT HUM	OFR		METT DRYMET	en /4	Great N. H.	1	Section of the contract	A A	PICREAD (BROW)	MAJ
BIHS DIAME	TER V.		VERIAL COOK	PURGE PUM				PUMP EQUIPM	ENT MODEL & SERIAL 4	
10ey)	79	(see below)	POH		opum p			GALLONS .	- Jun	705
			L WELL DEPTH - ST = 0.01 125 - 0.06.	miere mirre	TER) X WELLS.		12° = 580	TGALLO	N - 1/MSLITERS	TOTAL VOLUME PURGED
LL SCREEN			PUMP OR TURING DEA			HUN PURGIN	GINIDATED AT		G ENDED AT	GALLONS.
\$ 48			49'	Yand	47'	110	45			UTERS
4 (-1 (C2))	LEVEL STABL	2010310	DEPTH TO WATER!				- Heaville	Des Fra	Water Level Stable	VOLUME PURGED DURI
(min)	VAL FLOW RA			PUMP SETTING	S .		START	END	(Yes or No)	INTERVAL (INL)
		_						-		
	_									
			r	I Table 1						
TIME	FLOW RATE	DEPTH TO WATER	TURBIDITY (HTU)	DISSOLVED	hн	TEMP (°C)	SPECIFIC CONDUCTIVITY	(mV)	COLOR (describe)	(dascribe)
3-5-minuma)*	(mL/min) (100-508 n/L/min)*	(icel)	(47- 10%):	(mg/L)	110 40	(*/ 3x)*	(#2/cm)	(*), tomvy		
1150	300		170	-56	6.43	12.78	216	48.3	clear	Mone None None
155	300		80	.59	6.4	1a.53		431	clear	None
1900			65	.43	6-38	19.46	a18	36.1	clear	None
	-			-		-	-		-	-
				-	-			-		
	-	_								ł
	1									
	11									
							×			
			1					3.11 2.11		
PA stabilizati	ion parameters from E	PAG-075-95/504	April 1996	A William	SAMPLING	DATA	351			
	PRINT) / AFFILIATIO		SAM	PLERIS) SIGNATURE				-	NG INITIATED AT	SAMPLONG ENDED AT
ENT	Foly 5	O CON	JMP FLOW RATE INIT S	ere p	TEIGIT PARAMETI	SE MONITORIE	IG EQUIPMENT MO		205	1910
mu 49				A 10-118	SEE (MICHAE)		and the second second second	and a		
ETD DECOM	O NOHAMINAT	N		FILTERED 8	on the s	IZE			DOPLICATE	w (N)
METHAL CODE	ES AG : AMBET	Glass CG = Clus		ene PP = Polypoord	nove S = Bosnice	f a Tallon 10:	Опна (Бумл-Тут			
				ONDITION CHE						
	h Mouni / Sland		General Condition							/ Broken / None
	of Ponding Arou		PVC? Y I N On	Is Well Pl crete Collar: G			Riser: Good na / None	/ Damaged	None	
EMARKS		20 21 Y 10 8 - 1		The Sound of	, sieming	- Commit	3			-



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MONITORING WELL SAMPLING LOG tow Plaw Sampling

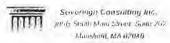
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Savetenge Consulting Inc. 6 (1991) Majora Res, Aug. 1896 Halyaka 13h datan

Mission Asia (1904) Mission Asia (1904)

PRESENT LOCATION 5.27.10 US ACE 51100-10 C Devons WELL ENAMETER DEPTH TO BOTTOM DEPTH TO WATER NA NA **PURGING DATA** TIMP FOLDEMENT MODEL & SERVAL IN POH (sen helow) Geopune 1 GALLON - 3.789 LITERS WELL VOLUME PURGE: 1 WELL VOLUME (FOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (GUIMM-PEFFOU) D75 = 002 Y = 0.04, 125 = 0.00, 2 = 0.16, 2 = 0.17, 4 = 0.65, 5 = 1.02, 6 = 1.47, 12 = 0.00

WELL SCREEN INTERVAL. INITIAL PLANT OR TUBING DEPTH IN PERFCUENCE AT TUBING DEPTH IN PURGING MINIATED AT TOTAL VOLUME PURGEO PURGING ENDED AT GALLONS. DEPTH (leut): 591 LITERS 59' 58-60 1215 DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (feet) FLOW RATE VOLUME PURGED DURING INTERVAL (mL) TIME INTERVAL PUMP SEFTINGS DEPTH TO WATER (feet) START END Water Level Stable (min) (mL/min) (Yes or No) TURBIDITY DISSOLVED FLOW DEPTH TO SPECIFIC COLOR ODUR RATE WATER (NTU) DXYGEN CONDUCTIVITY (G) (miV) (describe) (describe) (mL/mln) (feet) (mg/L) (#5/cm) (+/- DIF (1/- 10mV)-1100-500 mL/m (11. 0.3) (*/- 10%) 1.19 140 6.41 12.18 48.3 300 290 New 1992 300 35 299 130 . 27 32.8 clear 1230 Mone 1235 11.60 0 200 200 ale 6-25 304 22.3 cleur 1240 24 300 220 6.as 307 17.0 clear None 300 170 93 6.05 307 16.5 1245 clear MONR EPA stabilization parameters from EPA/540VS-95/501. April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION SAMPLERIS) SIGNATURE SAMPLING INITIATED AT SAMPLING ENDED AT SOU COA 300 1250 ELD PARAMETER MONITORING EQUIPMENT MODEL & SE D DETERTIZE pm PIELD-FILTERED (V) 0 FIELD DECONTAMINATION (V) N DUCTICATE Filtration Equipment Type MATERIAL COURS AG - Autor Glass CG - Down Glass PE = Proyectiveries PE = Proyectiveries S = Solection T = Tribin O = Orea (Specify) WELL CONDITION CHECKLIST (circle appropriate nemas), cross out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / Nune Fividence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N. PVC Riser; Good / Damaged / None Evendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leoking / None REMARKS



500-2 19-2200

MONITORING WELL SAMPLING LOG

US A	CF De	was	A-Y	PATHON PA				5.2	7.10	10-01
CJECT (PJM)	NEIS.		(inches)	3/4	(finel)	MA	(leed DELCHIO)		(Muns) Utu SEVO	NA
BING DIAME			ANTERIAL CODE	punge noi				FUMP EQUIPM	ENT MODEL & SERVAL	15
fina)	/4	(See Indo	FINA	TATIC DEPTI TO W	pain			GALLENS	- Jun	EPS
			TAL WELL DEPTH S			102 6'= 147	, 12° - 5 BU	1 GALLO	N = 3705 LITERS	TOTAL VOLUME PURGED.
LL SCREEN	MITERVAL	WELL	AL PUMP OR TURING DE			HIN PURGIN	1350	PURGIN	G ENDED AT	GALLONS: 3
(08-70	0	69		69	te	1000			(IFERS
Carl Carl	LEVEL STABL		DEPTH TO WATER (feel)							
IME INTER	VAL FLOW R			PUMP SETTING	is .		START	ATER (Igo) END	Water Lovel Stable (Yes or No)	VOLUME PURGED DURIN WIERVAL (mL)
		-								
								7		
TIME	FLOW	DEPTH TO	A STATE OF THE PARTY OF THE PAR	DISSOLVED	pH pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mL/min)	(leet)	(UTU)	OXYGEN (mg/L)		(,c)	CONDUCTIVITY (u)(em)	(mV)	(dascriba)	(describe)
111 ~	300	(+/- 0.57°	450	2.04	111.011	B 8	378	-34-9	della	1110=
415	300		550	- 88	6.45	13.00		-33.0	cloudy	NAME
430	300		400	.39	6-39	19.40		-39.	cloudy	None
435	300		200	.35	6.39		395	-40.6	cloudy	None
ردد	.,		13-0		1001	100		10.0		1
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	184			40	1				5	
	22-25-									
PA statilizat	ion paramelins from	EPA/540/S-95/5	04 April 1996							
- 10	705,257	3.3	WE SE	100130	SAMPLING	DATA	1197			1000
Wereb ax	FRIMI) / AFFILIATI			C	2			7,285	140	1455
	+ de	SOL L	EUMP FLOW HATE (MIL	per municies	BULLUF ARAME!	ER MONITORIA	NG EQUIPMENT ME			11433
cil										
i n necon	TAMPIATION TO	K N	1000	антитемен (У) икол Едиричен Тую	C MITER S	51215 (1)19			OUPLICATE	" (N)
TERIAL CODE	ES AG = Analis	Cluse CG - C		dens PP = Polyjanjy						
West .		A Disc		CONDITION CH					Name of	/ Wash as Assess
	h Mount / Stan I Rain Water Be		General Condit & PVC? Y / N	iun: Good / Ne Is Well P						/ Broken / None
			Y / N Co					. www.msaco	/ Trems	
EMARKS										



500-339 van

MONITORING WELL SAMPLING LOG Law How Sampling

Sovereign Consulling Inc TTTT 1 Open Submer 1999, Sone #267 такуона МА штола

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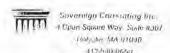
US ACE CHOOSE CTADCATE SA WELL DATE Sevons . 27-10 DEPTH TO NOTION 13 0 Me PIO STADE NY 100 mm 1 1 1 1 1 (print) NA [866] Heely. **PURGING DATA** NUMP EQUIPMENT MODEL & SERML M TURING CIAMETER TYPE (see titlow) Poly Geopumo WELL YOLUME PURGE: 1 WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER), X WELL GAPACITY WELL CAPACITY (5000) PC FOOT 075 = 002, 1" = 0.04, 1.25 = 0.06, 2" = 0.56, 3" = 0.17, 4" = 0.65, 5" = 1.02, 6" 1 GALLON = 1785 LITERS TOTAL VOLUME PURGED PURGUIG INITIATED AT PURGING FHIDED AT GALLONS WELL (leat) WELL (leef) DEPTH (Icet) LITERS 74-76 1515 DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (feet) TIME INTERVAL FLOW RATE PUMP SETTINGS DEPTH TO WATER (feel) Water Level Slable VOLUME PURGED DURING INTERVAL (IDL) 2 (min) (mUmin) START ENO (Yes or No) TIME TURB:DITY DISSOLVED SPECIFIC COLOR CDOR FLOW DEPTH TO TEMP URP RATE WATER OXYGEN CONDUCTIVITY (MTU) (+C) (WV) (describe) (describe) (mg/L) (mil/min) (feel) (µ5/cm) 10/- 10% 14- 10%7 La/- 5%) (3-5 mirroren 300 150 2.04 459 Clear 1530 6.56 14.84 60-0 None 1536 -59.9 60 1.87 466 Clecr 300 6.54 14.35 Mone 33 1.90 63.8 1540 300 6-5414.4 469 cleur None 100 * EPA stabilization parameters from EPA/SARIS-95/504 April 1995 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION AMPLING INITIATED AT 535 SOU COM 1545 FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL RE PILLED DECONTAMINATION ON N DUPOLATE (11) Pensaloo Equipment Lype MATCHIAL CODES AG - Amisir Glass - CG - Clear Ulece PE : Propolitytene PP > Proposity of the Second 7 - Tulion G > Other (Specily) WELL CONDITION CHECKLIST (circle appropriate item(s), cross out it not appricable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb? Y / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Wellt? Y: / N Concrete Collar: Good / Cracked / Leaking / None REMARKS 5

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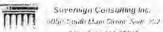
Severoup Crossiting to: 9090 South Munificent State 202 At 1956 H9 1700 506-119-1700

MONITORING WELL SAMPLING LOG

Low Llow Sampling



5.48.10 10-09 Ayer US ACE Devons PURGING DATA PSO READ (Marie) NA mines 3/4 (fect) MA FURNIC MATERIAL CODE THE PUMP TYPE FUMP EQUIPMENT MODEL & SCRIAL IIIS TUBING DIAMPTER (see below) Poly mentry /4 Greeou mp GALLONS WELL VOLUME PURGE: 1 WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WFLI CAPACITY (Callons Per Foor) 075 = 002: 17 = 004: 1.25 = 006: 2 = 0.16: 3 = 0.37, 4 = 0.65; 5 = 1.02; 6 = 1.47; 12 = 5.88 I GALLON = 3786 LITERS TOTAL VOLUME PURGED HINTIAL PUMP OR TURING DEPTH IN PHAL PUMP OR TUBING DEPTH IN PURGING INITIATED AT WELL (fort) WELL SCREEN INTERVAL PURGING ENDED AT GALLONS 0836 LITERS 0800 20.33 DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (feet) TIME INTERVAL FLOW RATE PUMP SETTINGS DEPTH TO WATER (feet) Water Level Stable VOLUME PURGED DURING (mL/mln) END (Yes or No) INTERVAL (ML) (min) FLOW DEPTH TO TURBIDITY DISSOLVED SPECIFIC ORP COLOR DDOR RATE WATER (NTU) OXYGEN CONDUCTIVITY (mV) (describe) (doscribe) ('C) (tent) (millimin) (mg/L) lus/ent) 00 500 mLm (st. 10%) 104 0.11 14/- 33/ THE LOWN (-1- 10%) (11) ASO 300 42.1 10.43 830 2.49 71 76.6 Clear 17.93 None 300 63 11.97 Clear 833 10.33 95.4 None 97.1 836 6.82 62 10.34 Clear None EPA stabilization parameters from EPA/510/S-95/504 April 1998 SAMPLING DATA SAMPLED BY (FRINT) AFFICIATION AMPLING INITIATED AT SAMPLING ENDER AT 840 FUMP OR THING DEPTHIN WELL SU) CON JELD PANAMETER MONITORING FOURMENT MODEL & SERIAL US (eet) 21' 300 FIELD FILTERED (15 & FILTER SIZE HELD DECONTAMINATION () N OHIM BOATE msmsD AG × Andini (Slass CO - Clean Glass PR - Programpylann S. S. Salame T. Tenon O. Chock Sperdy) PE Polyellistene WELL CONDITION CHECKLIST (circle appropriate item(s), cross out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser Good / Damaged / None Evendence of Ponding Around Welli? Y. / N. Concrete Cultar. Good. / Cracked. / Leaking. / None REMARKS ٠,٧



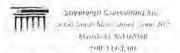
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Suspension Consolung Inc. Lapun Square May Sustension Bulyaki, MA 01040

Manshelo, MA 02046 Low Flow Sampling 508-329 3200 417-540-0650 WELL DIVINETER STEEL BY HEATT I DEVOUE 5.28.10 US A F 10-09 Drugas DESTRITO BO PHO TYENDIN DEPTH TO WATER (lee) NA theat PURGING DATA PURGE PUMP TYPE PUMP EQUIPMENT MODEL & SERIAL IIS WELL VOLUME PURGE: 1 WELL VOLUME: (101AL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (and below) Pay SALLOHS WELL CAPACITY (CARIMI Per Foot) 0.75 = 0.02: 1° = 0.04; 1.25° = 0.05; 2° = 0.05; 4° = 0.05; 5° = 1.02; 0° = 1.47; 12° = 5.80
WELL SCREEN INTERVAL | INITIAL PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DEPTH IN | PUMP OR TUBING DE GALLON - 3785 LITERS TOTAL VOLUME PURGED GALLONS 3 IPURGING INITIATED AT PURGING ENDED AT WELL (leet) WELL (Inci) DEPTH (lost) 0910 0940 LITERS 30.32 DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (feal) Water Level Stable TIME INTERVAL FLOW RATE PUMP SET FINGS DEPTH TO WATER (feet) VOLUME PURGED DURING INTERVAL (mt.) (Yes or No) (min) (mlumin) START FI.OW DEPTH TO TURBIDITY DISSOLVED SPECIFIC COLOR ODOR CONDUCTIVITY RATE WATER (NTU) OXYGEN CO (my) (describe) (describe) (niLlaiin) (mg/L) (feel) lp5/cml (se 10%) 82 213 920 300 832 6.50 14-72 Cloudy 64-6 NAME 925 107 214 58-B 300 10.06 6.26 13.63 None 6-17 930 300 927 13.33 6.04 219 643 Cloud Mone 940 596 17.89 393 21.10 Llook 300 MADR EPA statilization parameters from EPA/510/S-95504. April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION AMPLER(S) SIGNATUR SAMPLING WITHATED AT AMPLING ENDED AT 0945 Ecin Foley 11 ISSUADLE PLMP FLOW PLATE (MIL DEP MAI 10 00 PUMP OR TURNIC DEPTH BY WELL TELU PARAMETER MONTORING EQUIPMENT MODEL & SERIAL RS 31 306 FIELD FILTERED (Y) 0 HIELD DECONTAMINATION (Y) H DOMESTE Edication Environment Type MATERIAL CODES PF. • Proyectiylene PP = Occypregiylene S = Secone T = Tulkin Θ = Cliner (Specify) Ad - Amber Class Od - Class Glass WELL CONDITION CHECKLIST (circle appropriate names), cross until not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps. Good / Broken / None Lock: Godo / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb? Y / N PVC Riser Good / Damaged / None

Evendence of Ponding Around Well? Y / N Concrete Collar: Good / Cracked / Leaking / None

REMARKS:



Sovereyn Consulting tac 1 Cristi Square Way Street 1202 Thilyon: MA D1040 413.5-(0-0556

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1211	Ct - De	ven	art sure	My 11	117		шентито	6.1	-01010	10 -02
ALC: THUMIN	16.H		(actors)	LR V	(less)		(tent)	вогтом	(MONA)	146
IRIC DIAMET	10	Trubing MAT	ERIM PODE	PURCE PUR	PURGING	DATA		PHART ECHIPM	INT MODEL & SERVAL O	1
Nes I	74	(AND OCION)	144	-11 -0000	Gener	P			V	
			LWELL DERMI - ST		D. Della Carrie			GALLONS		ers
LL CAPACITY LL SCHEEN II			= 0.04, 1.25 = 0.06 UMP OR TURING DE				GINITIATED AT		G ENDED AT	GALLONS
PTH (feet)	40	WELL (le	et)	WELL (leet)	4,	1	026		200	LITERS
VATER L	LEVEL STABL	ZATION	DEPTH TO WATER	WITH PUMP	11	1	CAB	1 2	08	
IME INTERV	AL FLOWR		(feat)	PUMP SETTING	S	,	DEPTH TO W	ATER (feet)	Water Lavel Stable	VOLUME PURGED DUR
(min)	(mL/mi	0)					START	END	(Yas ar No)	INTERVAL (mL)
TIME	PLOW	DEPTH TO	TURBIDITY	DISSOLVED	На	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mi/min) (100 fon mi/min)	WATER (feet)	(NTU)	OXYGEN (mg/L))*/ 6.1p	(vc. par.	CONDUCTIVITY [µ5/cm) (~/ 390*	(mV)	(discribe)	[describe]
038	310	1	/042	9.32	5.99	13 95	703	9219	Cloud	200
042	350	//	8/6	4.65	6.00	13.17	704	394	Clark	There
347	350	1	587	4.70	6.00	13.68	704	40.7	alesto	And
151	Ú715	1	434	4.83	6 02	13.35	704	419	1011	Dong
755	550	1	344	4.76	603	13 52	700	455	14.0	100
w	5170	1	265	4.85	104	13.13	70 b	466	120	Pin
05	1115	1	799	458	6 (19	1536	7201	48 8	12.1	And
12.2	117	1	178	4197	12	18 115	12.	C7- 1	11.1	1
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PA siabilizatio	on parameters from E	PA/5/1/15-95/504	April 1996	1.	1				1	
ANDI TOTI DIV IS	HINT) / AFFILIATIO	N	lexo	PLER(S) SIGNATUR	SAMPLING	3 DATA		Teanor	PAG BATTATED AT	SAMHUNG ENDED AT
1.1	1/20	15	-		11	11	1	1/2	11. 15	0.181.5
	NG DEPTHUN WELL	SAMPLE PU	HE FLOW RATE (ML	por midel	SIELD PARAME	TER MONITORII	NG ECHIPMENT MC		47401110	11105
:0	41		350							-
LD DECONT	AMINATION (?)) n		D-FILTERED (*) June Equipolizat Type:	N FRITE	SINE AZ MU			tour mass	· (1)
TERIAL CODES	9 Atj = Amne)	CHAIS CO - Clark		term RP - Program						
nor en e	De at 100	I Diam		CONDITION CHI					YEAR WAY	V Barbara V Maria
	Mount / Stand Rain Waler Bel			ion: Good / Ne	eds Repair lumb?: Y / I		Good / Broke Riser: Good			/ Broken / None
INCLINE OF				ncrete Collar: 0				Damaged) Indiana	
endence o	of Pondina Arou									



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Sovereigh Consulting the or a free skip, some teap, teap, are kill private 11 x 540 (1964).

			(acres)	-1.4	DEPTITIONATES (led) PURGING D		(frei) A		(open)	
UNG DIAME	TEH IV.	(See below)	TERIAL CODE	PURGE PUM	evaler			PUMP EQUIPM	ENTAIDRE & SERIAL W	V
LL VOLUME	PURGE: I WELL	VOLUME: (TOTA	AL WELL DEPTH - STA			APACITY	201	CAFFONS	Lin	RS
			V = 0.04, 1.25' = 0.06						N = 3.7/15 LITERS	TOTAL VOLUME PURGE
LL SCREEN PTH (feet):	INTERVAL	WELL (THIN FINAL PUMP WELL (firm)	OR TUBING DEPT	The Part of	G INITIATED AT	100	IG ENDED AT	GALLONS ~ 5.5
	7-50		51	9	51		140	16	123	LITERS
100	LEVEL STABI	4-4-4-0	DEPTH TO WATER V							
(min)	VAL FLOW F			PUMP SETTING	s .		DEPTH TO W	ATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DUR INTERVAL (ml.)
		-	-					-	-	
TIME	FI,OW	DEPTH TO	TURBIDITY	DISSOLVED	рн	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mUmin) (100/500 mL/min)*	WATER (feel)	(NTU)	OXYGEN (mg/L)	in our	(°C)	CONDUCTIVITY (((S/cm))	(mV)	(describe)	(describe)
152	400	1	atox m	1.91	6.19	13.10	7714	130	Class	And
158	400	1	11 11	176	6.20	1295	フバー	57	11.0	no.
203	Yw	1	1028	128	6.22	197	710	64	Clash	Dine
208	410	1	725	200	1.23	12.78	714	4.3	Charles	Do
2/3	400	1	464	208	1.24	1280	714	11.8	Charle	ani
118	400	1	37/	2/2	6.24	12.66	7/3	141	11.11	Three
2.23	400	/	333	215	6.24	1218	714	161	10.2	There
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		ng.								
PA stabiliza	lion parameters from	EPA/540/S-95/50	4 April 1996		BAMPLING	DATA				
AMPLED DY	(PRINT) I AFFILIAT	ON 10	SAME	LERIS PSIGNATUR		//	*	SAMP	LING INITIATED AT	SAMPLING ENDED AT
ball.	and Char		Citiber 1		1/1	1/		1	225	1643
JUP ON TUE	EL J	IL SAMPLE F	TUMP CON PATE IN	Er stimate i	FIELD PARAME	AD-WONITCH!	IG EQUIPMENT MO	DEL & SERVAL	AS.	
e Constantin	<u>) (</u>		900 FIELD	FRITERED Y	N FILTER	SIZE YY	-	_	Lagrana	^
74.7.78.	ITAKHHATION (Y) "		mal (amount took					Brita 6.300	0 "
ATERIAL COD	ES AG FAMS	ay Glossa — E.G. a P.le		ONDITION CH				npolicable)		
ype: Flu	sti Mount / Star	nd Pipe	General Condition						Lock Good	/ Broken / None
			RPVC? Y / N							3 4-3 5 10 10 100
			Y / N Con							

Sovereign Consulting the, 1981 John Ship Stept, and 207 Marklein MA 02040 SORE 1300 (200).

MONITORING WELL SAMPLING LOG

Savareagi Genstating inc Open Sapar Way 21 of 1807 Vulgar Mic (1840 11 (6-30 1953) Low How Sampling

ROJECT NUMB	DC 6 L	kans	MELL DIAMET	My n	DEPTH TO WAR		DEPTHIO	BOLLOW - 1~	PRESENT	NG 10 04
			(exches)	3/9	PURGING	DATA	(fact)	VIB	(tecome)	NIA
PRIS DIAMET (vis)	1/4	(SEE DELOW)	Poly	PURGEPLY	evan				INT MODEL & SCHIAL I	
		VOLUMES LIGITA	WELL DEPTH /S	TATIC DEPTH TO WA	TER) × WELL			ENCTIONS:	Cit	Lies
LL SCREEN		INITIAL	PUMP OR TUBING DE	PTHIN FINAL PUMP	OR TUBING DEP	THE PURCH	G INITIATED AT		N = 3.7HD LITERS OF ENDED AT	TOTAL VOLUME PURGE
60 -	- 67	WELL (61	WELL (1000)	61	1	1325		358	UTERS.
	LEVEL STABL	IZATION	DEPTH TO WATER		01	- /	رمر	1.7	220	
ME INTERV	/AL FLOW R		[(esi)	PUMP SETTING	S		DEPTH TO W	ATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DUR
- William										
TIME	FLOW RATE (mL/min)	DEPTH TO WATER (feet)	TURBIDITY (NTU)	DISSOLVED OXYGEN (mg/L)	μН	TEMP (°C)	SPECIFIC GONDUCTIVITY (us/cm)	ORP (mV)	COLOR (describe)	ODOR (describe)
251 5	776	111.0.37	21)	(11. 104)	100 014	1716	(4), 201,	(*) 10mV)*	11 .	10
77.	375	5	141	0.91	6.80	13.40	404	-190	19:01	The same
123	275	1	81.7	0.85	6.60	13.79	401	-57.0	Charge	Oin.
58	275	1	671	1.04	6.62	13/9	401	-378 J	Clor	Roy
	V		-				v .			
			1.00				·		1 12 1 15	
PA sigbilization	on parameters from	EPA/54IVS-95/504	April 1996				L			1
MILLEST DO A	PRINT) / AFFILIATIO	NA.	Jeon	menis) syanyhini	SAMPLING	DATA		Tearing	ING INITIATED AT	SAMPLING ENDED AT
MP OR TUR	Auf NG DEPTITIN WEL	70 / Co	C. C. P. I	11	160	TER MONITORN	NG EQUIPMENT AT		1400	1415
(a) (51		275		1					
LIN DECEDING	ALWATION (F) H		med Equipment Type) vaten	SIZE YSOU			TUDLEVIE	(3)
TEHIAL CODE	S AG = Almbei	Glass CG = Cica		ere FP - Palyphan						
vidence of		tween Steel &			eds Repair lumb? Y / I	Well Caps: N PVC	Good / Broke Riser Good	en / None		/ Broken / None
EMARKS:	7	& Sam	stry area	e ut g	nwel					



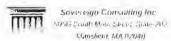
Trived ergo statistating one *(\text{\text{Pi}(t)} - \text{\text{Lim}(t)} \text{\text{Pi}(t)} \text{\text{Lim}(t)} \text{\text{Pi}(t)} \text{\text{Lim}(t)}
ROBERT HAND	SACE - L	Evens	rmajer 1) 60	Ax.	mo			(m) (-/	÷ /6	10-09
DUETT NUM	nca		MOTEL TURNALT	3/4	(len))	NA .	(lines)	Up	(ppms)	NA-
BING DIAME	TER.	TUBING MATE	ERIAL CODE	PURGE FUN	PURGING	DATA		PUMP EQUIPME	INT MODEL & SERIAL A	k
bon)	14	(see help-y)	Poly	40,000	Ger	unp				
CE AOLOWE	PURGE: 1 WELL	VULUME (TOTAL	WELL DEPTH - S	TATIC DEPTH TO WA	TER) × WELL	CAPACITY		GALLONS	100	TRE
LL SCREEN				2"=016. 3"=03 PTH IN FINAL PUM			GINIDATED AT:		N = 3 785 (TERS IG ENDED AT	GALLONS
PTH (leel)	4-14-14	WELL He	*)	WELL (feet)	-	341		1	4.1	LITERS
	LEVEL STABL	TATION I	#/	WITH BUILD	71	- /	545		1625	
6.524.534	1.31.00		(set)				DEPTH TO W	A TIPE III-M	Water Level Stable	VOLUME PURGED DUR
(min)	VAL FLOW R			PUMP SETTING	8		START	END	(Yes to No)	INTERVAL (mL)
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	ТЕМР	SPECIFIC	ORP	COLOR	ODOR
3-6 minutas)*	RATE (mUmin) (100-500 mUmin)	WATER (feal) (*/- 0.3)*	(UTU) (WOL 54)	OXYGEN (mg/L)	(AL 0.1)	(°C)	(#/ 356)* CONDUCTIVITY	(mV)	(dascribe)	(describe)
605	450	NA	405	1.20	672	13.35	445	-48.4	Church	1200
610	450	NA	275	1.08	6 69	13.23	445	-54.1	Church	Aire
615	450	ND	215	1.12	6.67	12 15	491	-x8.4	clus	Ane
620	450	NA	93.0	1.17	6 66	12 00	484	-186	Clery	Post
625	450	NA	82.2	1.19	6 66	12 97	436	-58.1.	Cles	10.
-		T P			-					
-	1000	100		-	1-7	+		-	· · · · ·	*
EPA siabiliza	bon parameters from	EPA/5/10/5-95/504	April 1996					-		•
AMPLED BY	(PRINT) / AFFILIATI	OM:	ISA	APLER(5) SIGNATUR	SAMPLIN	G DATA		SAMP	LING PATTATED AT	SAMPLING ENDED AT
Torrett	and DEPTHIN WE	1/2/Sw	KATI 4-3	1	1	Стухмонитон	NG EODIII-MENT M	QUEL & SERIAL	\$ 30	1640
eel)	V JANHARION (Y	1		CO FICTERED (C)		1 SIZE (1) jun			manica (E	* 6
ATERIAL COL		u (floria - K.G Clear		odkini Equipmeteril Type glore RP s Polyprip		1 of Fellows VI	* Other (Special	_		
- 500		4.6		CONDITION CH				applicable)	-	
	sh Mount / Stan		General Condi	lion Good / Ne	eds Rupan	Well Caps	Good / Brok	ien / None		/ Broken / None
vendence	e of Fonding Ara			oncrete Collar:				- Spanigle	a we retend	
EMARKS	S									
ndence	e of Fonding Ara							- Damaget	, MOUR	



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Soverenja Cansulting me, 1940 Samuel Waye Soile (1947) Tagerte MATI (1940) 4 (1948) (1920)

DING DIAMETS	e - Desn		WITTE CHARACT	- X/			CERTATO	RESTIGNA	PID READI	NG.
hers)			The American	3/4	(ted) V	19		UA	(ppos)	NA
-	en to	TUBING W	TERIAL COOK	PURCE PUR	PURGING I	DATA		РИМР ЕДИРМІ	MI MODEL & SERIAL ME	
	1/4	(see helow)	Pory		recordina	ALC: UNIVERSAL		GALLONS	(un	RS
			AL WELL CITY 14 ST 1 = 10 04: 125 : 0 06:		A 46 14 14 14 14	7.41-00.	2 40 - 600		IN = 3 785 LITERS	
LL SCREEN IN		WELL (PUMP OR TURING DE	PER IN FINAL MUMP	OR TUBING DEP	HIN PURGO	IG INITIATED AT		G ENDED AT	TOTAL VOLUME PURGED GALLONS
	82	Merci	81	WELL (ledi)	81	1	655	1	730	LITERS
	EVEL STABL	IZATION	DEPTH TO WATER	WITHPUMP	<u> </u>					
IME INTERV	AL FLOW R		History	PUMP SETTING	5	-	DEPTH TO W	ATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DURIN
y,y							977.0	Cons	(Tak diring)	invitational function
						_		-		
TIME	FLOW	DEPTH (O	TURBIDITY	DISSOLVED	рн	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (niUmin)	WATER (fed)	(NTU)	DXYGEN (mg/L)	11.00	(,c)	CONDUCTIVITY	(mV)	(describe)	(doscob)
-5 rivinutes)*	(100 500 rel /min)*	1+1-03)	(+E- (052)*	(10 to 10 to 1	(*#- 0 ()*	(97-3%)*	(1/2 3%)*	(+tr 10mV)*		
700	400	NA	any Horn	0.22	6.78	H 35	470	-355	ayelyBrin	Done
705	400	NA	791	0.88	6.72	13.68	435	-51.V	and	Ane
712	W	NA	189	11.17	6.08	1332	430	-53 8	away	Thre
717	400	NA	107.8	1.15	6.67	1344	428	-22.3	Club	Mr
725	400	NA	142.7	1.00	666	13/1	428	-77.1	Clus	Done
328	740	NIA	(0)	7	11					
130	400	NA	93.2	1.18	6 66	13.30	438	-17.7	Ches	Dine
							1000	P 1		
7	6.8		111							- 2
0	3 000	Total .			4				1,0	
				1						
PA SISURZANO	n parameters from	EPAS10/5-95/50	4 April 1996		SAMPLING	DATA				
MPLED BY (PI	HINT TAFFILIATE	ON / -	SAM	PLENIST SIGNATURE	3/1/	1 11		SAMP	ING INITIATED AT	SAMPLING FRIDED AT
trallen	Chile	/ June	eran	1/1	/ 14	Me	-		1735	
(total	isterium vit S 1	L SAMPLE !	appy (Charles)	manning /	PILO PARAME	- Senion	NG EQUIPMENT KI	ANT & SPRIAL	#s	
- VA	MINATION/V)	N	(OE)	DERLEMED ()	N HITTER	Saze 95 um			DUPLICATE	v (R)
MENIAL CORES				are PP : Paypoor	aria - Pri Augusi	7.1.700mi D	- The Control of		UGF/JK, 17 F	, (1)
HERIOLE CONTES	AIZ A HILLIAN	Oldes Cit Cit		CONDITION CHI				applicable)		
ype Flush	Mount / Stane	d Pipe	General Conditi				Good / Brok		Lock. Good	Broken / None
			PVC7 Y / N				Riser. Good			
	Ponding Am	and Welli?	Y / N Cor	ncrele Collar: C	Good / Crack	ed / Leak	ing / None			
EMARKS:										



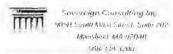
Sml 2130-0200

MONITORING WELL SAMPLING LOG Low Plaw Sampling

Sovereign Consulting tire THE ACCOUNT AND ASSESSMENT OF Thay ike the project

01.4590 0690

(feet) **PURGING DATA** PUMP ECHIPMENT MODEL & SERIAL US. (one below) PE WELL VOLUME PURGE: I WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY GALLON + 3 MISTLITERS TOTAL VOLUME PURGED. WELL SCREEN INTERVAL 10-13 INITIAL PUMP OR TUBING DEPTH IN FRIEND OR TUBING DEPTH IN PURGING INITIATED AT PURGRIG ENDED AT GALLUKS MOLAGO LITERS DEPTH TO WATER WITH PLIMP WATER LEVEL STABLIZATION (feet) FLOW RATE PUMP SETTINGS DEPTH TO WATER (fani) Water Level Stable VOLUME PURGED DURING (min) END (Yes or fle) INTERVAL (ML) DISSOLVED TEMP SPECIFIC COLOR FLOW DEPTH TO TURBIOITY ODOR INTUI OXYGEN CONDUCTIVITY RATE WATER (°C) (mV) (doscribe) (describe) (1001) (mg/L) (mUmin) (µs/cm) 14/ 1050 (-/ 19) 1.7- 331 142 14.20 700 50. Clear 133 4:24 Clear 10.89 EPA standisulou parameters from EPA/640/S-95/504. April 1996. SAMPLING DATA AMPLED BY (PRINT) / AFFILIATION SAMPLING NUTIATED AT SAUPLING EMDED AT SOUCON SAMPLE PLAN FLOW HATE INC FIELD PARAMETER INCHITORING EQUIPMENT MODEL & SERVAL IS SELOTTETERED Y BUPLICATE FILLE DECONTAMINATION Y N 3º 14 Tribation Equipment Type HE - Pringers I'M + Malypropriene 5 + Second I - Tallon 15 + Omy (Second) MATHRIAL CODES AG = Armiel Glass CG : Ciral Gines WELL CONDITION CHECKLIST (GILDA Appropriate Hen(s), cross and if not appreciately Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Good / Broken / None Evendence of Ponding Around Well? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS



Illin

Noverlaigh Consulting mc, 155-c State: 1867 State # 07 Halyelo, 60 01040 113-340/850

	DEVEN 4 cool		(mthes)		PURGING I	DATA	((nes)		[Figure 1	
DING DIAMETI	14	TOBBIG MAI	PE PE	Printing Pulsi		2-12-		PUMPEDÜMME	NT MODEL & SERIAL #	\$:
LL VOLUME P	URGE: I WELL		L WIELDERNH - STA	ITIG DEPTH TO WAT	ER) X WELL C	APAGITY		CVITORS	U	RS
LL SEREEN IN			= 0.04, 1.25 = 0.06, PUMP OR TUBING DEP				: 12' = 586 GINITIATED AT:		N = 2.765 LITERS G ENDED AT	TOTAL VOLUME PURGED GALLONS:
PTH (leal):	~ '	22 WELL NO		WELL (Incl)	41: 14-1019-22-11		1:55	9,533	* = (10-65-7))	LITERS
WATER L	EVEL STABL	JZATION	DEPTH TO WATER V	VITH PUMP:			1.23	حثالث		L
IME INTERV	IL FLOW F	ATE	(feel)	PLIMP SETTINGS		-	DEPTH TO W	ATER (leal) END	Water Level Stable (Yes or No.)	VOLUME PURGED DURI INTERVAL (mL)
(min)	Girchi	in)					31861	ENU	[1/95 W (40)]	INTERVAL (INC)
-	+	-		-	_					
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mUnio)	(YATER (Yeat)	(NTU)	OXYGEN (mg/L)		(-c)	CONDUCTIVITY Ins/cml	(mV)	(describe)	(describe)
distribution (300	(*/- 0 p)-	777	7.09	()7	13.61	359	400	CITOGOY	
1:58	200		296	7.31	621	1192	325	42.8	Clar	
5:06			17.1	7.39	619	1175	376	50.9	Clear	_
5:13			11.8	7.45	6.17	11.49	375	53.9	Clear Clear	
							11.00	Television		
					Y Col					
		1								
-										-
-										
				-						
	-			3	7 ==					
				3	-					
					1.000					
			1 3			2001				T
				1000						
A stabilization	parameters from	EPA/540/S-95/504	April 1995		SAMPLING	DATA				
	CHAT) / AFFILIATIO	1.2	1	LERIS) SIGNATURE	11			SAMPL	ING INITIATED AT	SAMPLING ENGED AT
MIT OR TUBIN	G DEPTHIN SAME	SAMPLE PU	MP FLOW RATE (INL. M.	r (incute)	MECO PARAMET	ES MONTORIA	IG ECAMPAIENT MC	DUCE & SERIAL I	ls.	
eV)	0.00				V		1,312,000, 10.2			
LD DECONTA	Y HOSTANINA	N	the second second	FILTERED Y an Equipment Type	M FILTER!	ilZE 9i01			DUPLICATE	* (1)
FRIAL CODES	VC v-y-com	THALL EG - Coon		or OP = Polymonyro	Uc 5 - SM(0)V)	Talohen Oa	China Paperdy.			
14 600	Same and the same	V 1000		ONDITION CHE					Visit San	v province of entire
200 1 200	Mount / Stan Rain Water Be		General Condition PVC7 Y / N							/ Braken / Nane
			/ N Cond						A 41970	
MARKS										



min

Saverdiga Consulting tag (1990) Space Yes, Lake 4207 (Johnson M. 91040) 413/34/46/4040

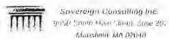
IING MAMETER		Truppes Las	EMAL CODE	Intrace Pulsi	PURGING T	DATA		POME FOLIDAR	IN MODEL & SERVAL &	
tios)	1/4	(sue tiglow)	PE	Partie Control	Pes 13)	ralt:		C 60 1 C C		
			LWELL BEPTH - STA				1000	GALLONS	-	rns.
LL SCREEN INT		INITIAL	= 0.04. 1.25 = 0.06. PUMP OR TUBING DEP	THEN TERNAL PUMP		HIN PURGIN	G INITIATED AT	200000000000000000000000000000000000000	N = 3.785 LITERS G ENDED AT	TOTAL VOLUME PURGE! GALLONS:
	30-32		31	WELL (feel)		15	:45			LITERS
WATER LE	VEL STABLE	39.100.510	DEPTH TO WATER V	PUMP SETTINGS			DEPTH TO W	ATER HOAD	Water Level Stable	VOLUME PURGED DURI
(min)	(ml/mir			PUMP SETTINGS			START	END	(Yes or No)	INTERVAL (mL)
										7
TIME	FLOW	DEPTHTO	ΤυπβιρίτΥ	DISSOLVED	104	TEMP	SPECIFIC	ÖRF	COLOR	ODOR
- 5 mánuteo!*	RATE (n)Umin) 90-500 mL/min)*	(led) (+- 03)	(NTU) (12. 10%)	OXYGEN (mg/L) (m 105p	ne ou	(*C)	CONDUCTIVITY (us/cin) (v/ 3%)*	(mV)	(desc/(ne)	(describo)
5:48	450		402	674	6.07	1549	501	54.4	FOGGY	
5:53			112	3.11	6.09	12.78	560	44.7	FOGGY	
5:54			30.5	1.30	6.10	12.30	562	44.0 43.8 43.5	FORGY Clear Clear Clear	-
5:59			18.3	0.79	6.10		562	438	Clear	_ ~
6.05			10.39	0.56	610	12.46	561	43.5	Clear	-
-										
										+
								5 = 4		
-							-			+
		20-10	N 1, 10				,			
0000	- 77		100	>>5	1 1		17375	-	-	+
PA stabilization	parameters from I	EPA/540/S-95/504		-	de karmi men	DATE				
Hotel	Cosh	Sove	on .	TERISI SIGNAPIRE					ING INITIATED AT	SAMPLING ENDED AT
mb Ch. Himili	, DEPTHIO, IVEL	SAMPLE PI	JAP FLUW ANTE UIL P	er mmide) (FIELU PARAMET	TER MONITURE	IS EQUIPMENT ME	DEL & SERIAL	NF-	
	SMATION Y	N	1 2 2 2	o Fill TERREU Y no Expopuent I nac	N FOLIER	SIZE (1700			DUPLICATE	v u
THUAL CODES	AG t Anton	Class CG : Clan		ONDITION CHE				Make Alde L		
pe: Flush	Mount / Stani	d Pipe	General Condition				Good / Broke		Lock Good	/ Broken / None
			PVC? Y / N				Riser Good			



MONITORING WELL SAMPLING LOG Low Flow Sarepling

Sovereign Considing Inc. Open Spine: Way Spine 1/02 Rolyoke MA 01040 413 Shi-1604

	Accol	200	(mener)		(fice)		(loon)		(btime)	
DING DIAMETE	n 11	YUBINS MAT	FE PE	PURGE PUMP	PURGING			MINN EUGIPM	ENT MODEL & SERIAL I	
I VOLUME P	IDOS LWELLVI	(see Indow)	WELL DEPTH - STA	TIV- INSUTH TO WAT			TC	GAIZONS	100	ERS
40.89	A CAMPAGE CONTRACTOR	The second second	= 0 04, 1.25° = 0 06,	District Country Links	A CONTRACTOR OF THE PARTY OF TH		; (W = 5.88	1 GALLO	IN = 3.765 LITERS	TOTAL VOLUME PURGE
LL SCREEN IN PTIT (feet):			JAIP OR TURING DEPT			THEN PURGIN	G INITIATED AT	PURGIN	G ENDED AT.	GALLONS
	40-42		41				6:15			LITERS
WATER L	EVEL STABLIZ		DEPTH TO WATER W feel)	ITH PUMP						
ME INTERVA	L FLOW RA			PUMP SETTINGS		•	DEPTH TO W	ATER (1601) END	Water Level Stable (Yes or No)	VOLUME PURGED DUR INTERVAL (mL)
	-							-		
		-								
TIME	FLOW	DEPTH TO	TURBIOITY	DISSOLVED	ρН	TEMP	SPECIFIC	CRP	COLOR	OPOR
	RATE (mission)	(leet)	(NTU)	OXYGEN (mg/L)	5 to 10 to 1	(.c)	CONDUCTIVITY	(niv)	(describe)	(riescriba)
(column &	350	10-03)	71 9	[1/- (0/1).	(· · · · · · ·	10 50	517	(a). Tamu):	Cla	
b-dir	110		357	0.77	619	1358	508	10.1	Clear Clear	
6:31			26.3	0.29	119	13.26	509	0.6	Clear	
6.21	_		00.	U.a.	0.11	1200	301	~ 7.0	CKOT	
					1					
									y, .	
				- 3						
- 1				m Yes				+ 0 -		1 1 - 1
										4
	parameters from ES	Listan Arien	tout value							
PA STAURIZEUO	parameters mon ca	W310/3-93/304	April 1986	-	/SAMPLING	DATA				
	BINT) / AFFILIATION	Variation of	4	ERIS) SIGNATURY		-		EAMPL	ING PHITIATED AT	SAMPLING ENDED AT
Toda.	COSSUM COEPTIFIN WEG	SANTERER	AP FLOW RATE (ML DE	MM	FIELD PARAME	DER MONTORIA	G EQUIPMENT MO	DEC & SI-RIAL	ds t	
di	7	35707,4407,5	w word to be the the	00	10.000	e i man i Pin	19 E490 (Net 10 Ne			
LD DECONTA	MINIATION Y	н		FILTERED V 1	N FR.TER	SIZE			DUPLICATE	Y 16
IEMIAL CODES	AG = Amport 1	IAAL CG + Clear		n Emispinent Typic e PP (Polymonido	s salkine	T foliage D	rument Spacetyr		0.00	
				NDITION CHE	-			pplicable)		
	Mount / Stand		General Condition				Good / Broke			/ Broken / None
			VC? YIN					<i>D</i> amaged	/ None	
rendence o	Ponding Aroun	id Well!? Y	/ N Conc	rete Collar: Go	ood / Crack	ed / Leakir	ng / None	-		



500 539 3200

MONITORING WELL SAMPLING LOG Low Flow Sampling

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Sovereigh Consulting Inc 3 Days Squar Yoy Sale Hat: Dalyaka MA 01049

41/0/500 MA 01049 41/0/500 MSS0

PRIMECT HAME PROJECT VALLETHING 10.10 WELL DIMMET 003 (bomy) **PURGING DATA** PUMP EQUIPMENT MODEL & SERIAL III undiesi GALLONS TITRE WELL VOLUME PURGE: 1 WELL VOLUMES (FOTAL WELL DEPTR - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (GOIDINE POR FOOL) 0.75 = 0.02; 1° = 0.04, 1.25° ± 0.06; 2° = 0.31; 4° ± 0.05; 5° = 1.02; 5° = 1.07; 12° = 5.88 WELL SCREEN INTERVAL INSTALL PUMP OR TUDING DEPTH IN TIME PUMP OR TUDING DEPTH IN TOUR OR TUDING DEPTH IN TIME DAY 1 GALLON = 3 785 LITERS TOTAL VOLUME PURGED PURGING ENDED AT GALLONS: DEPTH (lest): WELL (leal) WELL (leal) 50-ITERS 70 DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (leet) TIME INTERVAL FLOW BATE PUMP SETTINGS DEPTH TO WATER (feel) Water Level Stable VOLUME PURGED DURING INTERVAL (ml.) (Yes or No) (inL/min) (min) TIME TURBIDITY DISSOLVED SPECIFIC ORP COLOR ODOR RATE CONDUCTIVITY WATER (NTU) OXYGEN (°C) (mV) (descrine) (describe) (mL/min) (mg/L) (y5/cm) (y7-35)* (leet) (100-500 ml /rd 104- 10% (4)- 10%) (1. 0 I) (4/ 5%) CAR TOWNY 588 590 230 251 0.64 14.00 togg Y 30.6 -32.5 -338 0.27 Clea Clear 0.26 EPA stabilization parameters from EPA/S40/S-95/504 April 1990 SAMPLING DATA SAMPLER(S) SIGNATU LEG BY (PRINT) I AFFILIATION SAMPLING INITIATELY AT SAMPLING ENDED AT TELO PARAMETER MENTIORING EQUIPMENT MODEL & SERIAL III. THE DITHTERED EU TER SIZE TELE DECONTAMINATION Y N DUTHENTH 11 Раканат Еприрамена Туре MATERIAL CODES AC - Ambol (Wass | C.O. - Clone Grace) PF Polyettytom PP Polyettytelle Sitisticae 1 - Tallan Dis Comer (Specify) WELL CONDITION CHECKLIST (ckilin appropriate nears), cross and it and appropriate Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb's Y / N PVC Riser Good / Damaged / None Evendence of Ponding Around Welli? Y / N Concrete Collar Good / Crocked / Leaking / None REMARKS: ٠,٠٢



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MONITORING WELL SAMPLING LOG

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Sovereign Constituting Inc.
4 Conv. Supple Way, Some II Suf-Lingska MA 04000

413 200 anist)

DROUT THAM BOUNCE CO ANON 10.10 ROJECT NUMBER (legt) MELL CAMMETER (freel) (blass) awters! **PURGING DATA** UMP EQUIPMENT MODEL & SERVAL RE Veristal 4 WELL VOLUME PURGE: TWELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Collors Per Foot). 0.75 = 0.02. Y = 0.04. 1.25 = 0.06. Z = 0.16. 3' = 0.37. 4' = 0.65. 5' = 1.02. 6' = 1.47. 1 GALLON = 3 785 LITERS TOTAL VOLUME PURGED WELL SCREEN INTERVAL DEPTH (IGN) INITIAL PUMP OR TURING DEPTH IN MINAL PUMP OR TURING DEPTH IN WELL (feet) PURGING INITIATED AT PURGING ENDED AT GALLONS: 61 60-62 LITERS DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (feat) FLOW RATE PUMP SETTINGS DEPTH TO WATER (Inet) Water Lavel Stable VOLUME PURGED DURING (min) (mL/min) START END (Yes or No) INTERVAL (mil.) TURBIDITY SPECIFIC COLOR FLOW DEFTH TO DISSOLVED TEMP ODOR RATE (NTU) DXYGEN (doscribe) WATER (.C) CONDUCTIVITY (mV) (describe) (mL/min) (mg/L) (lent) (45/cm) (*/ Just (+7- 10%)" 841 350 6.35 11.83 0.36 18:16 6.34 12.06 877 950 0.32 18:21 6.34 12.02 876 clear 18:26 EPA stabilization parameters from EPA/540/S-90/604 April 1996 SAMPLING DATA MAPLERIS ISIDANTINES SAMPLED BY (PRINT) / AFFILIATION SAMPLING WITHATED AT SAMPLING ENDED AT SOUCOL FIELD PARAMETER MONITORING EQUIPMENT MODEL & SESIAL US FIELD-FW PRED FILTER SIZE ____ pm HELD DECONTAMINATION Y N. DUPLICATE M Edition to Enjoyment Type MATERIAL COOKS AG > Amber Gress CE - Corar Glass PC - Folicity with PP - Palest ingline 5 + Salenie 1 - Tellan 0 - Fillion (Special) WELL CONDITION CHECKLIST (Grete appropriate item(s), cross out if not applicable) Type. Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock. Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb? Y / N PVC Riser Good / Damaged / None Evendence of Ponding Around Well? Y / N Concrete Collar Good / Gracked / Leaking / None REMARKS.

Sovernyn Consulting Inc. MINE Stroll: Main Stront, Some 202

MONITORING WELL SAMPLING LOG

Severaign Consulting Inc 1 Your Smine Way Love # 15. Hotyakie MA 016/0

Banshold, MA DZoff: Low How Sampling 50% 329-1700 113.5.00.003.0 PRODUCT LOCATION MA 10.10 WELL THAMETER NA PURGING DATA PUMP EQUIPMENT MODEL & SHRIAL M TUBING MATERIAL CODE 14 (Inches) (New Louise) Pau acopino GALLIONS WELL VOLUME PURCE I WELL VOLUME (TOTAL WELL DELLE) - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Foot) 0.75 ± 0.02, 1° ± 0.94, 1.25 ± 0.05, 2° ± 0.16, 3° ± 0.27, 4° ± 0.65, 5° ± 1.02, 6° ± 1.47, 1.2° ± 5.80 I GALLON = 3785 LITERS TOTAL VOLUME PURGED INTINA POINT OR TUBING DEPTH W THINA PUMP OR TUBING DEPTH IN PURISING WITHTED AT WELL (feet) PURGING ENDED AT GALLONS 08:33 ITERS 0810 WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP (leet) START END TIME INTERVAL | FLOW RATE Water Level Stable VOLUME PURGED DURING PUMP SETTINGS (man) FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC COLOR DOOR RATE WATER CONDUCTIVIT (MTU) OXYGEN (°C) (unv) (describe) (describe) (nimin) (feet) (mg/L) (115/cm) na isr (-/- 10mV)* (1/. 10%) Let. 0.11 1100-500 mL 1./ 0 33 8/37 00100 793 600 13.98 2.4 805 tan 66 137 Fr 3 0.47 13,00 800 1-an Er a 6.74 12.89 10 0.39 774 -87 fech 15 6.44 0.38 12.73 756 -87 fan 6.43 409 12.75 746 20 0.36 fan 6.41 739 25 738 1278 0-36 -87 tan 12.70 737 -85 30 131 6.41 0.36 tab * EPA state ization parameters from EPA/S10/S-95/904 April 1990 SAMPLING DATA SAMPLING VITIATED AT SAMPLED BY (PRINT) / AFFILIATION SAMPLERIS) SIGNATURES WJB MARKET JANF ELGAPHALE and pur marchy) MARITERED Y MITER NIZE ___ pm LIELD DECONTAMINATION 7 H HIPANALE Ученняя і дирист Туро MATERIAL GUULS PE - Propertitions - PR - Polymorphisms - Sistems - 1 - Letton - 0 - Other (Sixicaly) AG - Amber Cities CG - Clear Glass WELL CONDITION CHECKLIST (circle appropriate item(s); cross out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps. Good / Broken / None Luck Good / Broken / None Evidence of Rain Water Between Steet & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Well? Y / N Concrete Collar. Good / Cracked / Leaking / None REMARKS

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Sovereign Consulting Inc. 96505 South Main Suemi-Sorie 207 Materiald, MA 02040

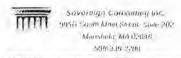
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MONITORING WELL SAMPLING LOG Law Flow Sampling

Sovereign Consulting Inc.
(Span Lagrame Way Some IJD)
(Rolyake 18A 010da)

013-540-0630

A 100	(00							GING D	ATA		NA		
TUBING DIA (antimy)	ETER	14	(Ven help	MATERIAL C	con	MUNGE	PUMP TYPE	n.D	1000		PUMP EQUIPM	EHT MODEL & BEHIAL W	
WELL VOLU	E PURG	E I WELL V	OLUMG (TI			ANG DEPTH D	MATERI X	WELLS	VEACULA		GALLOUS	litts	ns
						8:016 3						ON - 3785 LITERS	TOTAL VOLUME PUR
DEPTH (lea)	MINTER	At	WEL	L (Inel)	R TUBING DE	METT (NG DEPT		IG INITIATED AT	PURGI	NG EMDED AT	GALLONS
					11				1.1	:15	111	1:20	LITERS
	100	L STABLI	27 at 12 at 1	(feet)	TO WATER								
TIME INT		FLOW RA				PUMP SET	TINGS	18.		DEPTH TO W	ATER (lect) END	Water Level Stable (Yes or No)	VOLUME PURGED DI INTERVAL (m).
					00								
								-					
				-	-	,							
TIME		LOW	DEPTH TO WATER		(NTU)	DISSOLVE		41	TEMP ("C)	SPECIFIC	(mV)	COLOR (duscribe)	ODOR (describe)
42.00	(n	il./infr/) 00 mt/mkg*	(feet)		v/- 10%)*	(ing/L) (*/* 10%)	100	0.15	(•)· (x)·	(µS/cm) (+/- 306)*	(*/- 10mV)*	1,225,070	1
OO U	_	00	100 037	1	16	7.65	7.		15,19	220	2.4	fan	
5	1	70		1	65	6.99		_	12:37	193	7.0	tan	-
10	-	-		_	8.5	6.9	6.	_	D.15		14.1	tan 'e lea	
_	+	-		10		6.97	6.7	10		189	20.1		-
15	-	-		10	7.16	10047	W	8	11.73	189	00-	dear	-
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7-00	,-	0.			3 10.00				*				- 0
		- 29		17	- 10	1		- 0	1	100			
* EPA sunbille	ation para	melens from E	PAIS10/S-95	504 April 19	196						1	in-	1
CAMP 66.0	10000	LAFFILIATIO		(5)	levi	PLER(S) SIGNA		PLING	DATA		Tr sales	LING INITIATED AT	le tue we suite it
SAMPLED	(escari)	PATTERING			DAM	LEW(2) SIGHA	ruide2				January.	11:42	SAMPLING ENDED AT
FUMP 2FC	iems be	SHIP WELL	SALET	Fame FLC	WRATETING	pe am wei	THELD?	ARAMETI	HIJOTINOM S	NG EQUIPMENT ME	OCEL & SENIAL		L
(leo)													
MELTI DEC	NTAMINA	TION (P)	N			O FILTERED.		rateres.	NE Jun			DOPLICATE	r N
MATERIAL C		U	Gless CC r	Claur Ghas		hin's Equipment of the PP Pob		Killer Black	Y = Tellalv	Other (Streeth)			
ATT PROPERTY	or.e	- more		COM CARE						(s), cross out if not	applicable)		
Type: Fi	ish Mol	ini / Stane	l Pipe	Gen						Good / Broke		Lock Good	Broken / None
					YIN					Riser: Good		A Comment of Street, or	(502-0) - 0 138/19
			ind Welli?							ng / None			



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Suvereign Consulting Inc. Econol Square Rhy, Sugaristic Holpika MA HOTA 114:410:0650

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TUBING CIANE	160	TUBING MA	FERNAL COUL	PURGE PUM	PURGING I	DATA		PUMF EQUIPM	INT MODEL & SERIAL IN	
(inches)	11.4	(see below)	Delay		9,000	4:5				
The second second	PURGE: LWELL			YAIR, DEPTH TO WA	THE RESERVE			GALLORS	1716	H5
WELL SCREEN				2" - 0 16. 3" - 0 31 PTH W FINAL PUMP					N = 3785 LITERS GENDED AT	TOTAL VOLUME F
DEPTI (loe)		WELLIN		WELL (loof)			1:04	12	109	Liters.
WATER	LEVEL STABL	IZATION	DEPTH TO WATER	WITH PUMP.	-	1,5	220-6-10-4	10		
TIME INTER			(feet)	PUMP SETTINGS	5 ,		DEPTH TO W	ATER Hert	Water Level Stablo	VOLUME PURGED
(min)	(mL/mi				-		START	END	(Yes or No)	INTERVALI
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pit	TEMP	SPECIFIC	ORP	COLOR	ODOR
6 - 1	RATE (n:Umin)	WATER (feet)	(עדט)	OXYGEN (ing/L)		(,c)	CONDUCTIVITY (p5/cm)	(mV)	(duscribe)	(describe)
(3-5 minotes)*	(100-500 mL/min)*	he 0'3).	(+/- (0%)	(1/2-10M)*	io. any	Jel Mile	(4/- 931)	tro tomor	1	-
0	600		319	5.70	6081	12.39	336	41.3	tanish	
5		7	016	4.67	6.65	10.99	335	30.1	tein	
10			110	14,67	6,56	19,89	334	32.6	tan	
15			81,5	4.67	6.53	10,75	335	32.4	tan/cleur	
30			37.4	4.67	6.51	10,57	336	32.0	Clas	
125			17.5	4068	6.50	10,46	337	31.4	clean	
										100
			-							
1	7.0		1.5			0.9		- 20		
			L							
E+W Statistics	lion parmoeters from	CF-W3/NS-23-304		Walter San	SAMPLING	DATA				
SAMPLED BY	(PRINT) / AFPILIATIO) 4	(SA)	APLER(S) SIGNATURE		Pillit		SAMP	19 38	SAMPLING SHIDED
(leel)	MARTIN (BANAKA)	L SAMME FI	MP PLOVY RATE (u.c.	per money	INCLISEAGAME	ESCHAUMTORIN	IS ESUMMENT M	MEL & SUIGAL	ns.	
1000 mm	HAMINATION C) N	riex	ON FILTERED Y		5/7 £			ENJPERATE	/ N
MATERIAL COL	n,s My : Shine	Filass CG / Clea		CONDITION CHE				poplicable)		
Type flu	sh Mount / Stan	d Pipe						7 7 7 7 7 7	Lock: Good	/ Broken / No
	if Rain Water Be						Riser Good			n leversen n and



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Sovethep Consenting Inc.

Flowing Way Story I. 20.

Flowing Std U1040

115-2016/08/8:

TUBING DIAM (metics)	TARK	(see below)	TOLU)	PURGI. PUI				DOWN EDOWN	ENT MODEL & SERIAL II	3
	E PURGE: 1 WELL		AL WELL DEPTH - SI		STERN X WELL			CATEGUE	ψn	ERS
WELL CAPACI	FY (Gallous Per Foot	0 75 = 0.02;	1' = 0,04, 1.25' = 0.06,	2" = 0.16, 3" = 0.3	(2; n² = 0.05, 5° v	102 6 = 1.4	7, 12 - 5 88		ON # 3 TAS LITERS	TOTAL VOLUME P
WELL SCREEN DEPTH (reen)	INTERVAL		PLIMP OR TUBING DE	WELL (lect)	OR TUBING DEPT	CONTRACTOR OF THE PROPERTY.	NG INITIATED AT		3 (24	GALLONS
MATE	LEVEL STABI	IZATION	SI DEPTH TO WATER	WITH DUAD			2:58	1.1	3.0 F	LIVERS
TIME INTER			(feet)	PUMP SETTING	S .		ВЕРТН ТО W	ATER (lee))	Water Level Stable	TVOLUME PURGED
(errier)	(mUm			7,000,000,000			START	END	(Yes or No)	INTERVAL (
			-11							,
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	ен	TEMP	SPECIFIC	ORP	COLOR	ODOR
rate Santon	RATE (mUnin)	(leel)	(UTU)	OXYGEN (mg/L)		(°C)	CONDUCTIVITY (µ5/cm)	(tnV)	(describe)	(doscriba)
(3-5 núnules)*	400	(16.0.3)	155	3.07	6-63	13.93	667	31.3	Janloten	
5			133	0.50	6,48	13.81	660	6.0	ALTO TO	
10			18.8	0.37	6.44	12,40	661	0.3		
15			62.9	0.32	6.44	608	661	-2.9		
90			144.4	0=31	6,43	12.57	660	-3.9	1	
			1000							
			-							
								1-00-0		-
		-	-		1	-		-		
	-	-	 	-		-		-		
-						-				
		7		1201.0		100			11.	
			1		1000					
* EPA stabiliza	Om parameters from	EPNSIOS 95/60	4 April 1998	200	SAMPLING	DATA		-		
SAMPLED BY	(PRINT) / AFFICIATI	ON	SAM	PLER(S) SIGNATUR		UNITY .			3:50	SAMPLING ENDED
HOUR OR IN	DING DEPTH 14 WEI	L SAMPLE P	OMP FLOW RATE OIL	per minule)	FIELD PARAMET	ER MONTORI	NR ECITIPMENT WO	DDEL & SERIAL	115	
D	WYANIHATION CT		Fees	O-FILTEREO Y transi guyanani Typis	N ENTERS				DUPLICATE	Υ
MATERIAL CO	DES ACRAMINA	Glass (10 - Cin		CONDITION CH				anoticable)		
Type: fl	sh Mount / Stan	d Pipe	General Conditi				Good / Broke		Lock: Good	/ Broken / No
Evidence	of Rain Water Bu	tween Steel 8	PVC7 Y / N	is Well P	lumb?: Y / N	PVC.	Riser Good	/ Damaged	/ Hone	



REMARKS:

MONITORING WELL SAMPLING LOG

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Savineigh Consulting Inc. (Piper Spice Way Spice 119) (Inlycke Martine)

5000-2300-33002 413 5404050 10-08. PRIDUFC I MAM DEPTH TO BOTTOM DEPTH TO WATER 3/4 NY NA 001-002 (fem) PURGING DATA TUBING DIAMETER FUTHER MATERIAL CODE MINICE PLRAP LYDE PUMP EQUIPMENT MODEL & SERVAL WA 1/4 femeralist Jehr 9.1 CALLONS WELL VOLUME PURGE: 1 WELL VOLUMB (YOTAL WEITTIELDIN - STATIC DEPTH YOWATCH X WED CAPACITY WELL LAPACITY (Colonis Per Foot) 075 -002 1'-004, 125 -006, 2'-016, 3'-031 4'-066, 5'-102, 6'-147, 12'-686
WELL SCREEN INTERVAL

WELL SCREEN INTERVAL

WELL (feet)

WELL (feet)

WELL (feet)

WELL (feet) I GALLON = 3 785 LITERS TOTAL VOLUME PURGED PURGING ENDED AT GALLONS 14:05 14:16 LITERS DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (teet) TIME INTERVAL FLOW BATE PUMP SETTINGS DEPTH TO WATER (lest) Water Level Stable VOLUME PURGED DURING (Yes or No) INTERVAL (mL) (mL/min) START (min) TIME FLOW TURBIDITY DISSOLVED SPECIFIC COLOR RATE WATER (NTU) OXYGEN (-C) CONDUCTIVITY (mV) (describe) (describe) (michin) (ing/L) (lent) (45/cm) (100-500 ml./n 101 0 57 (a) 10%Y (2.01 At) (a/- 304)* [+/- 3%) to louvy 430 00:00 600 0.64 14.00 14:30 757 6,5 tan 14:17 254 5 199 10,01 767 -11.3 tan 127 10 N.F 6.43 6.17 Kin 0.27 768 92.2 15 4.5 0.26 6.43 10,01 765 tan/chea 20 8901 6, 43 -10.1 cleur 765 0.26 10.08 23 0.00 12.03 764 8:6 clear 180 * EPA stribilization parameters from EPA/540/5-9/904 April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION: SAMPLER(S) SIGNATURES SAMPLING INITIATED AT SAUPI ING ENDED AT 14:43 PUMFOR TURNS DEPTHAN WILL (leat) SAMPLE PRANTICOWRATE (INC. per mission) ELUPARAMETER MONTORUNS EQUIPMENT MOREL & AUGUL 49 DELOCATIONED Y HELD DECONTAMUVATION DUPLICATE 9 Epitation Equipment Type PE - Pickellabone PF - Polyprojetoir S - Secolar T - Talon O - Dino (Sporty) MATERIAL CODES AN : Aniber Glass CG - Emai Glass WELL CONDITION CHECKLIST (circle appropriate item(s), cross out if you approachly) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser Good / Damaged / None Evendence of Punding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None



MONITORING WELL SAMPLING LOG Low How Sampling

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	14	TUBING MA	AN OLLA WARRING		PURGING					
WELL VOLUME	19		12,747 (28)(81,17,7)	MINGE BOW				PUMP EQUIPM	ENT MODEL & SERIAL A	\$
WELL GAPACI)	Ollone. CWELL	(Seg West)	161.		1000	_		GALLONS	jur.	FRS
			"=004, 125"=005				7. 17 - 5 80	1 GALLO	N = 3.785 LITERS	TOTAL VOLUME P
DEPTH (feet):	INTERVAL	MITTAL WELL (I	PUMP OR TURNS DE	PTITIN FINAL FUME WELL (feet)	ON YUBING DEP	TILIN PURGIN	IG INITIATED AT	PORGI	IG ENDED AT	GALLONS
aci () ((loca))		The state of	51	1199037110		1	5:03	15	:30	LITERS
WATER	LEVEL STABL	ZATION	DEPTH TO WATER	WITH PUMP:						
TIME INTER	VAL FLOW RA		****	PLIMP SETTING	S		DEPTH TO W	ATER (loci) END	(Yes or No)	VOLUME PURGED INTERVAL IN
		-4-								-
TIME	FLOW	DEPTH TO	TURBIOITY	DISSOLVED	рн	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mUmin)	WATER (fool)	(NTU)	OXYGEN (mg/L)	N MO	(cc)	CONDUCTIVITY (HS/4HI)	(mV)	(describe)	(describe)
(3-5 minulas)	1100-Bng mt/nen/	(+1/- 0.3).	(m 10%)	(*/- 10%)*	to att.	1+/- 150*	(+1-48)*	147: 10mV)*	-	
00:00	600		84.1	0.56	6.49	13.99	946	-18	197	
5			201	0.31	6,53	12:15	968	-98	tan/clear	
10			EUGO	0.30	0.54	MAO	967	-38	ten /clour	
15		-	535	009	6.55	11.83	966	-44	fan	
20			380	0.09	6.55	11175	165	-46	fan	
3			344	1009	16.57	11178	965	-47	tan/clean	
30			301	009	6.56	11.60	464	-42	tanfela	
30						-				
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		-								
* EPA stabilizat	on parametrus train E	PA/540/S-959/04	1 April 1996		1		4			4
SAMPLED BY	PRINT) / AFPILIATIO	W	Isau	IPLERIS) SIGNATURI	SAMPLING	DATA		Isane	LING HUTIATED AT	SAMPLING ENDED A
Same	Charles As 1851 acres for	- X	3.0	A ERISON STORMS					16:04	erani (mia interes v
PUMS OR THE (1681)	MG UPT (bills 1915)	SAMOET D	OWE OF DWISHES (OR.	jny scemio)	FIELD TATIONIC	tes wont de	PECCUPALITY	am t. & Sélinat	иь.	
PIELOTOGON	TALIMATION (A)	N		Distantendo Y Suon Equipment Type	N FILTER	SIZE mil			DUPLICATE	, in
MATERIAL COD	S And Barry	Office CG = 1393		гали — Раг — голургору						
Tree of	n 442, 24 4 4 4 4	Die		CONDITION CH		10-23-2-1			Lock Cont	f Backers 1.11
1.00	h Mount 7 Stand Rain Water Bet		General Condit PVC? Y / N				Good / Brok Riser Good		Lock Good	broken / Non
			IN Co					n seemingged	1,000	

Sovereign Consulting los 90k-B Scatte Main Street, Some 2012 Mar Sheat AJA 07/07B

508-119-3200

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SECULIARION ON THE SECULIARION PRODUCT NAME 10-08 Devens 6/3/10 JISA C MEDIC TO WAY IN MEPTH TO BOTTOM IND READIN 3/4 001-00 **PURGING DATA** PUMP COUPMENT MODEL & SERIAL IN (some find powl) Delley (antion) require GALLONS WELL VOLUME PURGE: I WELL VOLUME TOTAL WELL DEPTH - STATE DEPTH TOWN LIAT & WELL CAPACITY WELL CAPACITY (GAMM Per Free) 075 = 0.02: 1'= 0.04 1.25' = 0.05: 2'= 0.05: 2 GALLON # 3 785 LITERS TOTAL VOLUME FURGED PURGING INITIATED AT PURGING ENGED AT GALLONS 16:10 17:00 raisson 11 185 01 DEPTH TO WATER WITH PLIMP WATER LEVEL STABLIZATION (feet) PUMP SETTINGS VOLUME PURGED DURING TIME INTERVAL FLOW RATE DEPTH TO WATER (leel) Water Level Stable INTERVAL (mL) (min) (min/slm) START END (Yes or No) TURBIDITY DISSOLVED FLOW DEPTH TO TEMP COLOR ODOR RATE WATER OXYGEN CONDUCTIVITY (NTU) (C) (mV) (auscribe) (describe) (mg/L) (milliona) (lect) Mis/cml 1100-500 mt/mil 111- 0.37 (+/- 10%) (+/ O.13 14/ 18/ (1)- 10mVy 846 -41 MM Cleur 17:09 19,4 1010 6.63 15.18 clear * 14 4,3 0.98 831 -40 6,61 15,17 19 6:59 344 . 3 Clear 0.90 15.00 1. EPA similization parameters from EPA/540/S-95504. April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION SAMPLERISISIONATURES SAMPLING INSTINTED AT SAMPLING ENDED AT 17:43 17:20 PER DETERMENT DESTRUCTION SEARCH PRIME PLYWORD IN perment ELD FARAMOTEK AS SATORING EGSPEP (VILLISED FA SER M. JA ticett FIELO FILTERED Y FILTER SIZE FIELD DECONTANDIATION IT N CHIM ICATE Folkshop Equipment Type MATERIAL CODES PE - Polyalhykima 100 - Prayalmyykine 5 - Sakialo 1 - Fallon (1 - Coho) (Specify) AG = Armer Cines CG = Com Glass WELL CONDITION CHECKLIST (orcie appropriate item(s) cross real al cold applicability) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lack: Good / Broken / None Evidence of Rain Water Belween Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Welli? Y / N Concrete Collar. Good / Cracked / Leaking / None REMARKS:

Refusal at GY, EOB



MONITORING WELL SAMPLING LOG Low Flow Sampling

Severage Consulting Nic. Action Square Stay, Suite #367 Trisyake MA ILTTIO

as share open

LEGIOSE G. TRAME PROPERTURE - USACE 114 10 (B) ACCURACT AROMAGER WELL DIAMETER DEPTH PO WATER Coul CEA footi (rempt) **PURGING DATA** TUBING DIAMETER THUNG MATERIAL CODE PUMP EQUIPMENT MODIL & SERIAL HS Gracingo (hegligs) (sine helosy) GALLOW WELL VOLUME PURGE: I WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X. WELL CAPACITY WELL CAPACITY (GONDAS POR FORM): 0.75 = 0.02: 1' = 0.04: 1.25 = 0.05: 2' = 0.10: 3' = 0.05: 1' = 0.05: 5' = 1.02: 5' = 1.07: 12' = 5.80

WELL SCREEN INTERVAL.

INSTITUTE PUMP OR TURNES DEPTH IN FINAL PUMP OR TUBRIS DEPTH IN PURGING INITIATED AT WELL (feet)

WELL (feet) T GALLON - 3 765 LITERS TOTAL VOLUME PURGED GALLONS: PURGING ENDED AT DEPTH (levi) 23 25 024 LITERS DEPTH TO WATER WITH PLIMP WATER LEVEL STABLIZATION (fact) Water Level Stable VOLUME PURGED DURING FLOW RATE PUMP SETTINGS DEPTH TO WATER (leet) (Yes or No) INTERVAL (mL) START END (min) (oil/min) TIME TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR ODOR CONDUCTIVITY RATE WATER (NTU) OXYGEN. ('0) (mV) (miscribe) (describe) (mL/min) (mg/L) (feet) (95/cm) (100-500 mL/r (1/ 03) 196 10%F (1/- 10%) 100 O.17 1+7 150 107- 3:41 Late 10mily 38.4 744 SUC 2 1,2 5.98 11.46 77.1 Cleur 09135 NA 6/6 0.78 11.32 778 41.1 500 13.2 tr 0430 0.53 6.23 776 Ye 11 1-87 11.04 30.2 11 04.55 DY. 6 0940 11 2 48 777 0-43 6.27 11.20 10 0-41 243 01145 .1 2.80 6.29 1108 776 49 10 . * EPA stabilization parameters from EPA/540IS-95/504 April 1996 SAMPLING DATA SAMPLED SY (PRINT) / AFFE INTION SAMPLER(S) SIGNATURES SAMPLING INITIATED AT SAMPLING ENDED AT - (0950 PLANEOR LUCKING CONTROL OF IL Salarit, Pante FLOW RAST (est per mente) TELD GARAMETER MUNITORING EQUIPMENT MODEL & SERIAL IIS FINID PILIERED (X) N FILTER TILE IN ON FIELD DECONTANINATION Y CONTRICATE Diferilion Equipment Type MATTRIAL CODES AG - Ander Glass CG - Claim Wass ITE - Directlyame MP + Datypropytine S + Strave T + Jolian D + Oltim (Spe. 15). WELL CONDITION CHECKLIST (circle appropriate item(s), cross out if not applicable) Type Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock Good / Broken / None Is Well Piumb? Y / N PVC Riser: Good / Damaged / None. Syldence of Rain Water Between Steel & PVC? Y / N Evendence of Panding Around Welll? Y / N Concrete Collar. Good / Cracked / Leaking / None REMARKS:



Surrenge Consulting Inc.
4 (Ipwa Squade Way, Saite #30)
Hospide Ma GGAP
41,14-40 HSD

USAL	E - DEU	ENS	Latting C. France	MART N	A			(Marie		10-02
ROLECT CHAP	001-00	2	(miles)		DISTRICTO WATER	4	(Mes)	NA	(ppmq)	NA
					PURGING D	ATA				19.11
UNING DIAMET	m 44	FURBUS IAA	POLCI	CADO	THE			MORICIA VIALIA	ENT MODEL A SERVAL	1
VELL VOLUME	PURGE: 1 WELL	VOLUME= (10T)	AL WELL DEPTH ST			APACITY		GALLUNK-	1.17	DRS
			1° = 0 (04; 1° 25° = 0 (16;						OH 5 3 745 LITERS	TOTAL VOLUME PURGED
EPTH (leasy	INTERVAL	METT (PUMP OR TURNING DEP lest)	WELL (Inel):		HIM PURGIN	G INITIATED AT		A CONDED AT	GALLONS:
			Tananaya mise a		034			110	1:50	LUERS
C4780/200	LEVEL STABL		(feet)					-	College Toward	
TIME INTERV	VAL FLOWR			PUMP SETTINGS			DEPTH TO W START	END	Water Level Stable (Yes or No)	VOLUME PURGED DURIN INTERVAL (ml.)
	-	_						-		
	-	_								
-	-	-			->					
TIME	FLOW	DEPTH TO	TURBIOITY	DISSOLVED	pH	TEMP	SPEC)FIC	ORP	COLOR	ODOR
	RATE (mL/m/n)	WATER (leal)	(MID)	OXYGEN (mg/L)		(~C)	CONDUCTIVITY	(inv)	(describe)	(describe)
(3-5 minutes)*	1100-500 mL/min	(44- 0.2),	(47- 10%)	14% 10W.	(0) (0.1)	to the	(4) 321	EN 10mV)*		
1015	500		9115	1.50	6.48	12.10	824	18.3		
10 23			303	0,50	6.40	11.66	819	11-9		
1021	_		101.7	0.45	6.39	11.63	819	13.7		
10.30		-	56.0	0.39	6,39	11.54	8/8	15.0	-	
1034	~	-	27.6	0.34	6.39	11.37	18/9	14.8		
1037	~	-	17.5	0.31	6,39	11,59	8/8	14.6		
1040		-	13.4	0.29	6.39	11.49	8/8	14.6		
										-
			(c) v.				B C C B	10.4		
200				351		-		24	-	-
										-
EDA epoptus	on parameters from	EDA/EJOJE DOJED	1 April 1086							
	1100				SAMPLING	DATA				
SAMPLEO BY (PRICITY AFFILIATE	DN	SAME	LER(S) SIGNATURE					INGUNIDATED AT	SAMPLING ENDED AT
WAR OR THE	ING DEPTH IN WEL	I TORSAMIE IS	UMP FLOW BATE INL &	ole minute)	TEIET D BARAGET	CB HOWTOGO	NG EQUIPMENT M		1042	1050
(cet)	and mer tilling there	Servin SC (and replicable full	An immeri	ers (smant)	and description of the state of	S BANK MENT WI	ere poemine		
THE DECIDING	LAMINATION &	34	10 mm		N PHIERS	iceam			DUPLICATE	¥ 10
ATERIAL CODE		Chasa GG : (lie		ion Equipment Type toe PP Polymanyle	mp S = C.le runs	La Telina Di	Olive / Case Ive		Tes sient	
	we - minen	May 100 1 100		ONDITION CHE				(عادات اووو		
Type: Flust	h Mount / Stan	d Pipe	General Condition				Good / Brok		Lock: Good	/ Broken / None
		No. 2 Dillion, a	PVC? Y / N		omb?: Y / N		Riser: Good			
		und Welli?	r / N Con	crete Collar: G	ood / Cracke	ed / Leakii	ng / None			
REMARKS:										



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MONITORING WELL SAMPLING LOG Low Llow Sampling

Successing Consulting the.
(*** consult Asy, Sooly (Ch))
(1949)44- MA DIMA

4) seamoteur

OFCI MAR	SHE: 127	VINS	PHOMETICE:	Phyerite	A			6/	7/2010	10-02 MA
	001-005		WELL DOWNET	4	(teet)	VA	(Heat)	NA	lebani Labinger	NA
DING DIAME	TER(/ .		TEMAL CODE	PURGE PUR		ATA		PUMP EQUIPM	ENT MODEL & SERIAL I	
Just 1	74	(sno tekow)	FILE		geoph	43		GALLONS	Ton	rae.
			AL WELL DERIVE - ST. 1 = 0.00. 1.75 = 0.08.		•	APACITY 102: 6:2 LAZ	12° ≈ 5 HR	1 GALLO	M = 1785 MERS	TOTAL VOLUME PURGE
PTH (loci)			PUMP OR TUBING DEP	WELL (lect)	OR TUBING DEPT				IG ENDED AT	GALLONS
				and the second	044					HTERS
6.307.6	LEVEL STABL		DEPTITO WATER Y	PUMP SETTINGS			DEPTH TO W	APP W-W	Water Level Stable	VOLUME PURGED DURI
(min)	VAL FLOW RA			FUMP SETTINGS	,		START	END	(Yes or No)	INTERVAL (ML)
	-	-							_	-
-										
			1			33.872				
TIME	RATE	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	ρΗ	TEMP (*C)	SPECIFIC CONDUCTIVITY	(INV)	COLOR (describe)	ODOR (describe)
3-5 minutes;*	(InL/Min) (100-500 mL/min)*	(+\-10.4).	11/- 10%r	(*/- 10%)*	(4/- 0.))°	ior ist	(µ5/cm) (+7- 2%)*	The samp		
105	600	-	Max outofrom	0.77	6.56	12.00	789	16.0	cloudy	
441,		_	cutofnanye		6.49	11.74	787	6,2	cloudy	
1114	_		outofrenk		6,47	11.78	786	2.6	cloudy	
111		_	782	0.42	Gilla	11.60	782	3.9		
1123			208	0.37	10.76	11.56	778	4.7		
1126			112	0.34	6.45	11.44	777	10.0		
1130			65.2	0.29	6,45	11.30	778	108		1
133			41.1	0.28	6.46	11.27	777	11.3		
-1	Y i									
								-		
			1.5		- 7 - 2					
								-		
-		-	-				-			
FFA MANRON	on parameters from E	PAISIUS-95/XX	4 Anni 1998						-	L
AMPLED BY	PRINT) / AFFILIATIO	N	SAME	HER(S) SIGNATURE	SAMPLING	DATA		SAMP	LING INTRAFED AT	SAMPLING ENDED AT
									1135	1140
MIT OR TUB (el)	ING DEFTH IN WELL	SAMMER	UMP FLOW RATE (ML p	(a) unucita)	FIELD PARAMET	ER MOVIEDRIN	IC EQUIPMENT MC	DEL & SERIAL	16.	*
F. 6 1000 610	TANHATION (T		PIFEC	FILTERED Y	N FILTERS	IZE pan			man mare	
ATERIAL CODE				our Equipment Lyne on PP + Privatoria	nu S. Pasans	La bronce de	Critish (Specific)		(DIPLIE) ATE	W M
mar coot	au midel			ONDITION CHE				roplicable)		
			General Condition							/ Broken / None
			PVC? Y/N					/ Damaged	/ Nane	
	or canding 4000	nd well?	/ / N Con	Greie Collar. C	COU I LIACKE	G / Leakir	d v lanus			



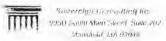
Address to 1996

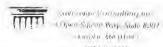
MONITORING WELL SAMPLING LOG

Sovetege (consulting inc. 2 Open Forwer Sorr Sorten in Thispake: MA DITMO

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CS.	-11 t	coers	Plother Code	MUPL	MA			6/7/		10 -0
ORCI MY	(001 U	co2	Metr nivered)	14	pool (Control for MY (1))	Wit	(feet)	N/N	(Blues)	WA
DING DIAME		TURBIG MA	TERIAL CODE	PIRGE PONE		DATA		PUMP ECHAPME	ENT MODEL & SERIAL	-
tiesa	14		TOLY SIA		done			GALLON2	107	ERS
		7777 1997 799	1 - 004. 125 - 006.						IN = 3 785 LITERS	TOTAL VOLUME PURG
PTH (Jeet)			PUMP OR TUBING DEPT				S INITIATED AT		IG ENGED AT	GALLONS
		1000	6317	There (total)	054					HITERS
WATER	LEVEL STABL	IZATION	DEPTH TO WATER W	ITH PUMP						
TIME INTER	VAL FLOW R			PUMP SETTINGS			DEPTH TO W	ATER (leel) END	Water Level Stable (Yes of No)	VOLUME PURGED DUR INTERVAL (mL)
					-					
					-					
-	-	-							-	
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mUmin)	WATER (feet)	(NLO)	OXYGEN (Ing/L)	200	(*C)	CONDUCTIVITY (µS/cm)	(NV)	(describe)	(doscribe)
3-5 (mrujos)*	(100-500 net/min)	144- 0 334	34% 10%fr	() 10%)"	14. 0.15	[4/c 3%]*	(4). 3% *	Jos somer		
157	500		May Colin	2.48	6.72	12.34	764	20.2		
200		-	SE BOO None	0.76	6.57	12.34	764	3.5		
203			W San San	0.59	6.55	12.28	764	-1.2		
206			OF OCO CAR	0.50	6.53	12.31	764	-4.6		
210	-		714	0,44	6.51	13.24	76.1	-4.7		
1213		_	4.36	0.37	6.51	11.84	76/	-2.6		
1217		_	205	0.36	651	11.68	757	0.1		
730			137	0.32	6.51	11.79	7.58	1.3		
123	877	_	87.3	(1:50)	6.51	12.00	758	2.2		
225	_	_	85.7	0,29	6.50	1209	757	26		
										-
		-		L-20-3						
						1000		-		
									-	
		1,50		90.00						
EPA stabliza	lion parameters from	EPA/5/0/5/99/50	# April 1996							<u> </u>
			4.4		SAMPLING	DATA			And Constitution	
AMPLED BY	(PRINT) / AFFILIATE	CN	SAMP	LERISISIGNATURE	S			SAMP	1127	SAMPLING ENDED AT
	MELITETHINGS	L MAPER	NAME OF STREET	ci sumaç.	FIFTH PROMAME!	Th Mentura	as Estimated an	IOLL a STRIAL		11120
cel)					300					
IELD DECON	TAMINATION A	, M		OFILLERED Y On Enjoyment Typic	N INTER	\$17E \$10			DUPLICATE	9 (9)
ATEMAL COD	Es AG - mube	s ches ca = co		ce PP i PSIVILIDAYO	our 9 seculo	I = Teron D	Giver (Specific			
			WELL C	ONDITION CHE	CKLIST (drule	appropriate item	(s), cross out if not i	appropia)		
	sh Mount / Stan f Rain Water Be		General Condition	50			Good / Brake Riser Good			/ Broken / None
			Y / N Con							
EMARKS	6									



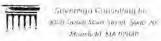


Low Llow Sampling 508-139 1200 4 . 7 / 512 (1658) WILL DIAM THE AYER USACE - Devens 6/7/2010 10-00 DEPTH TO BOTTON Danes DED SEVENIO DEPTH TO WATER ALDOI-002 NA test) NIA 1 PURGING DATA TOMY ECHIDMENT MODEL & SETTIAL AS TUDING MATERIAL CODE (sembelow) POLY Geopump GALLONS WELL VOLUME PURGE: I WELL VOLUMB: HOTAL WELL DEPTH - STATIC DEPTH TO WATER! X WELL CAPACITY WELL CAPACITY [Galloris Per Foot] 0.76 = 0.02; 1' = 0.04. (.25 = 0.06. 2' = 0.16. 2' = 0.37. 4' + 0.65; 5' = 1.02; 5' > 1.42, 12' = 5.88. GALLON - 3785LITERS TOTAL VOLUME PURGED WELL SCREEN INTERVAL DEPTH (leet) WITH PUMP OR TUDING OCETITISH FINAL PUMP OR TUBING DEPTH IN PURCING INITIATED AT WELL (feet) FURGING ENDED AT GALLONS HERS 054 WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP (foot) TIME INTERVAL FLOW RATE PUMP SETTINGS DEPTH TO WATER (feel) Water Level Stable VOLUME PURGED DURING (min) (mUmin) START (Yes or No) INTERVAL (mL) FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR CDOR WATER (NTU) OXYGEN CONDUCTIVITY RATE (°C) (mV) (describe) (describe) (myL) (1/- 1%)* (mUmin) (feet) (4) 10%Y 14/ 38)* ()/- 10mV) 452 400 1.2.36 6.66 973 16.5 35 Dut of range 9.8 971 62 Out of range 0.17 6.55 12.21 965 -16. -16.5 300 1012 0.59 6.55 12.13 967 305 660 SE 11.99 15 0.66 967 1307 454 46. -14.7 0.71 6.55 12.01 EPA stabilization parameters from EPA/540/S-95/504. April 1996 SAMPLING DATA SAMPLER(S) SIGNATURES SAMPLING INITIATED AT SAMPLED BY (PRINT) / AFFILIATION SAMPLING ENDED AT 3/3 SAMPLE PUMP FLOW RATE (ML per minute) PLIMP OR TUBING DESTRUM WELL FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL HE (lets) FILTER SIZE ______ into FELD FILTERED Y HELD DECONTAKINATION DOPLICATE 14 draten Erpopment Type MATERIAL CODES AG : Americ Glass - CG + Clear Glass ; PI = Paryphityleire PP = Palypropyleire S - Sécond I : Tellins 10 : Other (Specify) WELL CONDITION CHECKLIST (circle appropriate item(4), cross out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps Good / Broken / None Lock: Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb? Y / N PVC Riser: Good / Damaged / None evendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS





US	ACE - De	wins	PROFETTOEA	non uex.r	14			DATE G/7		WELL IN 10-03
CALLED C. CALIFORN	leol -co		(vett allameter (vetus)	3/4	(feet) NATE	î/A	(len)	MOTTOR	(ppiny)	NA
			ATCHIAL CODE	IPURGE PUN	PURGING	DATA		DOMEST FARMEN	NEMODEL & SEMAN	
HING DIAME DEST	7/2	(see below)			open	D		10000		
ELL VOLUME	PURGE: ! WELL	VOLUME: (TOT	AL WELL DEPTH - STA	TIC DEPTH TO WA	TER) X WELL	APACITY		GALLONS	(6)	ras
LL CAPACIT			1" = 0.04. 1.25" = 0.06. PUMP OR TUBING DEPT	HIN FINAL PEIME			MITIATED AT	PURGIN	N = 3.785 LITERS G ENDED AT	TOTAL VOLUME PURGE GALLONS:
PTH (lest)		WELL (WELL (ree)	7711	y and it			3.0 9.5 0	LITERS.
WATER	LEVEL STABL	IZATION	DEPTH TO WATER W	ITH PUMP.	97	-				
TIME INTER			(faet)	PUMP SETTING	S		DEPTH TO W	ATER (fest)	Water Level Stable	VOLUME PURGED DUR
(min)	(mU/ni	n)				-	START	END	(Yes or No)	INTERVAL (ml.)
	-				-					
				_		_				
_										
			, , , ,							
TIME	FLOW	DEPTH TO	TURRIDITY	DISSOLVED	pH	TEMP	SPECIFIC CONDUCTIVITY	ORP	COLOR	GDOR
	(mL/mln)	(feel)	(NTU)	OXYGEN (mg/L)	1000	(°C)	(y5/cm)	(mV)	(describe)	(doscriba)
11UA	(100-500 m) minit	144- 0.3),	out of range	1 55	1 70	12 79	175.75	28,4		1
UUE	700			0711	6.10	13.29	2575	11 -		-
17.)		_	artotrany	0.62	6.49	1233	2565	14.1		-
430			outofrange	0.48	1111	1000	2547	5.2		
700			out of range	4	6.47	19.13	DEUT		-	
500			Cutotrange	1.30	646	1	7741	-3.4		-
2/13			Our ofrange	Orod	6.47	1207	8550	-5.5		+
-			-							-
					-			-		
				-				+		
					-					
					-					
-										-
=				-					-	
	1				A 4 4		11000		- 0	
-31		y	4.00		15.05					
O4 stabilizati	on parameters from i	Dair inic peign	1 A-2 4005							
I'm Statiment	on parameters from t	CHANCHOLS-BOXDO	Wha tage		SAMPLING	DATA	_			
MPI ED BY (PRINT) / AFFILIATIO	DN1	SAMPL	ER(S) SIGNATURE				SAMPL	ING INITIATED AT	SAMPLING ENDED AT
IMIT TO THE	ING DEPTH IN WEL	learnie n	UMP FLOW RATE (mt. po	r animulas)	TEIELD BARALES	ea Monacoan	G EQUIPMENT MC	DEL K SERIXI	505	1 1510
et)	ING DEPTH IN WEL	SAMPLE	OMP PLOW POLIE (MIC PO	(minue)	PIECO PAROME	EH MONTOWN	O CHOMMEN MC	DEL & SEMINE	45	
(I is post post	TAMINATION (Y)	N	F)61Q	FILTERED Y	N FR TEXT	502E pm			DUPLICATE	у у
1001000				n Equipment Fyjie		- Salene w			()districting	X N
TERIAL CODE	AL ENNE	CHASS DG / Cub		ONDITION CHI				HANCHOO!		
nn Flus	h Mount / Stand	f Pipe	General Condition				Good / Broke		Lock Good	/ Broken / Nonn
			PVC? Y / N				liser: Good			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	of Panding Arou	ind Welli? Y	/ / N Conc	rele Collar: C	Good / Crack	ed / Leakin	g / None			
EMARKS										



Successful Consulting Inc. Holyake MATHAU

t Open Square Way Sine #307 Low Llow Scampling 500 139-1200 art assittance LE ACE PRINCE FATE ATMAN 6/1/2010 Ayer, NIA 10-02 Devens WELL DIAMETER DEPTH TO WATER DEPTH TO BUTTOM (form) DOCTO- Y Commen **PURGING DATA** TURUNG DIAMETER THRING MATERIAL COCK MURCE PUMP TYPE PLIMP EQUIPMENT MODEL & SERIAL #s (see below) TOI Up decibouring GALLONS WELL VOLUME PURGE: I WELL VOLUME (FOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallors Por Frant) 075 = 002, 1° = 004, 1.25 = 0.06, 2° = 0.16, 3° = 0.37, 4° = 0.65, 5° = 1.02, 6° = 1.47, 12° = 5.86 GALLON = 3 785 LITERS TOTAL VOLUME PURGED WELL SCREEN INTERVAL INITIAL PLIMP OR TUBING DEPTH IN PLIMP OR TUBING DEPTH IN PURGING INITIATED AT FURGING ENDED AT GALLONS CEPTH (leel) WELL (log) WELL (Icci) 084 UTERS WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP (funt) TIME INTERVAL FLOW RATE PUMP SETTINGS VOLUME PURGED DURING DEPTH TO WATER (feet) Water Lovel Stable INTERVAL (ML) (mL/min) START END (Yes or No) (min) TIME FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR ODOR RATE WATER DXYGEN CONDUCTIVITY (NTU) (°C) (mV) (describe) (doscribe) (mUmin) (feet) (mg/L) (ms/em) (10: 10%) (100-500 mL/c 11/ 031 147 (0:5) (17: 3%) 400 6.55 49.0 2857 745 0.96 13.02 Outotrange 500 82 54 2858 out utrang Outofrance 72 5L 2860 0.54 54.2 out of range 2366 but of rung 48 187 37 57 1905 12.55 50 Strel Ray 1810 EPA stabilization parameters from EPA/5/0/S-85/504 April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION SAMPLER(S) SIGNATURES SAMPLING INITIATED AT SMAPLING ENGER AT 19/3 PUIAP OR TUBING DEPTH IN WELL. (feet). SAMPLE PUMP FLOW RATE (INL. per minute) FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL 92 FIELD-BILTERED FR TER SIZE and FELD DECENTAMINATION Y N DUPLICATE Filtration Engagement Type

Type: Flush Mount / Stand Pipe

WELL CONDITION CHECKLIST (onche appropriate imm(s), cross out if not application) General Condition: Good / Needs Repair

Well Caps Good / Broken / None

Lock: Good / Broken / None

Evidence of Rain Water Between Steel & PVC? Y / N.

Is Well Plumb?: Y / N

PE Physilipage Pr Polymoppen; 5: Secure 1: Tallon D: Other Page ly

PVC Riser. Good / Damaged / None

Evendance of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None

AG = Ainter Gipss Ett = Clear Glass

MATERIAL GODES

in Consulting his th Man file of Surfe 202

MONITORING WELL SAMPLING LOG

Sovereign Consulting Inc. a Open Square Way, Some #397 Holyake MA 01046

lanstella MA 02040 Law Flow Sampling 500-320-3200 413-240-0650 PROJECT (OCATION) 18/2011 >HM 16 62 MEMER! WELL DIMMETER DETTH TO WATER DEPTH TO BOTTOM (mchest thous Heat (gensy) **PURGING DATA** TURING MATERIAL CODE UNGE FUMP TYTE PUMP EQUIPMENT MODEL & SERIAL AS G DIAMETER tone inform 408] GALLONS mas WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X. WELL CAPACITY WELL CAPACITY (Goldons Per Foot) 075 - 007 1 - 004 125 - 006, 7 - 016, 3 - 037, 4 - 065, 5 - 102, 6 - 147, 17 - 588 1 GALLON = 3 785 LITERS TOTAL VOLUME PURGED INITIAL PUMP OR TURING DEPTH IN PINAL PUMP OR TUBING DEPTH IN WELL ((set)) WELL SCREEN INTERVAL PURGING INITIATED AT PURGING ENDED AT SALLONS DEPTH (leat): 8.2550 TERS DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION FLOW RATE TIME INTERVAL DEPTH TO WATER (feet) Water Level Stable VOLUME PURGED DURING PUMP SETTINGS (Yes or No) INTERVAL (ML) (mL/min) (min) TIME FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR COOR RATE WATER (NTU) DXYGEN CONDUCTIVITY (mV) (describe) (describe) (°C) (+/- 3%)* (mil/min) (feet) (mg/L) 101- 0.05 (.). int (4)- 10%) 1-7- 10% (100-500 mt/mir (1/- 10mY) 2746 300 2060 Scla 32 2573 144 1.59 12.45 51 2464 2 12.76 466 1.40 54 -22.2 59 2832 619 OUT BOTTON 1.1= 11_ 12.54 11:5.9 14 12.57 2826 -97.9 1.16 5.70 30 12.54 41-EPA statistical parameters from EPAIS40/S-95/504 April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION SAMPLER(S) SIGNATURES KIPLING INITIATED AT SAMPLING ENDED AT 9 25 FUND OF TUBING DEPTH IN WILL SAMPLE FUMP I List's RATE (out the monde) FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL MS FUTO FILTERIO Y FILTER SIZE (40) MENICATE FIELD ULCONTAMINATION Y N M Edication Equipment Type MATERIAL CODES AG : Amber Glass P.G : Ciezr Glass PT - Ptaytatonyleine 3 + Strone 1 + Inton O - Other (Specify) PE - Polyottyjone WELL CONDITION CHECKLIST (Grade appropriate item(s), cross out if not applicable) Type Flush Mount / Sland Pipe General Condition Good / Needs Repair Well Caps: Good / Broken / None Good / Broken / None ividence of Rain Water Between Steel & PVC? Y / N Is Well Plumb? Y / N PVC Riser Good / Damaged / None

Concrete Collar. Good / Cracked / Leaking / None

- 55

REMARKS.

Evendence of Ponding Around Well? Y / N



Suvereign Consuming the Dipen Journal Way Saile HIR Bulgake MARTINE a CASahandsa

Suff t note			E-MORE L FOX	OCITA				DATE	\$1981A	WELL NO
OVECT MOMBER	(furthers) (flow) (flow) PURGING-DATA								PriD READ	ING HILL TO COX
						DATA				
DING DIAMETER		(NEC POSTA)	CHRIMI CODE	PURGE PUL	il, LAbE			DOME, EXTRIBING	ENT MODEL & SERIAL II	150
ELL VOLUME PUR	GE TWELLY	DLUME: [TOT	AL WELL DEPTH - ST	TATIC DEPTH TO WA	TER) K WELL	CAPACITY		GALLONS.	ci ci	LP5
			T = 0 04, 1.25 = 0.06;				7: 12" = 5.88	1 GALLO	N - 3.785 LITERS	TOTAL VOLUME PURGE
ELL SCREEN INTE			PUMP OR TUBING DE			TH'IN PURGIN	IG INITIATED AT	PURGIN	IG EMPED AT	GALLONS:
e tri (iisa)	-1	, , LLL	eur.		2	1 9	1.45			LITERS
WATERLEV	EL STABLE	ZATION	DEPTH TO WATER		9					
TIME INTERVAL	FLOW RA	TE I	(leat)	PUMP SETTING	S	بناب	DEPTH TO W	ATER (feet)	Water Level Stable	TVOLUME PURGED DURI
(min)	(mL/mir)					START	END	(Yes at No)	INTERVAL (mt.)
					-					
							11			
TIME	RATE	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	PН	TEMP ('C)	SPECIFIC	(mV)	COLOR (describe)	ODOR (describe)
	(m) /min)	(feet)	200	(mg/L)	5.56		(us/cm)		(daseme)	(oossilee)
2-5 ununtos). 1100	- 500 nutrains	(+/- 0.3)*	(1/- 10%)*	(-/- 10%)*	(e/: d.i)*	1+/- 194)*	(-/- 3%)*	1-/- 10mVy		-
			COL OF	1.00	5.91	14.95	276.2	-/47.8		
10			0	09	6.04	15.02	2734	-222.1		
15				0.88	6.11	17.14	2000	-1355		
				0.452	10 26	14.33	2345	1699		
			1	1				124		
				_	-				-	-
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		-								
-					-	-	-	-	-	
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		-		,					3 4	
			4.						,"	1
		+ +								
EPA slabilization pr	rameters from 6	PA/540/S-95/50	4 April 1996							
AMPLED BY (PRIN	Y) / AFFRIATE	N	Text	IPI ERIS) SIGNATUR	SAMPLING	G DATA		Isane	LING INITIATED AT	SAMPLING ENDED AT
America so in our	14144 5 3845 5140			in territory and interest					7110	SAME ENGLINEE (III
JMF OR TUBING	DEPTH IN WELL	SAMPLE I	PUMP FLOW HATE (ML	per minute)	FIELD PARAME	TER MONITORI	NG EQUIPMENT ME			
(4)			C. 1052-1002-100		W. 55 G. C. W. C.) = (N) - d) N - M - M		336-39-200.		
ELD DECONTAM	NATION IN	0	FIEL	D.ER.TERED Y	N FILTER	SIZE pm			DEMOCRATE	y N
4.6	********			ation Dyspment Type					DOM: MENTE	, N
ATERIAL COURS	AG + Jurger	Class CG = Cla		CONDITION CH				English (Co.)		
PI 1 1	Long Graden	(8)		CONDITION CH					1000	(80 too) (4)
										/ Broken / None
ype: Flush M				Jan 3A/m D 13	threader to be to	AL DIVI	Diene Coned	/ Damaned	Mone	
vidence of Ra			Y / N Co					Daninges	14500	



ROJECT MANE			PROJECT LOC	A-LON				MATE !	9. 12010	SHM16 O
REMINDIN TO SULP			WELL DIAMETI (nulles)	B	DEPTH FOWATE	DOTTOM PID READING (MINO)				
JOING DIAMETER		TURING MATER	HAL CODE	PURGE POM	PURGING)	DATA		DEITAP EQUIPM	FRT MODEL & SERVAL II	6
ochos)		(see helow)							THE LANGE TO	
ELL VOLUME PUR	GE: 1 WELL VO	LUMB (TOTAL W	ELL DEPTH - ST	ATIC DEPTH TO WA	TER) X WELLS	APACITY		BALLONS	1.0	EAS.
PLL CAPACITY (Go PELL SCREEN INTEI EPTH (Icol)		NHIAL PUA WELL ((ce))	104, 125 ≥ 0.06. IP OR TUBURG DEP	YRUA (FUNAL PUMP WEEL (feet)	4 = 0.65; 3'=	107, 6°=147	GINITIATED AT		ON = 3.785 LITERS IG ENDED AT	TOTAL VOLUME PURGED CALLONS: LITERS
WATER LEV	EL STABLIZA	ATION DE	PTH TO WATER	117		+		_		1
TIME INTERVAL (min)	FLOW RATE (mL/min)	E ((e	el)	PUMP SETTING	S		DEPTH TO WA	ATTER (feat) (END	Water Level Stable (Yes or No)	VOLUME PURGED DURI INTERVAL (IIIL)
	FLOW RATE (mL/min)	DEPTH TO WATER (feel).	TURBIDITY (NTU)	DISSOLVED OXYGEN (mg/L)	pH pH	TEMP (*C)	SPECIFIC CONDUCTIVITY IIIS/cm)	ORP (mV)	COLOR (describe)	ODOR (describe)
	cc.		59.6	45,13	6.38	14.16	33 33	49.9		
15			14.7	4.32	(0.17	13.37	36	50.1		
	35			w						
		Uranic Position	27 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							
EPA stabilization par	ameters from EPA	1340/8-95/504 Apr	ii 1896		SAMPLING	DATA				
AMPLED BY (PRINT				PLER(S) SIGNATURE	S				ING INITIATED AT:	SAMPLING ENDED AT
ELD DECONTANTING D		ANNELS PUMP	FUND	of three Y			IG EQUIPMENT MO	IUCE & SEKIAL	DUNKKATE	V
				чио Егриппоі Туре					DUMENTE	У
MERIAL CODES	AG = Archel Glas	st. CG - Clear Gla		ONDITION CHE				mesablei		~
vpe Flush Mo vidence of Rain vendence of Po	Water Betwe	en Steel & PV	General Condition	on: Good / Nee Is Well Pli crete Collar: G	eds Repair umb?; Y / N	Well Caps: PVC F	Good / Broke Riser: Good	n / None		/ Broken / None
EMARKS:										



MONITORING WELL SAMPLING LOG Low Flow Sampling

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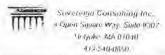
Syvereign Cruss/Hing Inc. 4 Open Square Way, Same WIDZ Halyoke: MA G17049 415-140-0660

FRUIT LIAME PRRIME TEOCHDON 60/4/2011 SHM 10 04 COJECT NUMBER WELL INAMETER DEPTH TO WATER DEPTITIONOTION (lent) (fixed) Interne! **PURGING DATA** TOMP EQUIPMENT MODEL & SERIAL IIS DUBUNG DIAME FEAT TURING MATERIAL COLL URGI POMP TYPE inches) (Aug Delow) GALLONS WELL VOLUME PURGE. I WELL VOLUME: (FOTAL WELL DEPTH - STATIC DEPTH 10 WATER) X. WELL CAPACITY WELL CAPACHY (Callors Per Foot) 0.75 = 0.02, 17 = 0.04, 1.25 = 0.06, 2 = 0.16, 3 = 0.37, 4* = 0.85, 5* = 1.02; 6* = 1.47, 12* ± 5.80

WELL SCREEN INTERVAL.

DEPTH ((cet)) WELL ((cet)) PURCORG INITIATED AT WELL ((cet)) GALLON # 1785 LITERS TOTAL VOLUME PURGED: PURGING ENDED AT GALLONS 24 1:45 LITERS WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP (leel) TIME INTERVAL FLOW RATE Water Level Stable VOLUME PURGED DURING PUMP SETTINGS DEPTH TO WATER (lest) (Yes or No) INTERVAL (int.) START END (min) (oil/min) TIME FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC DRP COLUR ODOR RATE CONDUCTIVITY WATER (NTU) OXYGEN (-C) (oiV) (describe) (rescribe) (nit/min) (feel) (mg/L) (us/cm) (*/F (GmV)* [100-500 mt/min] 1.4 031 (el. 10%) F46 10% tre 0.35 14/1 3%1° 11/- 356) 3 6.30 625 3 1326 306 4/4 loca 3 10.30 Co. 20 3.21 Le. 160 6.4.1 10 15 4.605 607 12.68 341 7.3,4 1022 * EPA stabilization parameters from EPA/SAINS-99/904 April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION SAMPLER(S) SIGNATURES. SAMPLING INITIATED AT SAMPLING ENDED AT 11/00 PUMP OR TUBING DEPTITION WELL SAMPLE PUMP FLOW RATE (mt. per minute). FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL IIS. FIELD ENTERED FIELD DECONTAMINATION Y N ENFLICATE CY. Freaton Engineer Tyles MATERIAL COURS AG - Amber Class CG - Creat Glass. PE - Posyethyranis PP + Pusyempyrane 5 - Sdeure 1 - Fefran O : Oren (Spec /v) WELL CONDITION CHECKLIST (circle appropriate dentity), cross out it not applicable. Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps Good / Broken / None Lock Good / Broken / None vidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb? Y / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Well? Y / N Concrete Collar: Good / Cracked / Leaking / Norm REMARKS.





KUJECT HAM	K.		FRGIERI 10G	ATIGN				DATE (0/2	6/2010	3HM16-64
CONFEST HUM	DER		(miles)	R	DEPTILTO WATE	B	(loni)	NOTTON	(Mana)	ing.
					PURGING	DATA				
DING DIAME	TER	(NEW below)	TERIAL CODE	PURGEPUM	PTYPE			PLIMP EQUIPM	ENT MODEL & SERVAL	fy.
I.L VOLUME	PURGE: 1 WELL	VOLUME: (TOTA	AL WELL DERTH - STA	ATIC DEPTH TO WA	tenj x welle	APACITY		GALLONS	100	ERS
		0.75 = 0.02	1' = 0.04 1.25' = 0.06	2 = 0.16, 3' = 0.3	; 4° = 0.65, 5° =			and the second s	HI + 3 7HS LITERS	TOTAL VOLUME PURGE
PTH (leel):	INTERVAL	WELL	PUMP OF TURNING DEP	WELL (local)			GINITIATED AT	PURGIN	IG ENDED AT	GALLONS:
					34	10	125			LITERS:
WATER	LEVEL STABL	IZATION	DEPTH TO WATER V	WITH PUMP:		- 1				
IME INTER	VAL FLOW R			PUMP SETTING	5	- 25.2	DEPTH TO W	ATER (leet) END	(Yes or No)	VOLUME PURGED DUR INTERVAL (mL)
TIME			T distance	2:525/740		I same	455.00		201.00	
1 avite	RATE	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	pHi	(°C)	SPECIFIC CONDUCTIVITY	(mV)	(describe)	ODOR (describe)
-6 mirailas):	(mL/min) (100-500 nst/min)*	(feet)	1+1-1091-	(mg/L)	ur air	(4)- 29)-	(4/- 3781°	(re tomer		3
5	400		131	4.97	(0.04	12.35	45	1.5.1		
11:			102.7	3.602	5,000	11.607	44	(02.3		
15			1609	349	5.50	11.24	44	C132		
20			109	347	5.77	11.15	44	56.1		
2 5	-		1017	3.48	5.71	Wille	44	5507		-
721			421	307	5.73		4/4/	59.5		-
C 34	-		10/4	2.11	3. 15.3	11.22	-/-/	137:3		-
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	-									
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a.	10.3	W.	- 23	2006	148		3.00	-		-
					1					
PA slabilizali	on parameters from t	PA/540/S-95/504	April 1996		SAMPLING	DATA				
MPLEO BY (PRINT) LAFFILIATIO	IN.	SAMP	LEK(S) SIGNATURE		DATA			ING INITIATED AT	SAMPLING ENDED AT
							-	10	45C	
MP OR TUB	ING DEPTH IN WEL	SAMPLE P	IMP FLOW RATE (IIIL P	er minule)	FIELD PARAMET	ER MONH ÜRIN	IG EQUIPMENT MO	DDEL & SERVAL	115	
	OF THE REAL PROPERTY.	-1	Jein o	ENTERNO Y	N CUTER	50XE4#0				
FI) DECOM	TANUNATION Y	N		им Едиплион Туре		20/2100			DUPPICATE	N5 /10
TERIAL GOOD	S AG = Amber	Glass CG / Chr.		on DE Chalphapy						
may Fig.	h Marriel 184	d Dinc		ONDITION CHE	4 5 3 4 4 4 4				Last Oct	I Dienie IVI
	h Mount / Stand Rain Water Ret		General Condition PVC? Y / N		umb?: Y / N		Good / Broke Riser Good			/ Broken / None
			' / N Com					Lamaged	r mone	
MARKS		2000				22.350				



ilim

Severeya Consultay inc. 1 Oper Smaro Way, Sala 1802 162966: MA 01140 414-540 0660

Low Date Schopling

OWESTOAM			PROJECT FOR	ATMM:				DATE (0)	S JAZVA	SHIDT-11. JUL
OJECT HUM	OCP.		WELL DIAMETI (Inches)	ER	DEPAH TO WATE		ne≠th 10 0 (lon0)	TOT I THAT	(ubun)	SHN7-11.5 EV
HING CHAME	TEH.	(See below)	RIAL CODE	PURGE PUM	PURGING	DATA		MILLER EQUIPME	DA PRODUCT & SUBJECT OF	9
	PURCE: 1 WELL		WELL DEPTH - ST	ATIC DEPTH TO WA	ren) x well	CAPACITY		GALLONS	Fit	DRS
		075 = 002; 114	0.04: 1.25 - 0.00.	2 = 0.10 3' = 0.3	A' = 0 65, 5'	102 5 = 1.47	: 12° = 5 88	IGALLO	N = 3 785 LITERS	TOTAL VOLUME PURGE
LL SCREEN PTH (leet):	INTERVAL	WELL (fee	IMP OR TUBING DEF	PTHIN PINAL PUMP WELL (loci)				PURGIN	G ENDED AT	GALLONS:
	×				44	1	455			LITERS
WATER	LEVEL STABL		DEPTH TO WATER (WITH PUMP:						
IME INTER	/AL FLOWR	ATE		PUMP SETTING	S		DEPTH TO WA	ATER (leet) END	Water Lovel Stable (Yes or No)	VOLUME PURGED DUP INTERVAL (mL)
tro-Z	100300						Direct.	Ciso		1007
							15234			
TIME	FLOW	DEPTHIO	TURBIDITY (NTU)	DISSOLVED	phi	(°C)	SPECIFIC CONDUCTIVITY	(mV)	(describe)	ODOR (describe)
-S minulas)'	(mL/mln) (100 500 mL/min)*	((co))	(ne 10%)*	(ing/L)	186 B 19	(v/- 190°	(47- 124)*	Link JulmVj*		
5	400	100 X-0	15.4	2.01	5.27	11.1.0	209	10.3.1	-	
10	70		10.54	1.65	5118	11.76	224	113.4		
E			29.3	1.52	5.13	11.57	224	114.4		
2			81.)	11.57	1010	11031	Ot ell ed	11-1.9		
-			-	-	-					-
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		35 11	1							
			1					1		
									A	
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									-	
PA stabilizat	on parameters from	EPA/5/10/S-95/504	April 1996		-	4				J
MALED BY	PRINT) I AFFILIATIO	300	ISAM	PLER(S) SIGNATUR	SAMPLIN	3 DATA		Isabei	ING INITIATED AT	SAMPLING ENDED AT
								1	510	22/22/20
	ING DEP TH IN WEL	I, SAMPLE PUI	AP FLOW RATE (INC.	bar immole)	FIELD PARAME	TER MONITORIE	IG EQUIPMENT MG	DUEL & SERIAL		-
eQ.										
LD DECON	TAKINATION Y	n		DiffLTERRO Y best Equipment Type	N PILIBRI	502E			DUPLICATE	X 40
VERIAL CODS	S AG > Arobe	Glast CG = Clear		hans Pite Pelyterics	lene Sathourn	T-Tallon O	Office (Specify)			
				CONDITION CH				mphatho)		
the property of the party	h Mount / Stan		General Condit	ion: Good / Ne		0000				/ Broken / None
			/ N Co					Damaged	1 None	
PHOCUPS.	or r-onding Arti	OLIN AKEMS I	14 00	nate sunar: (soou r wraci	CO I LEBRII	a r racing			



3092-1975-80c

MONITORING WELL SAMPLING LOG Low How Sampling

Sovereign Consorting tree
(1) and Sound Way, Sode #397
Makelin, MA (1)040
413-540-(46)

THE PROPERTY OF THE PARTY OF TH	FII.		WELL DIALET		GERGING WATE	9	TOEP3110	(e/fo	201 C	31-m/0-04
Table 1. T. October	***		(inches)		(fent)	POTICEM POTICEM (INDICATIONS)				
HUNG OIAMET	R	TI /BIANG MATE	RIAL E/DOL	PURGE PUM	PURGING I	DATA		MANUS ECHIPIAE	NT MODEL & SERIAL	L BS
eties) El I VOLUMES	TINGE: I WELL V	(Ann Indos)	AGIL PLOTE - CI	ATIC DEPTH TO WA	(ED) V WED 6	ADARITY		GALLOUS	p	nues
				2'=016, 3'=03			7: 12°= 5.88	1 GALLON	V = 3.785 LITERS	TOTAL VOLUME PURGE
ELL SCREEN I			MP OR TUBING DEP	WELL (tool)		THE PURGS	NG INITIATED AT		S EMDED AT	GALLOHS:
					54		1515			Lirens
WATER L	EVEL STABLE	(0)	EPTH TO WATER	WITH PUMP:			DEPTH TO W	UNED Ward	Water Lovel Stabil	VOLUME PURGED OUT
(min)	(nst/min		*,	POMP SETTINGS			SYART	END	(Yes or No)	INTERVAL (roL)
			· · · · · ·							
	4									
TIME	FLOW RATE (mLinks)	DEPTH TO WATER (feet)	TURBIDITY (NTU)	DISSOLVED DXYGEN (mp/L)	b)4	TEMP ('C)	SPECIFIC CONDUCTIVITY (u5/cm)	ORF (mV)	COLOR: (describe)	ODOR (rinscribe)
	(100 S00 mt/mm);	(+/- 0.3)-	11/ 10%F	PV-10%P	10. 0.17	10% 98%	14- 300,	14/ IDAVE	-	-
5	300		69.7	244	5.18	12.41	5466	53.1		
10			91.8	0.75	5.31	12,11	433	50.4		
15				Osto	5.34	11.67		520		
20			454	0.43	5.39	11.43		27.6		
25			795	0.43	5.59	11.4.5	43	22.7		
30			784	10-11-12	13,216 %	11-29	(0111)	121.9		
										-
-			-			-			-	4
	-						-			+
			-							
										+
										7
		-00-	4			-			1	
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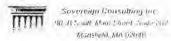


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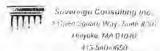
MONITORING WELL SAMPLING LOG Law Flow Sampling

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[643] [641]							KOTERNI	12 (5/2/5/2016 SHP77/C GI			
LIBITIS DIAME	TER		ERIAL CODE	PURGE PURA	PURGING I	DATA		PUMP COUPLI	ONT MODEL & SERVAL	96	
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		THUMBS SELL	L WELL DEPTH ST		N. M. Decker						
ELL SCHEEN		INITIAL P	LIMP OR TUBING DEP	THE FINAL PLANE	OR TUBING DEPT	HIN PURGIN	GINITIATED AT		ON = 3 785 LITERS IG ENDED AT	GALLONS PURGE	
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(mln)	(nil./mi	n)					START	END	(Yes or No)	INTERVAL (ml.)	
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	RATE (mUnin)	WATER (feet)	(NTU)	OXYGEN (mg/L)		(.c)	CONDUCTIVITY (IIS/cro)	(mV)	(describe)	(describe)	
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ÆLD DECO	STANSMATION Y	Ñ	1	FITTURED Y	N FILTER	SIXE 100			DARLICATE	Y N	
ATERIAL COL	DES AD = AMEL	GISEL CO CIVE		rns FP - Polyseony	New Stateship	1 - Tallian D.	Ottor (Specify)		_		
			WELL C	ONDITION CH	ECKLIST (and	порториаль ком	(a), cross out if rest	(akterstagge			
	sh Mount / Stand	7.4				20 A 1 A 1 A 1 A 1 A 1				/ Broken / None	
			PVC? Y / N					/ Damaged	7 None		
EMARKS		and Mellis A	/ N Con	creie Collar.	ood / Crack	ed / Leakii	ng / None				



Low Flow Sampling



Soft (19.320) DAMONIC, BYNG PHOLECTIOCATION 6/8/2010 S1117-16-69 DEPTH TO BOTTOM (feet) CLIEFT FRUMIER MELT THANKE LEIS PROTOEACING (moves) fraction) (lent) PURGING DATA TURNING OWNETER TUBING MATERIAL CODE PLIMP EQUIPMENT MODEL & SERIAL IN utles1 (see Dekov) WELL VOLUME PURGE: 1 WELL VOLUME (TOTAL WELL CEPTI) - STATIC DEPTITIO WATER) & WELL CAPACITY WELL CAPACITY (Gollons Per Foot): 0.75 = 0.02, 11 = 0.04, 1.25 = 0.06, 21 = 0.18, 01 = 0.37, 41 + 0.65, 51 = 1.02, 61 = 1.47, 121 = 5.86 T GALLON - 3 785 LITERS TOTAL VOLUME PURGED INITIAL PUMP OR TURING DEPTH W FINAL PUMP OR TUBING DEPTH IN WELL (feet) WELL (feet) PURGING INITIATED A PURGING ENDED AT GALLONS: DEPTH (feet): 16042 14 LWEDS DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (faet) FLOW RATE PUMP SETTINGS DEPTH TO WATER (leet) Water Level Stable VOLUME PURGED DURING INTERVAL INL) [ml./min] END (Yes or No) SPECIFIC TURBIDITY DISSOLVED ORP COLOR ODDR TIME DEPTH TO TEMP FLOW pt4 (NTU) RATE WATER OXYGEN (°C) CONDUCTIVITY (mV) (describe) (describe) (mL/min) (feul) (mg/L) (03/cm) (100-500 mt/min 12-6 minutes CO) CS 297 Kocks 0.562 5017 903 -1035 500 0.3 29 929 12.412 48es.7 1646 1.3.50 -81.3 1651 0.44 6.36 940 11.605 250 11.51 1654 17.41 66 6.33 9391 -66:7 3607 - 012 16057 11.42 0.46 Ce 34 700 0 4 3 1701 1128 11, 12-1 61101 COL 1 1000 11.23 040 1.30 1, 2, 5 264 1 711 Co die 935 11.1 91 60 EPA stabilization parameters from EPA/540/S-95/904 April 1990 SAMPLING DATA SAMPI FRISI SIGNATURES SAMPLING WATHATED AT SAMPLED BY IPRINTIL ALFILIATION SAMPLING ENDED AT 1715 FUNE OR THEN OF DEFTE M WELL AMPLE PUMP I LOW RATE (III) per number FILLD TYAISAMETER MONOTORING EQUIPMENT MODEL & SERIAL HA (leet) PARLE-FILTERED Y FIETER TOPE par DUPLICATE FIELD DECONTAMINATION Y N 1.1 Filtration Expendent Type MATERIAL CODES AG - Armen Glass CG : Count Glass Pf : Desymptone PP : Posymotytone S : Statom 1 : Tolina 11 : Olimar (Specially) WELL CONDITION CHECKLIST (circle appropriate non(s), cross out if not applicable) Type Flush Mount / Stand Pipe General Condition: Good J Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None vidence of Rain Water Between Stret & PVC? Y / N is Well Lumbs Y / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Lasking / None REMARKS

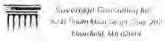


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Low Llow Sampling

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LL CAPACIT		0.75 × 0.02; 1	"= 0.04, 1.75 = 0.06, FUMP OR TURING DEP	2 . 5 16, 3 = 0 3	7: 4 = 0.65 5 =	TURN TOURS			H = 3785 LITERS	TOTAL VOLUME PURGED GALLONS:
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ME INTERI	VAL FLOW R			PUMP SETTING	S		DEPTH TO W	ATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DURIN
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961)										
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ATERIAL COR	GS AG F Amile	Glass Cd (des		ONDITION CHI				mullionists i		
VDe: Flue	h Mount / Stan	d Pine	General Condition						Lock Good	/ Broken / None
			PVC? Y / N				Riser: Good			MONEU / MORE
			/ / N Con	W-110-W-110-W-110-W-110-W-110-W-110-W-110-W-110-W-110-W-110-W-110-W-110-W-110-W-110-W-110-W-110-W-110-W-110-W				Daniegeo	140009	
EMARKS					414/4	- Free Heading	-			





MONITORING WELL SAMPLING LOG 1 sugar Seguiro while Small Halo? Troug Flow Escopling 2004-120-3700 413-540 nesti PROJECT HALV tion (Carried 60/20/2006: SHIM 100 EN OUEC'T HUMBER WELL THAMETER DEPTH TO WATEL DEPTH TO SOTTOM (Red) (lees) Oums I **PURGING DATA** TUBING DIAMETER TORUNG MATERIAL PARE PURCE PERMIT TYPE PUMP EQUIPMENT MODEL & SERIAL VIS (males) (sex tidge) GALLONS WELL VOLUME PURGE: 1 WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gillions Per Fron) 0.75 = 0.07; 5' = 0.04, 1.75' = 0.06, 2' = 0.16, 3' = 0.07; 6' = 0.65; 6' = 1.02; 6' = 1.47; 12' = 5.60 I GALLON = 3 785 LITERS TOTAL VOLUME PURGED INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN TPURGING INITIATED AT WELL SCREEN INTERVAL PURGING ENDEU AT GALLONS. DEPTH (Idet) WELL fleur WELL (feet) 16600 LITERS WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP (leet) TIME INTERVAL FLOW RATE Water Level Stable VOLUME PURGED DURING PUMP SETTINGS 14 DEPTH TO WATER (Iself INTERVAL (ml.) (ml./min) (Yes or No) (min) TIME FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR ODOR RATE WATER (NTU) OXYGEN CONDUCTIVITY (MY) (describe) (°C) (deserba) (milling) (mg/L) (µ5/cm) tve bir (-/- 34P (*/- 10mV) 11/- 10%t 14- 807 147 10%5 range 14605 70,9 C.4Le 6.18 2.47 1004 500 3.3 14610 1107 -95.0 6 (1.24 1272 0.30 1,200 12.73 15013 - 117. 1615 029 2057 6,24 12.51 · 12116 150026 13001 024 Cr 29 1037 2153 -1446 (7,27) 43 12 05 夏44 1 1 500 1630 0.1 EPA slabilization parameters from EPA/540/5-95/504 April 1996 SAMPLING DATA SAMPLED BY MYRRATYLAFFICIATION SAMPLER(S) SIGNATURES SAMPLING INITIATED AT SAMPLING ENDED AT 18,50 SAMPLE PULIT FLOW RATE (not per owner) PUMP OR TUBING DEPTH IN WELL FIELD PARAMETER MONDORING EQUIPMENT MODEL & SERIAL III. FIELD-FILTERED Y FIELD DECONTAMINATION Y N DUPLICATE 14 Fatrana's Equipment Type: MATERIAL CODES AC + Andley Filass CG : Clear Glass Polykhaylane PP = Palyermyaste S = 54cona 1 = 100m Q = (70m (Specify) WELL CONDITION CHECKLIST (circle approposite term(s), cross and it was applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb? Y / N PVC Riser: Good / Damaged / None

Concrete Collar: Good / Cracked / Lesking / None

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REMARKS

Evendence of Ponding Around Well!! Y / N



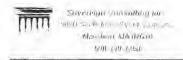
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MONITORING WELL SAMPLING LOG Low Llow Sampling

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PROJECT TROPE BARD WELLAUK TOOK 1000 mil DUTE T TRUMBER WELL DIAMETER OED-IN TO SWATER (melws) (feet) Inistrati **PURGING DATA** TUMP EQUIPMENT MODEL & SETTAL MY TUBING DIAMETER TURNIG MATERIAL CODE THEIR PUMP FYPE (see losow) inches! TALLOPS WELL VOLUME PURGE: I WELL VOLUME: (TOTAL WELL DEI/TH - STATIC DEPTH TU WATER) IN WELL CAPACITY WELL CAPACITY (Gallous Per Front) 0.75 = 0.02. 1' = 0.04, 1.25' = 0.06, 2' = 0.16, 3' = 0.37, 4' = 0.65, 5' = 1.02, 6' = 1.01, 12' = 5.68
WELL SCREEN INTERVAL [INITIAL PUMP OR TUDING DEPTH IN [FIRAL PUMP OR TUBING DEPTH IN [PURGING INITIATED. I GALLON - 3 785 LITERS TOTAL VOLUME PURGED TPURGING INITIATED AT PURGING ENDED AT GALLONS DEPTH (len) WELL (feet) WELL (feet) 9:47 945 LITERS DEPTH TO WATER WITH PLIMP WATER LEVEL STABLIZATION (feet) VOLUME PURGED DURING TIME INTERVAL FLOWRATE PUMP SETTINGS DEPTH TO WATER (feat) Water Lovel Stable INTERVAL (ML) (Yas or No) (mL/min) START (min) DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC COLOR DOOR nH OXYGEN CONDUCTIVITY RATE WATER (NTU) ('C) (mv) (describe) (describe) (mUmin) (feet) (mg/L) (µS/cm) (A/- 316)* 1100-500 mL/m (+/- 03) (4) 10%)* 14. 10%) to die 117- 1541 tal Books 09:47 0:00 1.6 F 500 Clear 73 8,03 14.50 115 36,5 5 clear 0.69 7.00 1.06 109 80,3 10 100.9 17.82 109 6.32 clear EPA stabilization parameters from EPA/540/S-95/504 April 1996 SAMPLING DATA SAMPLED BY (PRINTY) AFFILIATION SAMPLER(S) SIGNATURES SAMPLING INITIATED AT WJB CMH 09 SAMPLE PUMP FLOW HATE (not per immote) DWS OK MRING DESTROY WELL FIELD PARAMILTER MONTTORING EQUIPMENT MODEL & SERIALIA FIELD FILTERED Y FILTER SIZE ______ IIII TICLO DECONTAMINATION Y N DEPLICATE Distance Engineeri Type MATERIAL CODES AG Amhar Glass CG Clear Glass PL's Polyethylane Pls - Polypropyreise 3 - Silecule 1 fallon (1 - Ollie) (Specify) WELL CONDITION CHECKLIST (circle appropriate them(s), cross contained applicable) Type Flush Mount / Stand Pipe General Condition. Good / Needs Repair Well Caps: Good / Broken / None Lock. Good / Broken / None vidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser Good i Damaged / None Evendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS



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Low Llow Sampling

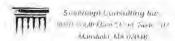
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FIELD-FILTERFOLY: N. FILTER SIZE (INT. SUPERIOR FOR PROJECT OF THE		DOBLITIM WILL	SAMBLE	DMF LOW RATE (ML	per minute)	FIELD PARAME	TER MONITORII	NG EQUIPMENT ME	DOEL & SERIAL	Dir.		
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To an experience of Ponding Around Well? Y. / N. Concrete Collar. Good. / Cracked. / Leaking. / None.	HELD DECONTAME	Y HOUTANI	N				SIZE pon			GUPLICATE	W 18	
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					PURGING	DATA				
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			+0.04, 1.25 = 0.00						N - 3 TANDITERS	TOTAL VOLUME PURG
VELL SCREEN EPTH (feet):	INTERVAL	WELLUE	OMP OR TUBING DE	WELL (leef)		ALCOHOL: PROPER		P. 100 CO.	NG ENDED AT	GALLONS
		تملله				10	. 36	10	:41	UTERS
WATER	LEVEL STABL	IZATION	DEPTH TO WATER (feat)	WITH PUMP:						
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										-
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	1	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mL/min) (160-500 mt/min)	WATER (feel) (%-03)	(NTU)	(mg/L)	pH:	(*C)	CONDUCTIVITY	(m/s)	(describe)	(discribe)
(3-5 minulear	500	(11- 0.3)	53.8	3,65	638	17-80	240	-14	ta 1/clea	
5	- T- T- T-		03.9	1,43	6.26	1364	214	-5/		
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EPA stateura	ion parameters from	PA/540/S-95/504	April 1996.		1	1	1	1	L	4
Service 1988					SAMPLIN	G DATA				
	L: JB			MPLER(5) SIGNATUR					10253	SAMPLING ENDED AT
(peet)	ar tomis-R(As)	CANTE PI	JAN OCH MAL				NGT LEASON SOLIT ME	HATTA SETTAL	d's	
FIELDTIFCON	Y MOLLANDAL	N		.D. FO. TERONO V anno Equipment Type		5/2F pm			DOM:NOA7E	* 4
MATERIAL COD	S AG Ame	Climits 15 - Line		thre PP Psychol						
			WELL	CONDITION CH	ECKLIST (circl	lo appropriate ann	n(s), cross out if not	applicable)		
200	h Mount / Stan I Rain Waler Be		General Condit PVC? Y / N	ion Good / Ne Is Wall I	400					/ Broken / None
Evendence REMARKS		und Weill? Y	I N Go	ncrete Collar:	Good / Crac	ked / Leaki	ng / Nane			



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MONITORING WELL SAMPLING LOG Low Flow Sampling

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J. (3.50)3.50(5)0.50(1

INVOLECT HAME PROPERTION ADDAY -05 10 DEPTH TO ROLLON PUTTHEATH TOJECT INJMOTE WELL IDAMETER DEPTH TO WATCH (levi) (ktono) (Rech) (mchis) **PURGING DATA** LIMP EQUIPMENT MONTH A SERIAL R. TURING DIAMETER TUBING MATERIAL CODE menes) (see helow) WELL VOLUME PURGE. I WELL VOLUME (FOTAL WELL DEPTH - STATIC BETTH TO WATER) & WELL EAPACHY WELL CAPACITY (Gallors Pri Foot) 0.75 ≥ 0.02 T ≥ 0.04; 1.25 = 0.06; £ = 0.16; 3 = 0.37; 4 = 0.65; 5 = 1.07; 6 = 1.47; 12 = 5.88 GALLON = 3 785 LITERS TOTAL VOLUME PURGED WELL SCREEN INTERVAL DEPTH (loci) INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN WELL (led) PURGING INITIATED AT PURGING ENDED AT GALLONS 11:04 11:06 ESTERN DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (feet) VOLUME PURGED DURING INTERVAL (ml.) FLOW RATE PUMP SETTINGS DEPTH TO WATER (feel) Water Level Stable (Yes or No) (min) (mL/min) START END SPECIFIC COLOR TURBIDITY DISSOLVED TEMP DHE ODOR DEPTH TO FLOW MH CONDUCTIVIT RATE WATER (NTU) **DXYGEN** (C) (mV) (describe) (describe) (mL/min) (loci) (mg/L) (µ5/cm) 1-4- 031. (+/- 10%) 52 -50 0 575 15.60 254 sultur 4,50 greenishan 13,24 05 54,7 2-15 6.18 256 -6C1 green ish. 1c lear kan 255 10 47.0 6.17 1200 64 3.28 clear 15 3.76 *955* 11:21 P 6.6 0.17 -68 clear EPA stabilization parameters from EPA/5/0/5-95/504 April 1996. SAMPLING DATA SAMPLER(S) SIGNATURES SAMPLED BY (PRINT) / AFFILIATION: SAMPLING INITIATED AT SAMPLING FROED AT 11:2 1213 SALAT-LE POUNT FLORY RATE (mil. por minure). TELU PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #8 (leaf) FILTER SIZE _____ INT PIELU FILIERFO Y HELO DECONTARINATION Y M DUMERTE et. Filtration Expensest Type PE-Polyalingtone PE-Endyprepriese Si-Stelline To-Talipo Di-Althor/Specify(MATERIAL CODES AG - Amber Chass GG / Clear Clink) WELL CONDITION CHECKLIST (cardle uppreprinte item(s), cross out if not appreciately Well Caps Good / Braken / None General Condition Good / Needs Repair Type: Flush Mount / Stand Pipe Linck Good / Broken / None vidence of Rain Water Between Steel & PVC? Y / N is Well Plumb? Y / N PVC Riser: Good / Damaged / None evendence of Panding Around Well? Y / N Concrete Collar; Good / Cracked / Leaking / None REMARKS

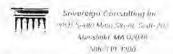
11:06 11:16



MONITORING WELL SAMPLING LOG Low Llow Sampling

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TO LET MILWIS			WELL DIAMET	Ē	REPTH TO WATER	4	(feed)	DEPTH TO BOTTOM POD READING				
Marine Colored Color		Forence	(A) France	Import	PURGING I	ATA	_	outun PALASTA	DIT HONE & CONS.			
JOING DIAMETER ICHES)		FUBING MATER	IAI CODE	PORGE PUR	IP TYPE			1	ENT MODEL & SERIAL N			
200000000000000000000000000000000000000		OF DIE LOLYF A	CONTRACTOR OF THE PARTY OF THE	a specialists	254,250 78 100			GALLONS		fRS .		
ELL SCREEN INT				THIN FINAL PUM	7. 4 = 0.65, 5' = OF TUDING DEPT		IT: 12' = 588 NG MITIATED AT		N = 3 785 LITERS IG ENDED AT	TOTAL VOLUME PURGE		
EPTH (feel)		WELL (teet)	55	WELL (leet)						LITERS		
WATERLE	VEL STABLE		PTH TO WATER	WITH PUMP:		_	-			1		
TIME INTERVAL	FLOW RA		21)	PUMP SETTING	s ,		DEPTH TO W		Water Level Slable	VOLUME PURGED DUR		
(min)	[mUmir					-	START	END	(Yes or No)	INTERVAL (mL)		
				386								
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	1 -0	TEMP	SPECIFIC	ORP	COLOR	ODOR		
TIME.	RATE	WATER	(NTU)	OXYGEN	ρH	(,c)	CONDUCTIVITY	The second second	(describe)	(describe)		
3-5 minutes; 110	(niUmin) (niUmin)	(leat)	19/- (0%)	(mg/L)	(*A 0 0)	(4-38)	(v/- 34)*	(146-10mV)*				
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41. 4	8 8	*										
PA statutzation p	arameters from E	PA(540/S 95/504 Ap	n 1096		SAMPLING	DATA						
AMPLED BY (PRI	(T) AFFILIATIO	N	SAM	MER(S) SIGNATUR		DAIA		SAMP	ING INITIATED AT	SAMPLING ENDED AT		
96) 96)	DELICITIVE	SAMILETERN	FLCrey HAJE cont.	da University	THE DIAMEN	LTC AT GREAT C. RO	OUT THEM MENT AT	THE & SERIAL	4-			
area do antido.	Alarm 19		Treu	ANTHRED Y	H FILTERS	1)7E non			Lincolnia	V		
FLG DECONTAM	C3112V			юн Европени Туре					DOM: ISAN	A. PL		
TERIAI CODES	AC - Anther	date co com co			FCKLIST tevelo		n(s), cross out it not	neghrabile				
yne: Flish N	ount / Stand	Pine (V 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			1 A months	Good / Brok		Luck Good	/ Braken / None		
		ween Steel & P\				The same of the same	Riser Good			- Same		
vendence of f		nd Welli? Y	N Cor	crete Cultar:	Good / Cracke	ed / Leak	ing / Nane	77				
REMARKS		+1	YR d	ce to	Canto	nte.	lus d	efect	dia	35-		
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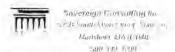


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GUECT NUM	ment.			WELL CHAMP TO	D	DIRINIDWAI	n e	(NEPTH 10)	MOTEON.	4/10 1000 HE SU	1)-05A
2000000				(with the first		(tem)		(feet)		(toung)	
TUBINI'S DIAME	TER	10	HING MALI	EMAL CODE	Prince num	PURGING	DATA	_	PUMP EDIJIPM	ENT MODEL & SERIAL I	19
(incoes)		-	that (Holdow)						GALLONS	line	DRS
	7 - 7 - 7 - 7			WELL DEPTH ST							1000
WELL SCREEN		F060) U75	INITIAL PI	= 0.04, 1.25 = 0.05, UMP OR TUUING DEF	THE FINAL PUMP			G INITIATED AT	PURGIN	ON = 1.785 LITERS NG ENDED AT	GALLONS
DEPTH (feet)	-		WELL Her	29	WELL (feet)		13	103	113	107	LITERS
WATER	LEVEL ST	ABLIZATI		DEPTH TO WATER	WITH PUMP:						*
TIME INTER		WRATE	1 "	feet)	PUMP SETTING	S		DEPTH TO W	ATER (loot) END	Water Level Stable (Yes or No)	VOLUME FURGED DI
(min)	- 10	nL/min)						SIART	END	(1620) (40)	WALEKANE (INC)
TIME	FLOW	DE	PTHTO	TURBIDITY	DISSOLVED	pН	TEMP	SPECIFIC	ORP	COLOR	ODOR
(3-5 mmules)*	(mUmio)	3	ATER leet) 0.3)*	(NTU)	OXYGEN (mg/L) (4) 10%)	(40 0 FP	(°C)	CONDUCTIVITY (#5/cm) (#7-19)*	(mV)	(describe)	(describe)
D)	400	100		11.0	9.45	655	21.89	740	62.9	clear	
5				1,53	9.70	6.13	17.04	1150	57.8	clear	
10				1.52	9.40	6.00	16.24	1194	63.2	clear	
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* EPA stabilizat	lon parameters	frain EPA/54	VS 95/5/14 /	April 1996		-					
SAMPLED BY	ERINTI/AFFIL	IATION	-	SAM	PLER(S) SIGNATURE	SAMPLING	DATA		ISAMP	LING INITIATED AT	SAMPLING ENDER AT
W. 22.00 2.2.2.0	WI	~			2007 (1025)					1:00	
	THE DESIGNATION	100	ANTIQE PUR	MINDWRATEON Y	m: mende]	RELUTATION	ICR MODITORIE	IG COUIFMENT NO		the second second	4
(lees)						1.4					
FIELD DECON	TANIDATION	Ý N		1000	D-FILTERED V	N PHIER	50/E pm			GMP/IC41E	у И
MATERIAL COD	Fig. AG ?	Limiter Grant	CG - Clear I	Glass PE - Polyethyli	tive PP - Polygropy	ppe \$ 5 Secore	ta felia di di	Uther (Specify)			
				WELL	ONDITION CHI	ECKLIST (circle	s appropriate ilem	(s), cross (in) il not	oppicablu)		
	Rain Wate	Belween	Sicel & F	General Condition VC7 Y / N / N Con	1s Well P	lamb? Y / 1	A BACI	Riser, Good			/ Broken / None
REMARKS		HELDING VV	>m2 1	(LO	mere canal. C	Jour Charles	LUMI / LUMI	21 / 196/110			



REMARKS:

MONITORING WELL SAMPLING LOG

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DESCRIPTION OF BELIEF LOSATERS -05 DEPTH TO RUI TOJE E F MAININGS DEPTH TO WATER DRU TOUATURE WELL DIVAMETER (pprovi (outfless) **PURGING DATA** TURING DIAMETER LIMP EQUIPMENT MODEL & SETTIAL BY (Ann holess) WELL VOLUME PURISE: TWELL VOLUMES (TOTAL WILL DEPTH - STATIC DEPTH TO WATER) X. WELL CAPACITY WELL CAPACIFY (Gallows Per Post) 0.78 = 0.02: 11 = 0.04, 1.25 = 0.06 2 = 0.18, 31 = 0.07, 41 = 0.65, 61 = 1.02, 61 = 1.47; 121 = 5.08

WELL SCREEN INTERVAL INITIAL PUMP ON TUBING DEPTH IN FINAL PUMP ON TUBING DEPTH IN PURGING INITIATED DEPTH (levt):

WELL (levt) WELL (levt) GALLON - 3 785 LITERS TOTAL VOLUME PURGED PURGING INITIATED AT PURGING ENOUGH AT GALLONS 13:33 39 13:38 LITERS DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (leet) FLOW RATE PUMP SETTINGS DEPTH TO WATER (feet) Water Level Stable VOLUME PURGED DURING INTERVAL (int.) (min) (mL/min) (Yes or No) DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR DOOR FLOW DXYGEN CONDUCTIVIT RATE WATER (NTU) ('C) (mV) (describe) (describe) (test) (mg/L) (mt/min) 1115/cm) 13/3Y O 5.95 936 500 15.63 Lan 13:43 5.41 15.06 98 ,09 190 190 15.12 10 5.74 Yan 193 107 14,65 tan/che 5.29 196 110 .01 00 5.74 194 194 2.96 14 95 Clour 7.79 5.23 14.77 0017 110 * EPA stabilization parameters hum EPA/540/S-95/SM April 1996 SAMPLING DATA SAMPLED BY IPRINTLY ASSISTATION SAMPLER(S) SIGNATURES SAMPLING INITIATED AT AMPLING ENDED AT WHITE OF TORMS PERSON MANUEL SAMPLE PUMP LUSTRAIL and per-metale: ESPLO PROBLEM LER MODELLADING, ECONOMISM MODEL & SERVAL RE FILTER SIZE ION PIELD FILTERED Y nurs water HELD DECONTAMINATION Y N 16 пискам Ецьфинет Турь PE - Peligillapare PP - Polypropylene 3 - Sissen 1 - Tellon (5 Onto (Specify) MATERIAL CODES AG - Amin: Glins GG - Clear Olula WELL CONDITION CHECKLIST (cycle appropriate limit(s), cross out if pot approcable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Lock. Good / Broken / None Well Caps: Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?, Y / N PVC Riser Good / Damaged / None Evendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None



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MONITORING WELL SAMPLING LOG

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Low Flow Sampling

TEROLETA DAME 10010-111-1524 to-01 TO DECT TRUMBER WELL DIAMETER LIEPTH TO WATER **PURGING DATA** TURING DIAMETER UMP FOUIPMENT MODEL A STRIAL RE (inches) son bekowi ALLONS WELL VOLUME PURGE: TWELL VOLUME: (TOYAL WELL BEPTI) - STATIC BEPTILLO WATER) X WELL CAPACITY WELL CAPACITY (Galants Per Foot) 075 = 002, 17 = 008, 125 = 0.05, 27 = 0.10, 37 = 0.31, W = 0.05, 57 = 1.02, 67 = 1.57, 127 = 5.88 WELL SCREEN INTERVAL INITIAL PUMP OR TUDING DEPTH IN PURPLY OR TUDING I GALLON = 3 785 LITERS TOTAL VOLUME PURGED WELL SCREEN INTERVAL DEPTH (Imil) WELL (feel) PURGING ENDED AT GALLONS WELL (feel) 14.06 LITERS DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (feet) FLOW RATE TIME INTERVAL Water Level Stable VOLUME PURGED DURING INTERVAL (mL) PUMP SETTINGS DEPTH TO WATER (levi) (Yas or No) START (min) (mL/min) ENU DISSOLVED COLOR RATE WATER (NTU) DXYGEN CONDUCTIVITY ('C) (mV) (describe) (describe) (mUmin) (mg/L) (leet) (p5/cm) (100-500 INL 1+1-0.37 (A- 10%) (** 10th) 147-391 Nº 10my 400 460 5.75 54 14:26 0 8.13 16.06 20 7 :31 5 6.74 5.85 14,91 1860 :36 10 5.85 14,65 270 180 55 0 5:56 15 5.81 14.57 178 69 20 5.77 74 34 177 35 4.87 77 76 0 5 81 14.79 * EPA slobilization parameters from EPA/S40/S 95/504 April 1996 SAMPLING DATA SAMPLED BY (PRINT) I AFFILIATION SAMPLER(S) SIGNATURES SAMPLING EMPERAT : 55 THAP OR HUBING DEPTHEN WELL SAMPLE TRANS LEGY/RATE (ML per monote) FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #5 FIFE DEFILTERED Y FIELD DECONTABINATION Y N DUPLICATE Filmana Egyppenent Lynn MATERIAL CODES AG = Amher Gloss - GG / Cwar Glass OK Payeringania PP : Payeropyerin S : Standa T : Jahin O : Corel (Specify) WELL CONDITION CHECKLIST (circle appropriate territs), basis out if his applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Bloken / None Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb? Y / N PVC Riser Good / Damaged / None Evendence of Ponding Around Well? Y / N Concrete Collar: Good / Cracked / Leaking / Nurse REMARKS: بمر

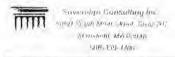


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MONITORING WELL SAMPLING LOG Low Liew Sampling

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POJECT NAMBOL	9			WELL DIAME	TEIX	THEFTH TO WALL	ER	DESTRUCTO	POTTON	(papers)	NG
-				Guillesd		PURGING	DATA	hiser	_	History	
TURING DIAMFTER	9	Tunner (see bil	ENATE THE	IL CODE	PORGE PO		DAIN		LUNNE EONE	MEAT MODEL & SERIAL A	1
WELL VOLUME PL	IRGE: 1 WELL	OLUME (INTAL WE	LLDEFTH 5	HATIC DEPTH TO W	ATED) & WELL	CAPACITY		GALLONS	fun	1855
WELL CAPACITY	Gallons Per Footi				Z + 0 16. 3 = 0					LON = 3785 LITERS	TOTAL VOLUME P
WELL SCREEN W DEPTH (feet)	TERVAL		LL (led)		PTH IN FUNAL PUM WELL (feet)		a. 0. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	SING INITIATED AT		GING ENDED AT	GALLONS:
			- 6	591			110	5.14	- 15	5:04	LITERS
WATER LE	EVEL STABL	ZATION	DEP	TH TO WATER	WITH PUMP			-10			
TIME INTERVA	L FLOW RV (mL/min				PUMP SETTING	38	e ·	DEPTH TO	WATER (feet) END	(Yes or No)	INTERVAL (
										-	
TIME	FLOW RATE (InL/min)	DEPTH I WATER (Icel)	3	(MTU)	DISSOLVED OXYGEN (mg/L)	pН	(°C)	SPECIFIC CONOUCTIVIT (US/cm)	V (mV)	(describe)	(dascribe)
	100 500 mL/min;*	141. 007)*	(46-10%)*	(9) 10%)*	Inc 0.10	(4/- 3%)*	144. 786.	(-// 10mV)		
0	400	-	E		3,58	6.17	14.77		73	tern	
2			E		661	6000	14.6		39	tan	
10			E		1.67	6,13	14.57		32	tan	
15	replayed	bin the	· E	164	1.65	603	14.10		198	tan	
20			2	44.3	1.72	5.94	14.0-		35	Janletter	
25				37.1	11.75	1.19	13.45		135	funda long	
Ba				25.9	1.73	6.18	13.89	8.10	131	feer le lee-	
			4								
	-,	7	-			1 8			-		
	ph	200	-		9.30				1		
			-			1	+		1		
* EPA stribifization	parameters from I	PA/MINS-9	5/501 Apri	1996			1				
SAMPLEO DY (PR	ide S		- 11			SAMPLIN	G DATA		le.		In
					MPLER(S) SIGNATUR					15:57	SAMPLING ENDED
PLIME OR TURNS (leon	or annual well	2000	TE PUBLIC	Ten				Hadi - FERTINASIT	MODELL & 2010	nt ns	
LIETO DECONTA	MINATION Y	N			CO-FILTERED Y ration Equipment Type		taize	ws		DUPLICATE	4 4
MATERIAL CODES	AG : Amini	Class CG	7 Clear Glas		adelle bostinistico		-		10000		
	No. of Person	116			CONDITION C					Event to the contract of	T. Morros ariso
Type Flush	MOUNT / Stant	PIDE	G	eneral Cond	ition: Good / No	eeds Repair	Well Car	is Good / Bro	Kell / None	LOCK GOOD	Broken / No



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Soverelya Consulting Inc.,
*Commission VS), Name II III.
*Todyoka MA Ottora
*ATT SaturaSul

Low Flow Sampling

KOJET, 4 DAZN			PROPERTION	600.83				(A)	9/10	10-05A
ола, такмен-			WELL DIAMETER	3	DEITH TO WATER	core re-				
					PURGING D	ATA				
MING DIAMETER		DING MATERI Se (mig.y)	M CODE	PURGE PUN	PTYPE			DOWN ECONO	MENT MODEL & SERIAL &	
			ELLDERTH - STA	TIC DEPTH TO WA	TERL X WELL C	APAGITY		CALLONS	Line	RS
	ions Perfool) 0.75		04. 126 = 0.06,				1.47, 12' = 5.88		LON = 2785 LITERS	TOTAL VOLUME FURGED
ELL SCREEN INTE	EVAL	WELL (Inel)	P ON THRING DEPT	HIN PINAL PUMP WELL (look)	OR TUBING DEPT			PURC	ING ENDED AT	GALLONS
			69	2.570.0			6'.10		1	Lifens
	EL STABLIZATI	ON DE	PTH TO WATER W (1)							
(min)	FLOW RATE (rol/min)			PUMP SETTING	S		DEPTH TO W	ATER (fael) END	(Yes or No)	VOLUME PURGED DURIN
									-	
TIME	FLOW DE	PTH TO	TURBIDITY	DISSOLVED	pH	FEMI2	SPECIFIC	ORP	COLOR	ODDR
	RATE W	ATER	(NTU)	DXYGEN	pa-	(.C)	CONDUCTIVITY	(mV)	(describe)	(riescribe)
		(feet)	(17-10%)*	(mg/L)	Tev any	(4/- 1/4)	(1/5/em) (+/- 19}*	(40 10mV)*		, m
							1 3 2			
*	Vandle	to g	et Joint	in to pr	while h	00	consistent	1/4 -	nereted to	hand
200	am,	0 6	cultert	samp	k		1 4 4 4	/	1	77723
								-		
				112		11.5-				
						1735				
								1		
11			9.00	Die St.	*4.5	12.00				
2 1	C	- 1			725. 1					- 15.
				-		-				
PA stabilization pa	amesors from EPA/S4	O/S-95/504 Apr	ii 1996				1	-	4	1
MPLED BY (PRIN	Treitumon.		le a com	ER(S) SIGNATURE	SAMPLING	DATA		teni	PLING INITIATED AT	SAMPLING ENDED AT
Vallett Bi ferris	NOB		SAMP	EK(S) SIGNATORS	.5				1715	BANDING ENDED AT
TAIL LESS THREE SE		SORRELLE DESCRIP	12053031, pm, pc	9 - S(CAD))	FIELD PARAMEL	Dickston sa	BING EQUILIBRIUM AND ENGLAND			1
ed)										
ELD DECONTANIA	ATION 5' N			Енгенто у ин Егриминен Тури	N FILTER	ise _)	μij		DUM ICATE	Ý W
JERIAL CODES	AB = Aniner Class	- CG + Caear Gra			nig 5 : Securi	I = Iellyi-	a - book tokk the	_		
			WELL CO	ONDITION CHE	CKLIST (gride	appropriate	pen(s), cross on divil	applicablej		
ypc Flush Mo	unt / Stand Pipe		ieneral Condino	n Good / Nee	eds Repair	Well Cap	5 Good / Broke	en / None	Lock Good	Broken / None
							CRiser Cool	/ Damage	d / None	
	onding Around W	elli7 Y /	N Conc	rete Collar: O	god / Cracke	ed / Lea	iking / None			
REMARKS:										



304-70 (20)

MONITORING WELL SAMPLING LOG Low Llow Sampling

Soveringer Constituting Inc. Lumber Gune Very orner with THRUSHS MAD THAT

£1.1-Sas-m)\$n

PROJECT - LOSSE more programme 10-05,4 DCPTH (lool) TO BE C.T. HORIOTOR in/heAf Hooli (permy) **PURGING DATA** PUMP FOURWENT MODEL & SEPIM IS TUBING DIAMETER TURN'S MATERIAL CODE URGE PUMP TYPE MILLOHS WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Callors Per Fuol) 0 /5 - 0 02, 1' - 0 04, 1 77 - 0 05, 2' - 0 16, 1 7 - 0 05, 5' - 1 02, 6' - 1 47, 12' - 5 60 T GALLON = 1785 LITERS TOTAL VOLUME PURGED INITIAL PUMP OR TUBING DEPTH IN PINAL PUMP OR TUBING DEPTH IN WELL SCREEN INTERVAL PURGING INITIATED AT ALLONS URGING ENDED AT DEPTH (leet) WELL (leal) WELL (feet) 18:00 LITERS DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (leat) TIME INTERVAL FLOW RATE PUMP SETTINGS DEPTH TO WATER (feel) Water Level Stable VOLUME PURGED DURING (Yes or No) INTERVAL (mL) (min) (mL/min) FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR ODOR RATE WATER (NTU) DXYGEN (-C) CONDUCTIVITY (mV) (describe) (adraesb) (mUmin) (100 500 m),im (leat) (mg/L) (us/cm) 107- 10%) [0]. 10%] PAR 0.19 (3-5 minutes) 14/- 350 [4]. 3%[19% IUNNY EPA stabilization parameters from EPA/540/5-95/504 April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION SAMPLER(S) SIGNATURES SAMPLING INITIATED AT SAMPLING ENDED AT PUMP OR TUUING DEPTH IN WELL SAMPLE PUMP FLOW RATE (list per inimite) FID D PARAMETER MONITORING FOWEMENT MODEL & SERIAL VS FIELD FILTERED Y FIELD DECONTAMINATION Y N CONTRACE 36 11 Гивания Енгерпья от Турс AB A Ampiri Class - DR - Class Office MATERIAL CODES PE - Pagettylene PP - Pingasayyana 5 - Salemin 1 - John O - Pigan Smedya WELL CONDITION CHECKLIST (circle appropriate item(s), cross out if yet applicable) Type Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Braken / None Evidence of Rain Water Between Sieel & PVC? Y / N Is Well Plumb? Y / N PVC Riser Good / Damaged / None Evendence of Panding Around Welli? Y / N Concrete Critian Good / Cracked / Leaking REMARKS: No structury s, s, I feet se clogged screen Concrete Collar: Good / Cracked / Leaking / None



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Saveringa Connuting Inc.
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SATA ALL FIRMS) MOJECT LEGG					6/9		10.05A	
COTEC: LAUMBER			WELL DIAMET	FR:	DEPTH TO SVATE.		(feet)	PO READING (DIMA)			
BING DIAMETER		TUSING MATE	HAL CODE	PURGE PUM	PURGING I	DATA		PUMP EGUIPAF	NE MODEL & SERIAL	Uz.	
2102)		(ace trains)	- Small	J. J. H. S. C. T. H.				CALLONS.			
				WINC DELATE IN MY	THE THEOLY					TERS	
ELL SCREEN INTE		INITIAL PUI	AP OH TURING DE	2' = 01G 3' = 01	OR TUBING DEPT	HIN PURC	NG INITIATED AT:		S ENDED AT	GALLONS	
PTH (loci):		WELL (leet)	901-	WELL (lest)		19	107	- 1		UTERS	
WATER LE	EL STABLI		PTH TO WATER	WITH PUMP						1	
IME INTERVAL	FLOWRA		91)	PUMP SETTING:	S .		DEPTH TO W		Water Level Stable		
(min)	(mUmin	0					START	END	(Yes or No)	INTERVAL (mL)	
					_		1				
TIME	FLOW	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	рН	TEMP	SPECIFIC	ORP (niV)	COLOR (describe)	ОООБ	
	(mL/min)	(foet)		(mg/L)	- M. 9.00	(,c)	(µ5/em)	A	(adamine)	(Describa)	
G mérulas)* (10	1-500 mL/min)*	(*/- 0.1).	(*6-10%)*	(1/2 (0%))	10.015	(+/+ 3×)*	34/- 314)*	(*/- 10mV)*			
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PA stabilization pa	rameters from E	PA/549/S-95/504 An	ni 1996		SAMPLING	DATA					
MPLED BY (PRIK	T) / AFFILIATIO	N	SAM	PLERIS) SIGNATURO		Print.		SAMPL	NC INTIATED AT	SAMPLING ENDED AT	
	UTD							1	9:20		
MP OR TOBALS I	DEPTH IN WELL	SAMPLE PUM	FLOW HATE (mL)	ast wouldet	FIELD PARAMET	EH MONITOR	ING EQUIPMENT MC	DEL & SERIAL #	5		
	No selection of	2.	(OE)	D-FILTERED Y	N FRIENS	120 pm			and the same		
FD DECONTAM				tors Equipment Type					DUPLICATE	iv W	
TERNAL COURS	AQ = Anect	Coss Ec a Clical Oc		TONOUTION CHE				andirobic :			
pe Flush M	buni / Sland	Pipe		on Good / Nee			Good / Brake		Lock Good	/ Broken / None	
		veen Steel & Pt			umb? Y/N		Riser: Good			- DIGNET I NOTICE	
		nd Well? Y		crete Collar: C					135300		
MARKS				2:00:5				ulas	1.00		
	San	noted ((L)	1:00:2	in bis	win	s vec	W. 9 2	me		
	S 18.83							to s	· I tentium		



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MONITORING WELL SAMPLING LOG Law Llaw Sampling

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ROTAL NAME				manctor	AVETA				MATE (O)	9/10	70-05A
OVECT HOM	NEK.			WELL INSIDE		DEPTH TO WATER	DIGITION IMPRICADING				
	-			Therrica)		PURGING D	DATA	(feet)		Internal	
IDING DIAME!	TER		TUDING MAY	ERIAL CODE	PURGE PINA	LANC			DONE EQUIPM	ENT WINDEL & SERVAL S	6
	PURGE: IV	VELL VOL		LWELL DEPTH - ST	TATIC DEPTH TO WAT	ER) x WELL C	AFAUTY		GALLONS	Jur	rrs
ELL CAPACIT	Y (Cidlans Per		75 = 0 07: Y	= 0.04. 1 25' - 0.06,	2 = 0 1G. T = 0.37	4"=065, 5"=	102 6-14		1 GALL	N = 3 MSLITERS	TOTAL VOLUME PURGE
PTH (loe)	INTERVAL		WELL (In	OMP OR THBING DE	WELL (feet):	ON TUBING DEPT	HIN PLACE	7 1.30	PURGO	IG ENDED AT	GALLONS
				99			110	1 .50			LITERS
WATER	LEVEL ST	ABLIZA		DEPTH TO WATER:	WITH PLIMP						
TIME INTEM		ME RATE			PUMP SETTINGS	1		DEPTH TO W	ATER (1001) END	Water Level Stable (Yes of No)	VOLUME PURGED DUR INTERVAL (INL)
				1							
TIME	FLOW		WATER	TURRIDITY (NTU)	DISSOLVED	pH	(°C)	SPECIFIC	(mV)	COLOR (describe)	ODOR (describe)
10.000	(mL/min		(fau).	(*/-)0%r	(mg/L)	[47 0 1)*	1-7- 351*	(1/5/cm).	DV- TOWNS	4.500.00	
3-S inipilear	(See See Inc.)		177-431-	The Swall	15. 18.0	144 84	Tax sea	1	Tr. was		
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EPA stabilizati	on parameters	Irom EPA	V54WS-95/504	April 1996	<u> </u>			1	1		1
0	3.150	uster.		- 1	1000	SAMPLING	DATA				
AMPLED BY	PRINT) / AFF	NOITALL		SAM	PLER(S) SIGNATURE	S			SAMP	P 4:0	SAMPLING ENDED AT
una co trib	WELL EDITOR	>	Is action to the	BMP FLOOV HACE INC.		Te corresponding t	Liv Committee	OKS EGGENENT NO		1 4 4	
eatl	- Agus and Test of	. 151-00		The state of the s	A-1 manage	Title (Albanic)		and and making			
I I II DECON	TAMMATION			Filiri.	DERFERED Y	N FILTERS	JZE			DOPERATE) - tq
					эн Гимпирард пон					COVER SALES	
ATERIAL CODE	en Ac-	Amae Cilo	ss 25 Cles		CONDITION CHE				aris dic. al des		
vne: Flos	sh Mount 7	Stand P	ipe		ion Good / Nac					Lock Good	/ Broken / None
			A Section Assessment	PVC? Y / N				Riser Good			- management
				/ N Co							
REMARKS							- 1				
				10 rea	miss						

Monitoring Well Sample Log

Shellity i to	oject Nam	e:							Consulting Inc. re Way Suite #307
Project Lo	cation:			PROJECT #:			146.55	Holoyok	e, MA 01040
				WELL ID:	10-03	A		413-	540-0650
Purge D	ata				the contraction	5A 109		Sample	Data
Date:						1 6	Container	Quantity	Prescrvative
Pump Ra Fotal tin Volume I Purge De Device T Appearan Well Yiel Commen	ate: ne purge Purged:_ evice: D 'ype: Bl: nce: ld: High nts:	d:(r Pedicated / adder / Pe	(ltr) Nondedicate eristaltic / Su te / Low /	Depth Sampled Weath sbmersible Dry	er:				
Re	fusu at ID#	10	110.5	Field Pa	rameter I	Data			
nter Level	Time	Flow Rate (ml/min) [Turbidity (ntu)	Dissolved Oxygen (mg/L)	pH	Tem (deg		fic Conductivity (uS/cm)	ORP(mV)
<	ame	led	(2)						
	1			1					
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1116		100	90		57 Kg	, - , n	A = 1	281	
er eg		2.0							
W SA									
St. ogs.									
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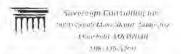


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hite et enfet (aussaling the Light Loppes Why Sufe it the historie blackers 40 Collettifs.

Low Flow Sampling

PURGING DATA PROJECT FUNDED WELL SPANETER SPECIAL SPANETER SPANE	
IDING DIAMETER TURNS CONFERMATE CODE PLAND TYPE PUARE COLUMN FOR A SERVAL WE	
(sre hardw)	
ELL VOLUME PURGE: 1 WELL VOLUME: (107A) WELL DEPTH - STATIC DEPTH TO WATER), N. WELL CAPACITY	RS
ELL CAPACITY (Gallums Per Foot) 0.75 = 0.02, 11 = 0.04, 1.25 = 0.06, 21 = 0.07, 41 = 0.65, 51 = 1.02, 61 = 1.47, 121 = 5.88 1 GALLON = 3.705 LITERS	TOTAL VOLUME PURGE
PURGING ENDED AT WELL (loci) PURGING DEPTH WI FINAL PUMP OR TUBING DEPTH WI PURGING INITIATED AT PURGING ENDED AT WELL (loci) 2 4 6 0 0	GALLONS
	LUTERS
WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP.	
TIME INTERVAL FLOW RATE PUMP SETTINGS • DEPTH TO WATER (feel) Water Lovel Stable (min) (mt/min) START END (Yes or No)	VOLUME PURGED DUR INTERVAL (ML)
(min) (min) (min)	as a section from
TIME FLOW DEPTH TO TURBIOITY DISSOLVED DH TEMP SPECIFIC DRP COLOR	DOOR
RATE WATER (NTU) DAYGEN " (*C) CONDUCTIVITY (mV) (describe)	(riescribe)
+9 Municals, (100 (200 M/Links), (+0 6 3), fine (201, (115 122), (115 122), (117 123), (
615 300 5.77 6.28 6.72 10.30 748 1264	
520 377 693 614 1012 797 5256	
25 6320 703 607 1001 799 795	
39 100.40 1-3 651 100 111 113	
	-
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PA shibilization parameters from EPAISSOIS-95504 April 1996	
SAMPLING DATA MPLIO DV (PRINT) (AFFILIATION SAMPLER(S) SIGNATURES. SAMPLER AT	SAMPLING ENDER AT
4.25	114
IMP OR TIBING DEPTH IN WELL. SAMPLE PUMP FLOW RATE (mt. per minute) FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL Vs.	
at)	
LID DECONTAMBIATION Y N FREDERING THE OWN TRATES OF THE STATE OF THE S	у н
MEHIAL CODES AG = Ainter Glass 1 G r Clini Glass 14F = Physinfolione PP + Poygraphyene 5 + Siscoco 1 + Tallon 0 - Piligr (Span Iy)	
WELL CONDITION CHECKLIST (circle appropriate item(s), coops not in initial application	
ype: Flush Mount / Stand Pipe General Condition. Good / Needs Repair Well Caps: Good / Broken / None Lock: Good /	/ Broken / None
vidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser Good / Damaged / None	A STATE OF THE STA
rendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cricked / Leaking / Nane	
MARKS	



Consultant



Loss Hess Scripping

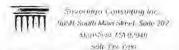
		We'th DIAME F	ÚR.	DEFTH TO WATE	ie .	Inches is	OCCUPANT OF THE PARTY OF THE PA	1200	3/11×10 63		
			(melica) (first) (feet)					(DIO) FOM PILL READING (PROV)			
	In aras	MATERIAL CODE	PARCE NO	PURGING I	DATA		CHINE CELLION	ENT MODEL & SERIAL V			
	Isea beto.		Lamille Arte	core				Erri Miliona. 2 serving i	36		
E: I WELL VO	LUME (TO	TAL WELL DEPTH - 51	ATIC DEPTITIONA	TERT) X WELL C	APACUY		GALLONS	¢)T	FRS		
		1'=0.04, 1.25'=0.06.						IN +3 TASLITERS	FUTAL VOLUME PURGED		
VAL		L PUMP OR TUBING DE	WELL (feet)	DH TUBING DEPT		GINITIATED AT	PURGIN	IG ENDED AT	GALLONS		
				27	-	640			LITERS.		
EL STABLIZ	ATION		WATER WITH PUMP:								
		- Italian	PUMP SETTINGS DEP					Water Lovel Stable	VOLUME PURGED DURI		
Morning						Jinst	Line	1100011101	MITCHY SE TIME!		
					- 1	7					
									×		
FLOW	DEPTH TO	TURBIDITY	DISSOLVED	рН	TEMP	SPECIFIC	ORP	COLOR	DUUR		
	WATER	(MIN)		11.7	(,c)	CONDUCTIVITY	(mV)	(describe)	(describe)		
Loo mL/mar	(14- 6.21.	tive jagel.	(+) (020)	(40.00)	19/1-1889*	(4/ 3%)*	to met	1	-		
00		456	422	596	1079	1033	566				
		745	271	4.09	10 77	14577	31.4				
		6160	239	10.19	10.57	1495	41.1				
		442		10.24	10.45	1903	110.00				
		1910				1913					
						A CONTRACTOR OF THE PARTY OF TH					
					10 30	Gila					
		2.71	160	16 JULY	10 of 1	177.00	11.				
		+			-				-		
									-		
							-	-	-		
			A A		4	ā 4		0.040	1000		
				ateo.	4	1.00		100			
							-				
uneters from EP	A/540/S-95/6	04 April 1996		L	1			ł	1		
	13.0				DATA						
VAFFILIATION		SAM	PLERIS) SIGNATURE	5			SAMIT	O 2/15	SAMPLINITENDED AT		
OTU IN WELL	To assent	CHIEST THE CHARLES TO DOWN	my (marchit)	TOTAL	LO MOVERTISCO	V. COLUDINATION	VOCE & CERTAL	All Street			
IF IT III PALLE	JANA EL	FORM TEST IS A TEST INC.	tar //missic/	TIELD PROMIS	er monording	CO E-SCOT MICE AT INC	ALL II SENIAL	ns.			
/ Bu / W		FIEL	SENTENED Y	N PRIERS	ilde our			Linetave			
								DOWLKWIL	0 N		
AG = Airmi Gi	651 EG - C						hand order				
int / Cloud /	Dien							Lark Card	1 Beating 1 Nan		
									/ Broken / None		
							Darriaged	7 India			
and moun	o France		and adding C	July Charles	Links	1 130/10					
	FLOW RATE INITIALITY IN THE PHILIPMIN WELL ALIGN Y AG = Airmy GI Water Belw Water Belw Water Belw	WATER (Ited) (IV 9.3) WATER (ITED) (IV 9.3) WATER (ITED) (IV 9.3)	FLOW RATE (mUnio) FLOW DEPTH TO TURBIDITY (NTU) MATE WATER (NTU) MO INTERIOR (Legil) MO I	FLOW RATE (mU/min) FLOW DEPTH TO TURBIDITY DISSOLVED OXYGEN (mg/L) RATE (MTU) OXYGEN (mg/L) (Moon-turbinar (1/4 97) (4/4 12 2 2 1 3 1 4 4 1 2 2 4 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	FLOW RATE (mU/min) FLOW RATE (mU/min) FLOW DEPTHTO TURBIDITY DISSOLVED PH OXYGEN (myc) WATER (NTU) OXYGEN (myc) (myc) (myc) (1/ 105) (FLOW RATE	PLOW RATE PUMP SETTINGS	DEPTH TO WATER (Inst) FLOW PATE PLOW DEPTH TO WATER (past) PHAMP SETTINGS DEPTH TO WATER (past) Water Lowed Stable PHAMP SETTINGS DEPTH TO WATER (past) Water Lowed Stable PHAMP SETTINGS DEPTH TO WATER (past) Water Lowed Stable PHAMP SETTINGS DEPTH TO WATER (past) PHAMP SETTINGS PHAMP SETTINGS DEPTH TO WATER (past) PHAMP SETTINGS PHAMP SETTI			



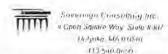
Servetings Committing Inc.
1. Space open Stry Son, and
1. blypur 614 filled 413-2011/07/49

Local low Sampling

CTREATIVE			Prof (A) a	10 E T 10 10 10 10 10 10 10 10 10 10 10 10 10			5	COLICIACIO SITTILI				
OJECT MUAN	EH		MARKET PROMISE P (Market)	Fil	DEPTH TO WATE		DEPTH (6)	MILLO	PHO NEAD (MICH)	16.		
MNG FRAME T	ER	Truewig Mil	TERMI COOL	France Pun	PURGING D	DATA		PUMP EQUIPM	FNT MODEL & SERIAL S	5		
fuesq		(see helow)		4000				CHIMDE	100	ene		
	50000 11000 1		IL WELL DEPTH 5/1					GALLONS		ERS.		
LL SCREEN			- 0 04. 175 = 0 06. PUMP OR TUBING DE		OR TUBING DEPT		G INITIATED AT		IN - 3 785 UTERS IG ENDED AT	TOTAL VOLUME PURGET GALLONS		
PTH (tret)	Evel orton		DEPTH TO WATER		149		930			LITERS		
ME INTERV	AL FLOW FU		(foet)	PUMP SETTING	0		DEPTH TO W	ATED House	Water Lovel Stable	VOLUME PURGED DURI		
(min)	(int/inii			PUMP SETTINGS - DEPTH TO V				END	(Yos or No)	INTERVAL (ml.)		
									V			
				-								
TIME	FLOW RATE (mL/min)	DEPTH TO WATER (foot) (+#- 0 3)*	TURBIDITY (NTU)	DISSOLVED OXYGEN (mg/L)	194 O'AP	TEMP ("C)	SPECIFIC CONDUCTIVITY (p5/cm)	(mV)	COLOR: (describe)	ODÓR (doscribe)		
35	300	(40.03)	333	195	6 26	10.97	2396	275				
40	100		412.5	219	629	10.65	2574	33.0				
215			749	2.00	431	10.611	2565	17.0				
150	7000		798	191	6.32	10.41	2563	124				
555			628	197	Ce 34	10 35	2560	130				
2775			4001	200	635	10 36	2562	115				
- 1	-						5===11	4				
			· ·				-	1				
- 11												
PA stabilization	in parameters from E	PA/540/S-95/504	April 1996		SAMPLING	DATA		-				
MPLED BY (F	PRINTY AFFILIATIO	N	SAM	IPLER(S) SIGNATUR				1	COCK	SAMPLING ENDED AT		
el) IWN DIE LORIE	NG DIEPTH IN WELT	SAMPLE P	DMP FLOW HATE IML	Det um(n)/r)	FIEI D PARAMET	ER MONITORIN	IG EQUIPMENT MO	DUEL & SERIAL	us.			
FLD DECONT	AMINATION Y	N Object CG - Cina	Fete	DIFILTERED Y allon Equipment Type ours RP = Polyprom		Cillana Di	Duario e L		DUPLICATE	×		
COURS		- V2G-110MH		CONDITION CH	-			application)				
	i Mount / Stand Rain Water Bet			ion: Good / Ne	eds Repair	Well Caps:	Good / Broke	en / None		/ Broken / None		
	of Ponding Arou			ncrete Collar (3.0	7 - 2			
EMARKS		1.00					-					



Law Llow Sampling



DATA FOR OWN PROJECT COCKINGS COLLY JOSE 5HM71103 ROJECT NUMBER DEPTH TO BOTTOM PID READING WELL CHAMETER CEPTH TO WATER (foot) (4-10-5) **PURGING DATA** TUMP EQUIPMENT MODEL & SERIAL NO HAMETER TURIUS MATERIAL CODE mches) (see bulow) GALLIONS WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIG DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (GONOMO POT FOOT) 075 = 002: 1" = 0.04. 1.25" = 0.06. 2" = 0.16. 3" = 0.17. 4" = 0.65. 5" = 1.02. 6" = 1.47: 12" = 5.88.

WELL SCREEN INTERVAL INTO THE PUMP OR TUBING DEPTH IN FUND OR TUBING DEPTH IN PURGING INITIATED AT I GALLON = 3.785 LITERS TOTAL VOLUME PURGED FURGING ENDED AT GALLONS DEPTH (feel) WELL (leel) LITERS 1010 DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (feat) VOLUME PURGED DURING INTERVAL (ml.) Water Level Stable TIME INTERVAL FLOW RATE PUMP SETTINGS DEPTH TO WATER (leal) . (min) (mL/min) START ENU LYOS OF NO! FLOW DEPTH TO TURBIDITY DISSOLVED SPECIFIC COLOR ODOR CONOLICTIVITY RATE WATER INTU OXYGEN (ww) L'C1 (describe) (describe) (niLimin) (feat) (mg/L) (us/cm) (100-500 mt/mi (re 10%). 100 10%) ter usy UNFOF 3015 -46.5 500 1112 453 00108 39 35 1020 0.44 3252 -155 1085 11.11 0.92 1030 6.49 1087 3220 27.4 :33 035 range 51 3207 085 1074 10.69 3212 11/0.7 086 455 1040 rokal * EPA stabilization parameters from EPA/540/5-95/504 April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION: SAMPLER(S) SIGNATURES SAMPI INGINITIATED AT SAMPLING ENDED AT 6-16 FUMP OR TUDING DEPTH IN WELL SAMPLE PUMP FLOW RATE (mt. per minute) FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL HS IFO FOLIERED FILTER SIZE ______ 100 FIELD DECONTAMINATION Y DUPLICATE Falkation Edmonited From BF = P(Ayy) bylenicMATERIAL CLIDES AG = Ampel Glass CG = Claur Glass PD Polypringles 5 - Source T - Tallon O + Other Greeky WELL CONDITION CHECKLIST (dicle appropriate item(s), cross out if not noplicable) Type: Flush Mount / Stand Pige General Condition: Good / Needs Repair Well Caps: Good / Broken / None l nek Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb? V / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Well? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS



someone Lansacing for. TIME A DING SHARE PERF SAME WAIT HARDEN MADERING

Low Llow Sangang 300 x 17: 1,900 (14.54)(0.65) PROJECTUANE ANOTECTION STRONG SHM ROJECT HUMBER WELL DIMMETER DEPTICIO BOT DENTILLOWATER (tren) (paper) **PURGING DATA** TUMP EQUIPMENT MODEL & SERIAL AS TUBING DIAMETER TUBING MATERIAL CODE PURCE PUMP see brlow) GALLONS LITERS WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Fool): 9.75 = 0.02: 1° = 0.04: 1.25° = 0.06: 2' = 0.16: 3' = 0.07: 4' = 0.66: 5' = 1.02: 6' = 1.47: 1.2' = 5.88

WELL SCREEN INTERVAL

DEPTH (Inel): WELL (Inel): PURGING INITIATED AT WELL (Inel): WELL (INEL): WEL I GALLON = 1785 LITERS TOTAL VOLLIME PURGED PURGING ENDED AT CALLONS: 69 10.50 LITERS WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP (leel) TIME INTERVAL FLOW RATE Water Lavel Stable VOLUME PURGED DURING DEPTH TO WATER (feel) PUMP SETTINGS (Yes or No) INTERVAL (mL) START (min) (ml./min) TIME FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC URP COLOR ODOR RATE WATER (NTU) OXYGEN (°C) CONDUCTIVITY (mV) (describe) (doscribe) (mWmin) (100-500 mUm (mg/L) (leni) 117-381 (+/- 10mV)* (4/ 10%) (+t- 0.1)* 14/ 03/ (1/- 10%) CULUF 500 203 11.23 3382 1100 10 OUT ST 6.601 3491 -69.7 1105 6.54 6.64 11.06 OUT OU 758 053 11.03 1110 6.67 341462 FEMIL 1115 051 10 82 3475 794 6 70 3470 1120 65 9 052 10 79 22 780 EPA stabilization parameters from EPA/540/S-95/504 April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION SAMPLER(S) SIGNATURES SAMPLING INITIATED AT SAMPLING ENDED AT 11ex 0 SAMPLE PUMP FLOW RATE (ml. per minute) FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #5 PUMP OR TUBING DEPTH IN WELL PUFLO FILTERED Y FILTER SIZE OF DUPLICATE FIELD DECONTAMINATION Y H 4 N Filtration Ефирипент Турс PF - Polyethylene PP - Paypropylene 5 - Skopin T - Fellon Q - Filler (Specify) An = Amber Clins: CO = Clear Gloss WELL CONDITION CHECKLIST (iditate appropriate literal(s), cross out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps Good / Broken / None Good / Broken / Nane Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser Good / Damaged / None Evendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None

REMARKS

WELL ID: SHM-10-06

SITE: Deven, fort

PROJECT NO .: ACOU

PUMP TYPE & MODEL: Water Lyde LIII

START TEAM MEMBER PJV T CMH

6/24/ DATE:

TIME: 09/5

WEATHER: 85 Lang 1 Kmd

1. INITIAL READINGS

1430 START TIME:

Stickyp 22 80 A

	PID							WELL
WELL	WELL	DEPTH TO	DEPTH TO	DEPTH TO	PRODUCT	DEPTH TO	PUMP	VOLUME
DIAMETER (INCHES)	HEAD (PPM)	WATER (FEET)	BOTTOM (FEET)	PRODUCT (FEET)	THICKNESS (FEET)	SCREEN (FEET)	DEPTH (FEET)	(Gallons) (Millileters)
1.5	NA	1989	76.60	NA	NA	70	75 shirt	52

2. DEVELOPMENT READINGS

TIME (MINUTES)	RATE (gal/min) (ml/min)	DEPTH TO WATER (FEET)	ORP (mV)	D.O. (mg/L)	рН (S.U.)	TEMP (degrees C)	COND.	Turb (NTU)	Volume (gal) (ml)	Appearanc (Silty) (Clear)
1.5										Silty
V-X	3V 70-								3.5	1
3,2	0.35								1	
2 25								-	10 = 5	
.58									17.5	
6a			-929	C-70	5 160	11-20	75%	Er 2	195	
03			-1349	196	6413	1129	125	OR	245	
80			1333	1.74	650	11.27	711	OR	27.5	
83			-140.4	159	652	11-37	696	OR	280	
88	1		745.4	084	6.53	11,42	688	OR	290	100
90	1		-148.4	094	6.55	11-37	680	OR	31.5	V
			*							
-		-								
	-		-							

3. POST-DEVELOPMENT

> 1600 END TIME:

TIME	(gallons)	WATER	BOTTOM
(MINUTES)	(millilietrs)	(FEET)	(FEET)
TOTAL	TOTAL VOL	DEPTH TO	DEPTH TO

ADDITIONAL NOTES: E-2/OR= WterPRange

WELL ID: SHAM TO ULA

SITE FUNDOVER'S SHL

PROJECT NO .: A COUL

PUMP TYPE & MODEL: Waterra Hydro Litt I

START TEAM MEMBER: PJVTGMH

DATE: 6/30/10

TIME: 0930

WEATHER: 75" Emy

1. INITIAL READINGS

START TIME: 0938

Stakep = 25"

WELL DIAMETER (INCHES)	PID WELL HEAD (PPM)	DEPTH TO WATER (FEET)	DEPTH TO BOTTOM (FEET)		PRODUCT THICKNESS (FEET)		PUMP DEPTH (FEET)	WELL VOLUME ((Gallons) (Millileters)
15	NA	35.27	8730	NA	NA	77	282 6 stor	48

2. DEVELOPMENT READINGS

TIME (MINUTES)	(gal/min) (ml/min)	DEPTH TO WATER (FEET)	ORP (mV)	D.O. (mg/L)	pH (S.U.)	TEMP (degrees C)	COND.	Turb (NTU)	Volume (gal) (ml)	Appearance (Silty) (Clear)
10	0.35								3.5	Silty
16	0.58								7.0	1 20
27									10.5	
28									140	
33									175	
38	0.7								21.0	Claudy
43									245	Clucky
48									320	Silly
53								460	31.5	Silty
58								492 397	350	Clarky
63			-				-	377	12.0	Cluedy
73	- No. 1011		-3/4	268	634	10.68	342	802	12.0	
80			-386	0.12	4.37	10.62	305	854	45.5	
38			-43.3	0.49	4.37	10.67	280	795	190	
92			-44/	1,43	6.39	10.67	285	745	50.0	
94			-437	240	637	1063	280	653	51.0	

3. POST-DEVELOPMENT

END TIME: 1/15

TOTAL TOTAL VOL DEPTH TO DEPTH TO TIME ((gallons)) WATER BOTTOM (MINUTES) (millilietrs) (FEET) (FEET)

ADDITIONAL NOTES: * Lowered Rimp Inlet -> Put unto Flux (ell of YSI

WELL ID: 344-10-01

SITE: Fort Devens 5/12

PROJECT NO .: ACOU!

PUMP TYPE & MODEL Wateria Hydro L FA I

START TEAM MEMBER: PSV r CMH

DATE 6/30/10

TIME: 1350

WEATHER: 750 Smay

1. INITIAL READINGS

START TIME: 1352

WELL DIAMETER	PID WELL HEAD (PPM)	DEPTH TO WATER (FEET)	DEPTH TO BOTTOM (FEET)		PRODUCT THICKNESS (FEET)		PUMP DEPTH (FEET)	WELL VOLUME (Gallons) (Millileters)
15	NA	4.57	677	NA	NA	60	65 Start	3.9

Stillup 3.51

2. DEVELOPMENT READINGS

TIME (MINUTES)	RATE (gal/min) (ml/min)	DEPTH TO WATER (FEET)	ORP (mV)	D.O. (mg/L)	pH (S.U.)	TEMP (degrees C)	COND.	Turb (NTU)	Volume (gal) (ml)	Appearance (Silty) (Clear)
5	07								3,5	Brain
8	12								7.0	Clarky
12	088								10.5	C Leave
16									140	5/1/
20									17.5	They
24									21.0	Clouds
27	1.2								24.5	
30			20 -				~ 3 M	20	280	D- 2
40			338	0.70	592	1122	315	OR	305	RBTint
42	^7		128	0,54	6.09	11.22	315	OR	31.5	
47	0.7		-0.9	0.42	6.19	11.24	3/5	OR	350	
52			-60	0.65	622	1129	315	1016	345	200
58			-8.4	6.72	624	11.23	3/5	732	420	
60			-8.2	6.96	6.24	11.24	3/5	688	43,5	+
					4					

3. POST-DEVELOPMENT

ENDTIME: 1452

TOTAL TIME (TOTAL VOL	WATER	воттом
(MINUTES)	(milliletrs)	(FEET)	TI. 8

ADDITIONAL NOTES: * Lowerd Rimp Inlet -> Connected YS.I OR 2 OUT of Range

WELL IDISHM-10 03

SITE FORT Develop

PROJECT NO .: ACOO!

PUMP TYPE & MODEL: Wateria Hydrolist I

START TEAM MEMBER ? W. CMIL

DATE: 7/1/2010

TIME: 1230

WEATHER: SIMOUL

5% : Ly 21

1. INITIAL READINGS

START TIME: 1305

WELL DIAMETER (INCHES)	PID WELL HEAD (PPM)	DEPTH TO WATER (FEET)	DEPTH TO BOTTOM (FEET)		PRODUCT THICKNESS (FEET)		PUMP DEPTH (FEET)	WELL VOLUME (Gallons) (Millileters)
15	NA	26-71	86 H	WA	NA	60	65 SMRT	3.8

6725

2. DEVELOPMENT READINGS

	TIME (MINUTES)	RATE ((gal/min)) (ml/min)	DEPTH TO WATER (FEET)	ORP (mV)	D.O. (mg/L)	pH (S.U.)	TEMP (degrees C)	COND.	Turb (NTU)	Volume (gal) (ml)	Appearance (Silty) (Clear)
ĺ	7									3.5	Silty
	13	0.58								70	/
*	24						- 1	1		14.0	Cloudy
1	30									175	5.1/4
	34								904	216	Clarely
1	Restar	- after	refilling	Gran	for uf	Gus .		-			
	44								980	280	Clary
3	52								2/6	350	Clace
1	63								476	385	Clarky
ı	74			-281	37.82	6.57	10.33	3.580	UR	420	/
	80			-32.8	36.78	6.57	1037	3584	OR	45.0	
	83			-34:0	47.87	4.57	10.31	3583	OR	46.0	
	86			-349	44.09	6.57	16 33	3581	OR	47.5	
1	90			-345	5276	6.57	10.34	3579	OR	490	

3. POST-DEVELOPMENT

END TIME: 1455

TOTAL	TOTAL VOL	DEPTH TO	DEPTH TO
TIME	(gallons)	WATER	BOTTOM
(MINUTES)	(millilietrs)	(FEET)	(FEET)
90	49.0	24.77	64 30

ADDITIONAL NOTES:

* Lawred Rup Inlet > Connected YSI

OR= Over Romge

WELL ID: SHM 10 10

SITE: Fact Devens

PROJECT NO .: A COUL

PUMP TYPE & MODEL: Winkern Hydro Lift I

START TEAM MEMBER: PJV 1 CMH

DATE: 7/1/10

TIME: 0930

WEATHER: 750 Sanny

1. INITIAL READINGS

START TIME:

0438

WELL DIAMETER (INCHES)	PID WELL HEAD (PPM)	DEPTH TO WATER (FEET)	DEPTH TO BOTTOM (FEET)	CONTRACTOR AND ASSESSMENT	PRODUCT THICKNESS (FEET)	22 TURNEY	PUMP DEPTH (FEET)	WELL VOLUME (Gallons) (Millileters)
1.5	NA	1107	61.05	NA	NA	56	600 Start	4.6

Shelesp - 21

2. DEVELOPMENT READINGS

TIME (MINUTES)	RATE ((gal/min)) (ml/min)	DEPTH TO WATER (FEET)	ORP (mV)	D.O. (mg/L)	Hq (.U.2)	TEMP (degrees C)	SP COND, (uS/cm)	Turb (NTU)	Volume (gal) (ml)	Appearance (Silty) (Clear)
8	0.44	1,5			1/2/3/				3.5	Silty
12	0.88								7.0	Silly
15									105	1
20									1010	
24							4	1	175	Clerit
28									210	Clear
33						-			24.5	Silty
30									280	Dievek
40									315	Clouck
44				14			1	y	350	
48									38.5	
,53							0.5	OR	42.0	3-
58		10 m	-			35-27-		116.3	45.5	Clarky
60			-31-0	2.76	655	11.17	740	OR	46.5	
43			-519	4.46	6.12	11.21	730	OR	480	
66			-46.7	313	616	11.18	726	OR	49.0	
69			-86.2	5.50	6.35	11.12	722	OR	510	
72			-944	2.11	6,40	11.12	716	OR	525	
75			-016.2	1.57	6.42	11.15	711	OR	540	

3. POST-DEVELOPMENT

END TIME: 1055

TOTAL	TOTAL VOL	DEPTH TO	DEPTH TO
TIME	((gallons))	WATER	воттом
(MINUTES)	(millilietrs)	(FEET)	(FEET)
75	540	11.07	6640

ADDITIONAL NOTES: * Lowerd Romp Intet -> Connected YSI OR = OUT OF Rouge

WELL ID: SHM-10-08

SITE: Furt Deven's

PROJECT NO .: ACOUL

PUMP TYPE & MODEL: Waters Hydra LALI

START TEAM MEMBER:

PSV

DATE 7/2/10

TIME: 08/5

WEATHER: 750 Sunny

1. INITIAL READINGS

START TIME: 0825

WELL DIAMETER (INCHES)	PID WELL HEAD (PPM)	DEPTH TO WATER (FEET)	DEPTH TO BOTTOM (FEET)		PRODUCT THICKNESS (FEET)	CONTRACTOR OF THE PARTY OF THE	PUMP DEPTH (FEET)	WELL VOLUME (Gallons) (Millileters)
1.5	NA	9,99	54.35	NA	NA	4/6	53 STAKT	4

Sticky 21

2. DEVELOPMENT READINGS

TIME (MINUTES)	RATE (gal/min) (ml/min)	DEPTH TO WATER (FEET)	ORP (mV)	D.O. (mg/L)	pH (S.U.)	TEMP (degrees C)	COND.	Turb (NTU)	Volume (gal) (ml)	Appearance (Silty) (Clear)
5									3.5	Silty
9	0.78								7.0	Silky
21									17.5	Clarky
25	088							8	2/0	
28								2.17	342	15 11
32						-		687	280	Silty
42	-							908	38.5	Clarky
48		-						469	45-5	Clear
51				-				273	49.0	Citago
56			-19.2	0.86	6.35	10.43	1141	OR	510	Silty
40	FOR	1 1	-36.2	1.45	4.38	10.43	1143	OR	530	,
63	-6		-487	5.90	6.41	10.43	1142	OR	22.0	Clarky
67			-572	1.67	6.41	1042	11.43	UR	570	
70			-63.4	1.19	4.40	10.42	11.43	OR	590	
					1 - 1					
	-		-							-0-

3. POST-DEVELOPMENT

END TIME: 0935

TOTAL	TOTAL VOL	DEPTH TO	DEPTH TO
TIME	(gallons)	WATER	BOTTOM
(MINUTES)	(millilietrs)	(FEET)	(FEET)
70	59.0	9.45	56.2

ADDITIONAL NOTES:

** Leaved Rings Intet

** Connected YSI

OR - Out at Ringe

High Pressure on grapes top - Initial Dru may be high

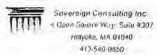


W 11

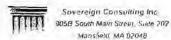
Sovereign Consulting Inc 9058 South Main Street, Suite 262 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG

Low Flow Sampling



OJECT NAM	Fort Deve	ins Still		ons, mA				7711)	SHMO(0A
OJECT NUM	ACOOL		(inches)	TEN	(feet)	35.	S GENTH TO	9.1	PID REA (ppm+)	NA
200		200			PURGING	DATA	0.01	Section .		948
HING DIAME	YU!	(See below)	PE	PURGE PUN	der Pur	m 0		QED	ENT MODEL & SERIAL	oller -1057
	The second second	VOLUME (TOTA	L WELL DEPTH - 5					GALLONS 4.6		TERS
			= 0.04; 1.25' = 0.06					1 GALLO	M = 3765 LITERS	TOTAL VOLUME PURGE
PTH ((m)):		WELL (R	PUMP ON TUBING DE	WELL (feet):			IG INITIATED AT		IG ENDED AT:	GALLONS:
84-			84"	80		08	300	0	850	UTERS 25
14	LEVEL STABL		DEPTH TO WATER	WITH PUMP: PUMP SETTING		1				
(min)	VAL FLOW F			HUMP SETTING	s		DEPTH TO W	ATER (feel) END	Water Level Stable (Yes or No)	VOLUME PURGED DUF INTERVAL (mL)
20 mi	n 25	R-a	a D-8 3	opsil lasft	Rea acc	PSI	35.a8	35.38	Yes	500
				201	3			to the state		
		1						1		
			4-12-22	1 3000000		T			10.51	1
TIME	FLOW	DEPTHTO	TURBIDITY (NTU)	DISSOLVED	ЬH	TEMP (*C)	SPECIFIC	(mV)	COLOR (describe)	ODOR (describé)
3-5 minutes)*	(mUmin) (100-500 mUmin)*	(feet) (+/- 0.3)	(47- 10%);	(mg/L)	(1/4 0.1)	16/- 3XI.	[µS/em) [r/- 3N]*	(e). (Dml/)		2 =
as	25	35.28	20.9	[.68	6.51	19.33	205	-90./	Clear	None
130	25	35.28	14.9	1.77	6.51	1946	206	-90.5	Clear	None
35	25	35.28	11.3	1.78	6.51	19.48	206	-20.9	Clear	None
340	35	-	8.15	1.38		19.59	200	-a1.5	clear	None
		35.28			6.50	19.67	2001	1		
145	92-	35.38	6.44	1.49	6.51	-	209	-992	Clear	NONE
920	25	32.95	5.38	1.47	651	19.74	209	-20 G	clear	None
										-
_										1
					-					
							8			الز
*	1.27	111			×	1				
			1.4			1				
	tion parameters from			***		PER PER PER PER PER PER PER PER PER PER				
	(PRINT) / AFFILIATI			PLER(S) SIGNATURE		DATA	1	SAMFI	ING INITIATED AT	SAMPLING ENDED AT
	FOLEY		102	. 11				1000	Sm	
IMP OR THE	MNGEFFERMAN	SAMPLE PL	Smill mon markers	Des minimes 4	FIELD PARAME	ITA MONITORIN	G FOUPMENT MO			-
35	86.7		v Imin							
ELO DECON	ITAMINATION:		FIEL	DIFILTERED (2) (Irian Equipment Type	N FILTER	50ZE min			DUPLICATE	⑦ N
TERIAL COD	ES AG = Ambe	Glass CG - Clear		lane FF : Polygropy	ane, S Second	T = Tellan D =	Other (Souch)			
			WELL (CONDITION CHE	CKLIST (circle	appropriate terri	(s), cross out if not a	ppricable)		
ype Flus	sh Mount (Stan	d Pipp	General Conditi	nn: Good/ Nee	eds Repair	Well Caps:	Good/ Broke	n / Nane	Lock: Good	/ Broken (None)
			PVC? Y / ND		umb? Y/6		Riser: Good /	Damaged	/ None	_
A CAMP OF TAXABLE PARTY.	of Ponding Arg	und Welli? Y	IN Cor	ocrete Collar: G	ood / Crack	ed / Leakin	g / (None)			
EMARKS										



508-339-1200

MONITORING WELL SAMPLING LOG

Low Flow Sampling

Sovereign Consulting Inc. 4 Open Square Way Swite #307 Holyoke, MA 01040 413-540-0656

PROJECT NAME PROJECT LOCATION Fort Dever's 7/8/10 5HL 10-06 CUECT NUMBER DEPTH TO BOTTOM 8/2 ACOU WA (inches) **PURGING DATA** TUBING MATERIAL CODE PUMP EQUIPMENT MODEL & SERIAL IS Centraler - 1057 Bladler (see below) WELL YOLUME PURGE: 1 WELL YOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Fool) 0.75 = 0.02; 1' = 0.04; 1.25' = 0.06; 2' = 0.16; 3' = 0.37; 4' = 0.65; 5' = 1.02; 6' = 1.47; 12' = 5.88 I GALLON + 3 785 LITERS TOTAL VOLUME PURGED: WELL SCREEN INTERVAL DEPTH (leel): DINITIAL PUMP OR TUBING CEPTH IN FINAL PUMP OR TUBING DEPTH IN PURGING INITIATED AT: PURGING ENDED AT GALLONS: LITERS 0.9 71-81 0715 0835 DEPTH TO WATER WITH PLIMP. WATER LEVEL STABLIZATION FLOW RATE VOLUME PURGED DURING PUMP SETTINGS Water Lovel Stable TIME INTERVAL DEPTH TO WATER (feet) START END (Yes or No) INTERVAL (mL) (min) (mL/min) Rey PS1 -200 20.00 25 50/125 2000 150 20 Yes 2000 30 20.00 750 25 Yes TIME FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR COOR RATE WATER (NTU) OXYGEN CONDUCTIVIT ('C) (mV) (mg/L) (µ5/cm) (mL/min) (feet) (0)- 3941" (+/- Igmy) F4- 0.11 (*/- 10%) (100-500 mL/ (4. 9.37 25 M/M 150 20.00 1,23 21.06 - 88 Clardy None 25 25.3 0.78 744 - 90.7 Nono-20.00 6-61 21.50 Clark 25 0 0.8 6. 61 21.58 2000 .68 752 25 21.63 Nine 17.0 6.61 :05 20.00 754 21.70 Clavo Nine 110 0.73 25 20.00 6.61 Nine 21.74 21-4 25 2000 EPA stabilization parameters from EPA/540/S-95/504. April 1996 PLED BY IPPRINT) APPLIATION M SULVEYING SAMPLE ON FULL SAMPLE PUMP PLED MADE IN MEDICAL PUMP PLANCE PUMP PLANCE PUMP PLANCE PUMP PLANCE PUMP PLANCE PUMP PLANCE PUMP PLANCE PU SAMPLING DATA

SAMPLING DATA

SOUVEL

SOUVEL - PA SAMPLING INITIATED AT Soverely 0840 \$ 1915 PIELD PARAMETER MONTORING EQUIPMENT MIDDEL & SERIAL NO Landt 20204 - PN 26858 75 25 YS1 556 FIELD-FILTERED (Y) FRIER SIZE 45 pm FIELD DECONTAMINATION (*) N DUPLICATE Fill alon Equipment Type In line PE = Polyalhylane PP = Polyalapylana S = Silcone AG 4 Ambel Glass CG 2 Carrier Glass WELL CONDITION CHECKLIST (circle appropriate stem(s), cross out if not approache) Type: Flush Mount (Stand Pipe) General Condition Good Needs Repair Well Caps (Good) Broken / None ividence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: (Y) N PVC Riser: Good / Damaged / None Evendence of Ponding Around Welli? Y / (N) Concrete Collar: Good / Cracked / Leaking / None REMARKS: Hao turned Robotish after some time

WELL ID: SHM-10-04

SITE: ALCOHOOL

PROJECT NO .: 77 . Decens

PUMP TYPE & MODEL: Waterra

START TEAM MEMBER: BAS, SEE

DATE: 7/6/10

TIME: 14300 -

WEATHER: 95 F Shows

1. INITIAL READINGS

START TIME: 1450

WELL DIAMETER (INCHES)	PID WELL HEAD (PPM)	DEPTH TO WATER (FEET)	DEPTH TO BOTTOM (FEET)		PRODUCT THICKNESS (FEET)	DEPTH TO SCREEN (FEET)	PUMP DEPTH (FEET)	WELL VOLUME (Gallons) (Millileters)
1/2	-	7.86	53.30) _	-			~4

2. DEVELOPMENT READINGS

TIME (MINUTES)	RATE (gal/min) (ml/min)	DEPTH TO WATER (FEET)	ORP (mV)	D.O. (mg/L)	pH (S.U.)	TEMP (degrees C)	SPEL COND, (us/cm)	Turb (NTU)	Volume (gal) (ml)	Appearance (Silty) (Clear)
5	0:70								3.5	Charles
7	1.75								37	814A
13	1.17								14	JO
19	617								2	4
31	(234)	7							28	Carry.
37	1.17								35	Silvy Sch
54 54	1.17								42	
54	1.17		35.6	28.0	5.91	10.95	468	MAX	45	Silty
	117		33.5	4.08	5,97	10.91	501	MAX	48	J
6S	1		28.8	178	6.00	11.28	502	MAK	50	
65			27.7	1.67	6.01	11.30	503	MAX	52	
75			19.7	483	6.02	11.33	805	MAX	55	141
4	¥ 00									
						/				
		1								

3. POST-DEVELOPMENT

END TIME:

TOTAL	TOTAL VOL	DEPTH TO	DEPTH TO
TIME	(gallons)	WATER	воттом
(MINUTES)	(millilietrs)	(FEET)	(FEET)
75	55	6.72	64.26

DDITIONAL NOTES: + laured + blows - habited up ys 1

WELL ID: SHM-10-02 PUMP TYPE & MODEL: Water To

START TEAM MEMBER: BAS, DEE

WEATHER: 957-SUMM

1. INITIAL READINGS

START TIME: 110

WELL DIAMETER (INCHES)	PIO WELL HEAD (PPM)	DEPTH TO WATER (FEET)	DEPTH TO BOTTOM (FEET)	E-00	PRODUCT THICKNESS (FEET)	DEPTH TO SCREEN (FEET)	PUMP DEPTH (FEET)	WELL VOLUME (Gallons) (Millileters)
11/2	-	18.06	60.20		1			N4

2. DEVELOPMENT READINGS

TIME (MINUTES)	RATE (gal/min) (ml/min)	DEPTH TO WATER (FEET)	OR (m\		D.O. (mg/L)	pH (S.U.)	TEMP (degrees C)	COND.	Turb (NTU)	Volume (gal) (ml)	Appearance (Silty) (Clear)
8	0.44									3.5	811
17	0.41									7.0	Sitter
36 55 70	0.37									14.0	Sitter
55	0.37									21.0	COUS4
70	0.20		80.5		3.34	6.17	13.78	849	MAX	24.0	Clordel
75	0.20		19.	5	4.13	628	14.41	820	1023	25.0	Coste
75 80	0.20		201	0		6.24	14.28	852	718	26	lessame
85	0.40		14.		2.03	6.32	14.05	861	770	28	lesschan
90	6.20		34.7	1	3.60	6.31	14.80	850	800	29	
	0.20		12.	7/	4.90	6.34	14,36	850	658	30	010
100	0.20		12.8	1	6.70	6.33	14.50	851	871	31	
100		э. 			, "			* 4	1	W.	1
				1	3.04						

3. POST-DEVELOPMENT

END TIME: 1250

TOTAL	TOTAL VOL	DEPTH TO	DEPTH TO
TIME	(gallons)	WATER	BOTTOM
(MINUTES)	(milliletrs)	(FEET)	(FEET)
100	31	18.09	64.57

ADDITIONAL NOTES:

WELL ID: SHM-10-05A

SITE: 74. Devens

PROJECT NO .: ACOOI -602

PUMP TYPE & MODEL: Waterra

START TEAM MEMBER:

DATE: 7/7/10

TIME: 0925 -1040

WEATHER:

1. INITIAL READINGS

START TIME: 1925

(INCHES)	(PPM)	(FEET)	(FEET)	(FEET)	(FEET)	(FEET)	(FEET)	(Millileters)
WELL	WELL HEAD	DEPTH TO	DEPTH TO		PRODUCT		PUMP	VOLUME (Gallons)

2. DEVELOPMENT READINGS

TIME (MINUTES)	RATE (gal/min) (ml/min)	DEPTH TO WATER (FEET)	ORP (mV)	D.O. (mg/L)	pH (S.U.)	TEMP (degrees C)	COND.	Turb (NTU)	Volume (gal) (ml)	Appearance (Silty) (Clear)
45					Licon		3.5	11	3,5	Silta
10				9.71	CARD				7	Clark
30			88-10	95.	5.2				28	Clarker
35			88.60	9.71	8.29	16.10	229	MAX	29	σ
40			56.1	10.55	8.71	4.95	228	MAK	80	
45			49.0	10.30	5.78	15.69	223	MAX	31	
50			40.4	10.28	5.92	15.25	222	MAK	32	
55			36.6	10:17	5.98	15.45	220	MAX	33	
60			33.3	11.75	6.03	18.73	218	MAK	34	
65				10.07	6.02	15.01	218	XAM	35	
70				10.76	6.03	15.28	220	apro	36	
75	<u> </u>		81.5	10.68	6.03	15.32	220	MAX	37	
		2-24								

3. POST-DEVELOPMENT

END TIME: 1040

TOTAL TIME (MINUTES)	TOTAL VOL	DEPTH TO	DEPTH TO
	(gallons)	WATER	BOTTOM
	(millilietrs)	(FEET)	(FEET)
75	37	25.86	59.90

Det up you

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Sovereign Consulting Inc. 9058 South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG

Low Flow Sampling



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040 413-540-0650

ROJECT MUN	Tart Ven	a's	WELL DIAME	Hyer	MA DEPTH TO WATE	9	DEPTHTO	SATEON	3/10 PID READ	Stim-lon
	110		(inches)	1-5	(feet)	11.19	(feet)	64	. 9 (ppmv)	
IBING DIAME	Très .	TUBING M	ATERIAL CODE DE		IO TYDE		全 全国的特别人员	PUMP EQUIPM	IENT MODEL & SERIAL I	unional description of the second
ches)	1/2	(see below)				staltie		GALLONS A	ER&	
der Stellager Glieb	Published the Village	Aller A. Martin Co. A.	AL WELL DEPTH - S	A STATE OF THE STA	A COSC & BUILDING	ACCOUNT OF THE PERSON OF THE P			52	
LISCREEF	INTERVAL	INITIAL	PUMP OR TUBWIG DE	PTH IN THAL PUM	OR TUBING DEPT				ON = 0.785 LITERS NG ENDED AT:	GALLONS:
PTH (fool):	56-66	WELL	DEPTH TO WATER	WELL (feet):	60		1414	1	514	LITERS: 36
IME INTER	VAL FLOW		(feet)	PUMP SETTING			DEPTH TO W	Aren //	Water Level Stable	LVOLUME PURGED DUF
(min)	[mL/a	nin)		3 2 2 2 2 2 2 2 2 2	9		START	END END	(Yes or No)	INTERVAL (mL)
_	450		ORPM Unive		speel		11.14	11.18		24
10	450		le	- 10			11.18	11.18	X	54
15-	450		He .	· ·			11.18	11.18	/	72
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	рH	TEMP	SPECIFIC	ORP	COLOR	ODOR
100	RATE (mL/mln)	WATER (feet)	(MIN)	OXYGEN (mg/L)		(°C)	CONDUCTIVITY (ps/on)	(mV)	(describe)	(describe)
5 minutes)*	(100-500 mL/min)*	(+/- 0.3')	(+/- 10%)*	(*A 10%)"	(e)- 0.1)*	(6/- 200)*	(e/- 3%)*	(#/- 10mV)*	-	100
10	450	11.18	6.25	0.95	7.05	1210	655	24.2	Clear	None
25	450	11.18	5.57	0.80	6.70	11.79	657	30.5	n	4
0	450	16.18	5.64	0.91	6.63	1206	658	24.3		
35	450	11.18	6.61	0.68	662	11.83	660	214		
10	ч	5/	7.11	084	6.61	11.90	659	229		
5	e i	4	8.02	0.88	6.60	1213	658	226		
0	11	te	8.84	0.89	6.61	12.12	657	25.6	+=	
5	ų	te	5-34	0.87	(e-(a)	12.08	658	26.6		
0	10	11	4.52	0.85	6.61	12.10	658	287	1	
	-		11.0	0.02	4-01	12.10	0.0	301		-
					-					-
				-		-	-	-		-
-	_	-					-			
		-								
									1	
		g)								
				13						
1 512001220	on parameters from I	The second second		AND DESCRIPTION OF THE PARTY OF	STEEN A PROPERTY.	DATE		Morphane III	With the Clayers now.	NISOTALIA SA
PLED BY (PRINT / AFFEIATIO		SAME	PLERISIONATURE		DAIA		SAMPL	ING IMPLATED AT	SAMPLING ENDED AT
ilal	Meneuve	5 1	n 1	11/10	114			-	15/5/5	1600
P OR TUB	NG DEPTH IN WELL	SAMPLE PL	MAP FLOW RATE (ML P	menute):	VS/ SS		BEQUIPMENT MOD		Dupo MEIY	A.S. 3
DECONT	AMINATION:	n		FILTERED: (Y)		ZE CLYTHUM			DUPLICATE:	⊙ »
RIAL CODE		-		ene, PP = Polypropyle	-		Other (Specify)	Mary Conference of	No recommendation	(S. A. S.
a: Eluc									Lock: Good	J. Broken (I Non
	h Mount / Stan		General Condit	ion Good Ne	lumb?(Y)/ I		Good) / Brot			/ Broken (Non
BANK YOU	of Ponding Aro	PROCESS OF		ncrete Collar.				Dankige	a / Notine	

Sovereign Consulting Inc. 9058 South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG

Low Flow Sampling



AC CX	SELC	evens	PROJECT LO	CATION: A VP-	MA			DATE 7/	13/10	SHM-10-01
ACOC	ABER:	AVIA.	WELL DIAME:		(feet) Z		DEPTH TO	BOTTOM: 7	1.8 PID RE	ADING: N/A
ACOC		3,355		Also his succession				westle said.	the fact of the second	Company of the Compan
JEING DIAME	TER 1/2	TUBING MU (see below)	ATERIAL CODE D	PURGE PU		istalic		GARAMA	MENT MODEL & SERVAL	05
	E PURGE: 1 WELL	VOLUME = (TOT	AL WELL DEPTH - S	TATIC DEPTH TO W				GALLONS		JTERS 235
		0.75" = 0.02;	1" = 0.04; 1.25" = 0.05	2"=0.10; 3"=0.	57; 4° = 0.65; 5°	= 1.02; 6"= 1.4			ON = 0.785 LITERS	TOTAL VOLUME PURGE
ELL SCREET EPTH (feel):	VINTERVAL	WELL O	PUMP OR TUBING DE	PTH IN FINAL PUNI WELL (Toet)	The state of the s	A 100 A 100 A 100 A 100 A 100 A 100 A 100 A 100 A 100 A 100 A 100 A 100 A 100 A 100 A 100 A 100 A 100 A 100 A	NG INITIATED AT	1100 - 120 - 120	NG ENDED AT	GALLONS: DE 7.
	62-72		65		65		1020		1125	LITERS: 28
	R LEVEL STABI		DEPTH TO WATER (feel)							
TIME INTER	IVAL FLOW F		-	PUMP SETTING	SS		DEPTH TO W	VATER (feet) END	(Yes or No)	VOLUME PURGED OUR
5	450	0 0	- GOO BPN	n drive	6370 5	peed	4.57	4.61		34
10 5	400	0-	-ce00 BPn 600 Bm dr	ive 63%	speat da	il	4.61	4.61	V	5L
5	400		K		le		261	461	Y	72
		17 - 2								
TIME	FLOW	рерти то	TURBIDITY	I bushalisma	1 - 30	Lanun	Aberios		20.00	
I HARC	RATE	WATER	רוכונסאטוי	DISSOLVED	pH	TEMP (°C)	SPECIFIC	(mV)	(describe)	ODOR (describe)
-5 minutes)*	(mL/min) (100-800 mL/min)*	(feet)	(+4- 1096)*	(mg/L)	(17- 0.1)*	[1/- 104*	(µ5/cm)	(+)- 10mV)*		
25	4500									
25	400	4.61	15.1	2.24	662	12.86	299	58.8	Clear	None
30	400	4.61	13.6	0.46	608	1259	298	76.1	Clear	Neny
35	400	4.61	10.45	0.32	5.98	1266	298	72.3	Clear	None.
10	400	4.61	7.10	0.26	6.00	12.48		70.7	"	11
15	400	4.61	6.41	0.23	6.09	1240	297	68.1	ir.	4
50	400	4.61	5.44	0.20	10.07	12.42	298		4	i
55	400	4.61	4-83	0.18	6.11	1237	248	66.4	Je.	9
	400	4.61	4.89	0.19	6.14		297	65.4	1/	
00	400	461			6.18	12.39	297		*	'y
5	Luo	-61	3.34	0.18	6.19	12.34	21/	63.5		1
-		_			-	-	-		_	-
					-		-			
		-		-		-		-		-
			-			-			-	+
_		. 20			133	100	-75			-
	-				-		-	-		
					-					-
A MARIETAL	on perameters from E	PA/540/8-45/504	And 1996							
40000	METAL SECTION	4		F. 10.00	SAMPLING	DATA	e distribution		AND SAME	
Oh. I	PRINT) I AFFILIATION	6 /		PLERIS) SIGNATURE		_		1 1 1 1 1 1 1 1 1	ING INTIATED AT	SAMPLING ENDED AT:
ME OR TUR	N. IPAPUN ING BEPTH IN WELL		MP FLOW RATE (INL P	er minute)	FIELD PARAMET	TER MONITORIN	G EQUIPMENT MOD	and the second	1125	1205
No.	65		400 ml/m			FORHO.		Ho 2/2	71	43
	AMINATION: (Y)	N	FIELD	FETERED: (Y)	N FILTERS	IZE: O-YS pm		0 00/00	OUPLICATE:	Y (1)
ERIAL CODE	6	Glass: CG = Cles		ion Equipment Type:	Line F		Other (Spenify)			
CONTRACTOR OF THE PARTY OF		Alexander (Alexander)	AUTO CONTRACTOR OF THE		and the second second		The second secon	complete (id with many	All and some and the
pe: Flus	h Mount (Stand	(Pipe)	General Condit	ion: Good)/ Ne	eds Repair	Well Cap	s: Good)/ Bro	ken / None	Lock; God	od / Broken KNone
			PVC? YIW		Plumb2: (D)	N PVC	Riser. Good)/ Damage	d / None	
endence	of Ponding Arou	and Welli?) / N Co	ncrete Collar: (Good) Crac	ked / Leaf	king / None			
winks.	ans/mso									

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MONITORING WELL SAMPLING LOG

Low Flow Sampling



Sovereign Consulting Inc. 4 Open Square Way, Svile #307 Halyoke, MA 01040 413-540-0650

HOVECT NAME	tert U	vens	PROJECTION	Aye	Mass				14/10	10-04
OJECT NUM	ACOU	1	(weyes) MEIT DIVME	IER: 1.5	DEPTH TO WATE	661	(lean)	BOTYOM: 6.	FIDREA (pany)	NA NA
ING DIAME	A CANADA	DE HATTER AND MAN	ATERIAL CODE PE	Purce Pur			200 A VE 201	lo we so you	ENT MODEL & SERIAL	
hes)	1/2	(see below)	PE	41.557.5	Per;	stalke		Genamy	0 509	
T AOLAME	PURGE: 1 WELL	VOLUME = (TOT	AL WELL DEPTH - S	TATIC DEPTH TO WA	JER) X WELL	CAPACITY		GALLONS 3	50 "	TERS:
L CAPACIT L SCREEN		INSTEAL	1" = 0.04; 1.25" = 0.06 PUMP OR TUBING DE				7; 12" = 5.88 VG INITIATED AT:	1 GALL	ON • 3.785 LITERS NG ENDED AT:	GALLONS:
TH (feet):	55-65	WEUL	(leat): 60	WELL (fem):		100	0950		1100	UTERS: 32
WATER	LEVEL STAE	LIZATION	DEPTH TO WATER	WITH PUMP: (.61					1 00
ME INTER			(feet)	PUMP SETTING			DEPTH TO W		Water Level Stable	
(min)	500		350 Rem Dr	re 75	& Speed		G6/	6.73	(Yes or No)	S L
2- 15			ч		d		6.73	6.73	У	2.5L
r-20			4		4		673	6.73	×	2.56
									100	
TIME I		Lagarina	T (seining	T sienesiums	1 41	L	oproino.	ORP	2000	466
TIME	RATE	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	pH.	TEMP (°C)	SPECIFIC	(mV)	COLOR (describs)	OBOR (describe)
5 minutes)*	(mi_/min) (100-500 mi_kmin)*	(feet)	(4/- 10%)*	(mg/L)	(+J- 0.1)*	[4/- 5%)*	(1/5/cm) (1/- 5%)*	(4F 10mV)*		
25	500	673	5.76	0-64	654	11-18	677	266	Clear	Non
30	500	6.73	5.26	0.48	6.52	10.92	674	24.5	4	14
35	500	6.72	7.32	0.27	6.47	10.94	665	21.5		
40	500	4.72	8.09	0.26	644	10.94	659	19.7		
15	500 6.72		4.95	0.26	4.42	11.03	653	19.3		
50	300 6.72		15:20	0.21	638	1488	646	18.4		
55	500 6.73		20.70	0.31	6.39	10.92	639	14.2		
60	500	6.73	16-70	0.22	6.37	10.85	637	11.9		
3	500	6.73	17.4	6.23	637	10.80	632	11.4		
06	500	673	18-7	0.25	6.36	10.84	630	10.1		
09	500	6.73	17.7	0.23	6.37	10.82	630	9.9		/
								10		
						2.2	1			
						-			1	
						10				
		100					1.4-0.		6	
		2							1	
		7				7		-		
'A stabilitatio	on gerameters from	EPA/\$40/\$-95/504	April 1996		CAMPAIN.			The Second	on the contract the second	or sorgeon City and
MPLED BY (P	RINT) / AFFILIATION	IN:	SAM	PLENISTER	SAMPLING	A A A A A A A A A A A A A A A A A A A	建筑高级的构设员	SAMPL	ING INITIATED AT	SAMPLING ENDED AT:
MinV.	leneuve	Swan		W////		3			1100	1130
MP OR TUBI	NG DEPTH IN WEL	L SAMPLE P	SOU	ser minute):		BR MONITORING	G EQUIPMENT MOD		buc ME 19	/R V2
_	0	100		D-FILTERED (Y)		IZE O.YS WIT	HO1 -	- 51 - 50		
	AMINATION: (2)		Filtra	dan Equipment Type:	Inline				DIPLICATE	* (N)
TERIAL CODE	AG = Ambe	Glass; CO = C m	THE RESERVE OF THE PARTY OF THE	ONDITION CH		T = Tellun; Q =		Stucential Con-		The second of the second
	Mount / Star	d Pipe)	DEPOS DE LA COMPANION DE LA CO	tion: Good/ No		222	S: Good/ Bro	113.113.11		d / Broken No
			8 PVC7 Y / (N)		Plumb?: (Y)		Riser. Good			
endence o	of Ponding Arc	und Welli?	Y / (N) Co	vicrete Collar:	2000) / Crac	ked / Leal	king / None			
MAKKS:	MS/MSD									

Sovereign Consulting Inc. 905B South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG

Low Flow Sampling



ROJECT NAM	F+ De	m in s	PROJECT LOC	PATION AY	r MA			DATE 7/14	12010	SHM-10-03
OJECT NUM	BER	01.02	WELL DIAMET		DEPTH TO WAT	ER 42	DEPTH TO		P(D RE)	DING: NA
Zhez-Jan		CONTRACTOR OF THE PARTY OF THE	Autoria V							Kasa delakar
ING DIAME	TER 1/1	TUBING MA (see below)	TERM CODE	PURGE PUI	IP TYPE PO	ristaltiz		Gedun	ENT MODEL & SERIAL	#s
	PURGE: 1 WELL	-	L WELL DEPTH - ST					CALLONS:	h	TERS:
	111111111111111111111111111111111111111		"= 0.04; 1.25" = 0.06;	Control of the State of the Sta			7; 12*+5.65	2.5	ON = 0.785 LITERS	TOTAL VOLUME PURG
LL SCREEN		WORLS II	PUMP OR YUBING DEF	PTH IN FINAL PUM WELL (feet)		THIN PURGI	NG INMITATED AT:	PURGI	G ENDED AT:	GALLONS:
. Lawrence	60-70)	65		65	1	AF 1400		15 36	LITERS: 5L
WATER	LEVEL STAB	LIZATION	DEPTH TO WATER	WITH PUMP:						
IME INTER	VAL FLOW!		Ibaaa	PUMP SETTING	S		DEPTH TO W	IATER (feet) END	(Yes or No)	INTERVAL (mL)
0-5			RPM Drive	Ful spea	ed Check	Value	26.82	26.83	Tress, red	14
5-10	70		at	te			26.83	24.53	Y	350ml
0-15	70		ч	ij		4	26.83	26.83	'Y	35001
	1.0						0.0			
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mL/min)	WATER (reet)	(NLA)	OXYGEN (mg/L)		(10)	GONOUCTIVITY (us/on)	(m/v)	(describe)	(describe)
5 minutes)*	(100-500 mL/min)*	(+1- 0.3)	(41- 10%)*	(++ 10%)*	(+/- 0,1)*	(4/- 3%)*	(*/- 3%)*	(14 10mV)*	-	
0	10	26.83	525	2.21	662	16.61	3339	82.9	Clear	None
7	70	26.83	44.4	3.3	6.62	1637	3336	89.0	1 r	7
14	70	24.83	39.3	4.23	6.61	16.44	3332	89.6	17	j,
31	70	26.83	40.8	3.43	6.60	16.01	3366	89.4	Tr.	4
8	70	26.83	39.6	3.35	6.62	15.56	3343	80.7		Xe:
5	70	26.43	35.5	1.54	6.62	15.78	3332	77.2	t _r	3,
2	70	26.43	31.4	1.45	661	1547	-	759	74	3/
19	70	26.83	32.3	1.51	661	15.98	3339	75.7	11	9
86	70	26.83	31.7	1.47	6.60	14.09	3331	75.7		E1
10	70	26.03	31.7	1. 1.7	0.00	1.4.01	3331	10,1		+
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_	-	-			-					
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-3										
	on purameters from			and Agreement and	Surp.	Janah mani	en en en en en en en	Million China	property and a second	Name of State Contract
	RINT) / AFFILIATIO		SAME	LERISTEIGHATURE	SAMPLING	DATA	三角型的	SAMPLI	NG INITIATED AT:	SAMPLING ENDED AT:
hilio	V. Henous	Sala		1/1/2	200	2-		1	530	
0. 5.0 5.200	NG DEPTH IN WELL		MP FLOW RATE (INL D	er minute):			G EQUIPMENT MOD			She (Ye)
6	5		70			and the second	81401 6	-smothe a	oboe ME	14843
D DECONT	AMMATION: ①	N		on Equipment Type:		SIZE: U.Y. HIM			DUPLICATE:	Ø n
FRIAL CODE	AND THE REAL PROPERTY.	Gires: CO = Clear	Glass: PE=Polyathyla	me: PP = Polypropyl	erre; 3 = 5 moone;			10. 1		ar de la constant de la constant de la constant de la constant de la constant de la constant de la constant de
			Canada Candill							7
	Mount /Stan		PVC? Y / Q		Plumb?: (Y)		Riser: Good			d / Broken -Ne
	of Ponding Aro		_	ncrete Collar:		A TOTAL STREET		, Damage	4 / NONE	
	THE PERSON NAMED IN COLUMN	-ine stout 1	1 -00	OURDI.	Cial	The second second	med (Citation)			



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MONITORING WELL SAMPLING LOG

Low Flow Sampling



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyake, MA 01040 413-540-0650

			AL WELL DEPTH - ST		Date Hillson			GALLONS		ERS
VELL SCREEN I		INITIAL	"= 0.04. 125 = 0.06. PUMP OR TUBING DE	THIN FINAL PUMP	OR TUBING DEPT	HIN PURGIN	G INTRATED AT:		ON = 3.785 LITERS WG ENDED AT:	GALLONS
EPTH (leet)	50-60) METT (I	55'	WELL (lect):	.55	0	935		10:38	LITERS .5
	EVEL STAB		DEPTH TO WATER	WITH PUMP:						
TIME INTERV	AL FLOW I			PUMP SETTING	s .		DEPTH TO W START	ATER (leol) END	Water Level Stable (Yes or No)	VOLUME PURGED D INTERVAL (mit
10	170	0.10	ocitom, s	peed du	al 100%	20	25.88	25.91		514
15_	100		n ·	-	11		2591	25.91		11
20	100)			11		25.91	2591		26
TIME (3-5 minules)*	PLOW PATE (mL/min)	DEPTH TO WATER (leat)	TURBIOITY (NTU)	DISSOLVED DXYGEN (mg/L)	pH (av. 0.1)	TEMP (°C)	SPECIFIC CONDUCTIVITY (#5/cm) (#7-3%)*	ORP (mV)	COLOR (describe)	DDOR (describe)
30	100	25.91	11.3	275	1036	ורקו	220	20.3	Meas	Dene
3.5	100	25.91	11.60	2.27	632	17.10	205	22.56	1.000	3744
40	100	25.91	7.80	203	6.27	17.90	1960	25.1		
45	40	2591	6.61	1.96	627	14.21	190	27.2		
50	50	2591	5.10	1.75	627	14.43	184	280		
55	80	25.91	5.17	146	Ca.30	18.64	187	24.60		
60	90	2591	5.37	1.43	6.29	18.87	187	31.3		
105	90	25.91	5.12	1.42	629	19 06	1860	31.7		
-										
-	-									
			1							
-										
e what his	NEW YORK	EPAMAOS SYLON	April 1996		E SAMPLING	BATA			Acceptable	
COSM	n Hoo	11 5	moon	UNLIN	n Her	vot		1	U.40	SAMPLING ENDED AT
eet):	5 5	, I	90)	(FRITERED (V)		-DC-340 (-201)	IG EQUIPMENT MO	IDEL & SERIAL I	ls:	
ATERIAL CODES) N	Filest	iou Equipment Type:			Other (Special		DUPLICATE	* 🕚
				ONDITION CHE				ppticable)		

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MONITORING WELL SAMPLING LOG

Low Flow Sampling

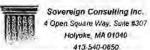


PO READING NA SERIAL RE OFFICE & SERIAL RE OFFICE SERIAL RE OFFICE SERIAL RE OFFICE STATE BALLONS: UTERS: 27.5 ET LEVEL STADLE YAS OF NO) VOLUME PURGED DU INTERVAL (ml.) YAL YAL COLOR (describe) COLOR (describe) COLOR (describe) COLOR (describe)
OGLOR (describe) COLOR (describe) COLOR (describe) COLOR (describe) COLOR (describe) COLOR (describe)
ESLITERS TOTAL VOLUME PURCED AT BALLONS: LITERS: 27.5 EN Level Stable VOLUME PURGED DO. INTERVAL (ml.) YOU DO NO STATE OF A COLOR (describe) LOCAL VOLUME PURGED DO. INTERVAL (ml.) YOU DO NO STATE OF A COLOR (describe)
ESLITERS TOTAL VOLUME PURCED AT BALLONS: LITERS: 27.5 EN Level Stable VOLUME PURGED DO. INTERVAL (ml.) YOU DO NO STATE OF A COLOR (describe) LOCAL VOLUME PURGED DO. INTERVAL (ml.) YOU DO NO STATE OF A COLOR (describe)
ED AT. BALLONS: LITERS: 27.5 EN Level Stable VOLUME PURGED DX. Yes or No) YAL Y 2.5 L Y 2.5 L COLOR ODOR (describe) Lear None
ETLEVEL STADIE YOS OF NO) ETLEVEL STADIE YOS OF NO) ETLEVEL STADIE YOU INTERVAL (mL) YL Y 2.5 L Y 2.5 L COLOR ODOR (describe) (describe) Lear None
er Level Stable VOLUME PURGED DX Yes or No) YL Y 2.5 L Y COLOR (deacribe) COLOR (deacribe) COLOR (deacribe) COLOR (deacribe)
Yes or No) INTERVAL (mL) YL Y 2.5 L Y 2.5 L COLOR ODOR (describe) Lear None
Yes or No) INTERVAL (mL) YL Y 2.5 L Y 2.5 L COLOR ODOR (describe) Lear None
Y 2.5 L Y 2.5 L Y 2.5 L COLOR ODOR (describe) (describe) Lear None
Y 2.5L. COLOR ODOR (describe) (describe) Lear None
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energy of the top
MATERIAT: SAMPLING ENDED AT:
1350
0/20 ME 14883
DUPLICATE: Y (N)
water the party
ock: Good / Broken V Non
ock: Good / Broken / Non Ione
LOW I TO A

Sovereign Consulting Inc. 905B South Main Street, Suite 202 Mansfield, MA 02048

MONITORING WELL SAMPLING LOG

Low Flow Sampling



101	even's		CATION A-YE	c mA			DATE: 7//	5/10	WELLIO: SHM-10-0
FR A	- 1	(inches)		(Geet)	18.03	DEPTH TO	BOTTOM 65	(ppmv)	NA NA
			A STANCE OF STREET	PURGING	DATA	A Lorental		Constal disease	Manager Commission
ER 1/2	(see below)	ERIAL CODE: PE	PURGE PU	PO-15	tallie				M.
PURGE: 1 WELL	VOLUME = (TOTAL	WELL DEPTH - S	TATIC DEPTH TO W	ATER) X WELL	CAPACITY		C C	Li	TERS
							TGALLO	XN = 3.785 LITERS	TOTAL VOLUME PURGE GALLONS:
55-65					CORT. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Pondin	1248	UTERS: 25
LEVEL STAB			WITH PUMP:						
	ATE	(CAL)	PUMP SETTING	S					VOLUME PURGED DUI
		Epm Drive	66% Spen	1	-		1	(TES GI TRO)	34
500		Ų.	a			1.2		У	2.54
500		Ţ(II.			18.07	18.07	У	2.57
FLOW RATE	DEPTH TO WATER	TURBIDITY (NTU)	DIBSOLVED	PH	TEMP (*C)	SPECIFIC CONDUCTIVITY	ORP (mV)	COLOR (describe)	ODOR (describe)
(mL/mln)- (100-500 mL/mln)*	(foet)	(4/- 10%) ²	(mg/L) (+/- 10%)*	(*/- 0.1)*	(+/- 3M)*	(u5/cm)	(+/- 10mV)*		
								Clear	None
					1236			11	"
								L L	i.
					_			Ti	1,0
								- 6 -	0
								17	0.
					-		-	11	*
					-				1.
500	18.01	3.4/	0.45	4.72	14.21	036	80.8		
	-								
$a_i b_i$		- 67							1 1 1 1
				-					
	TO SHAPE IN SE	The second secon		SAMPUNG	DATA			437112774	建
11	N.	SAM			2				SAMPLING ENDED AT
	POLICE TO A CONTRACT OF THE PARTY OF THE PAR	(DE) (DV) (DV)	111/10	loci a nacius	ed Maturatur	Chiman		2>0	1335
E Level Control	SAMPLE PUA	and the second of the second of the second	per minute):					1E 14847	
WINATION: (9)	N	FIEL)//0/	1.61.6	DUPLICATE:	
	Glass CO = Clear C	Slate, PE - Polyetry	beck PP = Polypropy						a real Accessor
Mount (Stan	4	General Condi	tion: Good N	eeds Repair	Well Caps	Good Bro	ken / None	Lock: Goo	d / Broken Nor
					-	1)/ Damage	d / None	
of Danding Arn	und Welli? Y	/ (N) Co	oncrete Collar:	Good / Crac	xed / Leak	ing // None /			
	PURGE: 1 WELL PURGE: 1 WELL PURGE: 1 WELL (Gaulons Per Food INTERVAL 55-65 LEVEL STABL AL FLOWER (mulm 500 500 500 500 500 500 500 5	PURGE: 9 WELL VOLUME = (TOTAL (Gallions Per Pool) 0.75° = 0.02° 1 INTERVAL WELL (NE SS-GS WELL (NE LEVEL STABLIZATION AL FLOW RATE (mL/min) SOO GOO! SOO SOO FLOW WATER (MC/min) (100-0.37° SOO 18.07	TUBNIG MATERIAL CODE: DE PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - S (Gallons Per Foot) 0.75" = 0.02; 1" = 0.04; 1.25" = 0.05 (NIERVAL WELL (Feet) 600 EVEL STABLIZATION DEPTH TO WATER (Inc.) 100 AL FLOW RATE (Inc.) 100 FLOW DEPTH TO WATER (Inc.) 100 FLOW WATE	TUDING MATERIAL CODE PURCE	TUDING MATERIAL CODE F PURCE PUMP TYPE PC-13	PURISING DATA PURISING DATA PURISING DATA PURISING DATA PURISING DATA PURISING DATA PURISING DATA PURISING DATA PURISING DEPORT PURISING	Page Page	PRICO	This This

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MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040 413-540-0850

TUBING DIAMET	ost De			volu	V 150	Selling (-DP	7		Holyoke, MA 01040 413-540-0650
TUBING DIAMET	BER	vens	PROJECT LO	DEVEN	100.00	v (5	DATE OF 10	12/2010	SHM-10-17
TUBING DIAMET	1 X 11 - 1 X	-	WELL DIAME (inches)		(Icel) 8	ER	DEPTH TO		PID READ	The second secon
METT AOTOME (pucper)	ME STATE OF	4.5		10 m			and the same of th	n'h Essen		
METT AOTOME	TER YUT	TUBING MU	TERML COOF:	PURGE PU					ENT MODEL & SERIAL #	5
The state of the s	PURGE: 1 WELL			STATIC DEPTH TO W		-		GALLONS:	Livi	ERS:
WELL CAPACITY	ALC: A CAMPINE A LANCE): 0.76 ± 0.02;	1' = 0.04: 1.25 = 0.0	; Z+0.16; X=0:	31; 4°=0.65; 5°	-1.02 5 - 1.4		1 GALLO	N = 3.765 LITERS	TOTAL VOLUME PU
WELL SCREEN I DEPTH (feel):	INTERVAL	WELL (PUMP OR TUBING D	OF WELL (Soot)			IG DITIATED AT		IG ENDED AT	GALLONS:
45			210	/ 4	005	9/10	005	/	033	LITERS:
1 00 75 2 75 2 740	LEVEL STAB	2,000,000	(leet)						West of Street	Tracing and a second
TIME INTERV	/AL FLOW F			PUMP SETTING	3		DEPTH TO W	END END	Water Level Stable (Yes or No)	VOLUME PURGED D INTERVAL (mL
	-	-					-			
			******				-			-
TIME	FLOW	DEPTH TO	TURBIOTTY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mL/min)	WATER	(NTU)	DXYGEN (mg/L)		(°C)	CONDUCTIVITY	(mV)	(describe)	(describe)
(3-5 minules)*	(100-500 MEMIN)	(feet) (*^ 0.37)*	(+F 10%)*	IN- IONE	(or all	(e/- 99Q*	(h2/cm)	[+/- 10nW)		
1009	300	8-10	3.64	4.90	3.64	17.03	368	131.7	clear	none
1017	300	8-10,	3.45	4.68	3.15	16.81	370	141.5	clear	none
1007	300	8-10'	1.03	4.90	17.6	15.59	438	164.0	clear	none
1100 3	325	18-20'	1,081	4.65	3.37	15.38	1007	164.4	silty	none
1109	395	18-20'	867	4.64	12.61	14.88	1,040	162.8	silty	none
	325	18-20'	20.1	4.91	1.66	14,07	1036	1782	Clear	None
										1,
			19.					1000	× 1	
				7 3.			1			
* EPA stubilization	parameters from E	PA/540/S-85/504	April 1996							



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MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040 413-540-0650

Pro Sampling MOJECT HUMBER 0108 1818 SIM SHM-10-17 DEPTH TO BOTTOM (ppmv) TUBING MATERIAL CODE IPMENT MODEL & SERIAL IN Inches): 114 Geopump (see below) POLY GALLONS WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Fool): 075 = 0.02, 1" = 0.04; 1.25 + 0.06; 2 = 0.18; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88 GALLON = 3.785 LITERS TOTAL VOLUME PURGED: WELL (feet): 29' 28-30' 20.30 1443 UTERS. 1430 WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP: (feat) Water Level Stable FLOW RATE PUMP SETTINGS DEPTH TO WATER (feet) VOLUME PURGED DURING (mUmin) (Yes or No) INTERVAL (mL) DEPTH TO TURBIOTTY DISSOLVED SPECIFIC COLOR FLOW TEM ORP ODOR RATE WATER CONDUCTIVITY (NTU) DXYGEN (°C) (mV) (describe) (describe) (milimin) (foet) (mg/L) 10/- mg-1+/- 10%F 101- Q1F Int. IOmNY (3-6 minutes)* 26-30 0.31 1435 10.04 6.11 14.14 52.4 clear 751 392 none 4.79 749 58.6 clear none. 28-30 0.25 6.04 13.70 Bab 1429 6.00 14tha 325 28-30 2.17 6.01 13.72 747 63.4 none EPA stabilization parameters from EPA/540/S-95/504 April 1996 29 CIELD-FILTERED: (Y) FILTER SIZE: ____ IM FIELD DECONTAMINATION: (V) N DUPLICATE (1) FAMAUON Equipment Type: AG - Amber Glass: CD - Clear Glass PE = Polyelhylene: PP = Polygropylene 5 = Silicone T = Tellon 0 = Other (Specify) WELL CONDITION CHECKLIST (circle appropriate liem(s), crusp out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None indence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None tence of Ponding Around Well? Y / N Concrete Collan. Good / Cracked / Leaking / None ARKS: GP-10-17-029-4

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MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoka, MA 01040

413-540-0650

Hist	Mansfield, 508-33			Vertic	LOW FLOW SON	noting	79n -	-	Library	Holyaka, MA 01040 413-540-0650
PROJECT NA	ACOOL C	02	PROJECT CO	DEVE	nslayer	(7	DATE: 8/2	2/2010	SHM-10-17
(OJECT NU	MBER		WELL DIAME (Inches)	CO.	(feet)		(feet)	710750	/ PID READ (ppmv)	
TUBING DIAM	ETER 1/1	TUBING M	ATERIAL CODE	PURGE PU	MP TYPE			PUMP EQUIPM	ENT MODEL & SERIAL	
(Inches):	114		1 - 11		Geoply			GALLONS:	fur	ERS:
			AL WELL DEPTH - S		11.00					
WELL SCREE	NINTERVAL	U: 0.75 = 0.02;	1 = 0.04; 1.25 = 0.00 PUMP OR TUBING DE	PTHIN THAT PUM	POR TUBING DEP	THIN PURGIN	G INITIATED AT:		ON = 3.785 LITERS NG ENDED AT:	GALLONS:
DEPTH (feet):	46-40	WELL.	39	WELL (led)	39	1.	510	h	3 1535	LITERS:
	R LEVEL STAB	LIZATION	DEPTH TO WATER	WITH PUMP.	01			_	- CO - C	
TIME INTER			(feet)	PUMP SETTING	SS .		DEPTH TO W	ATER (feat) END	Water Level Stable (Yes or No)	VOLUME PURGED DURIN
(min)	(mL/n	ini					START	ENU	Tresormon	MATERIANC TIMES
										9 mm - 1
				E STORY S					150.11	
TOME	FLOW RATE	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	pН	(°C)	SPECIFIC	ORP (mV)	(describe)	ODOR (describe)
(3-5 minutes)*	(inL/min) (100-500 mL/min)	(fest) (#/- 0.5)*	(*/- 10%)*	(mg/L)	(+F 9.1)	(H- 70)*	(4/- 3%)*	144 10mm		
1520	350	34	34.3	0.75	6.25	15.22	549	-134.6	clear	None
1527	350	39'	24.0	0.31	6.82	14.08	541	-1418	Clear	none.
15:34	350	391	37.9	0.26	6.83	13 90		-1385		none
			17							
1										
5 - 31			TEL TEL							
								1		
. = .	1	4								
										7
),								
							2-1			
	++ +7				1	8.	n.		3-29	
2)	1	W-26-	00 a = 8	Secret X		9	100-5	-1-0,	7	
	on parameters from E									20 1.000 100 100 200
AMPLED BY (F	FRINT) / AFFILIATIO	A COUNTY OF SHIP	SAMP	LER(S) SIGNATURE	SAMBLING	DATA	2000	SAMPL	ING INITIATED AT	SAMPLING ENDED AT
Silve	- Phones	or ma	mount /	1 land	they ?	7205	Sale	1	5.36	
UMP OR TUBI	NG DEPTH IN WELL	SAMPLE IN	IMP FLOW RATE (mily	es mounts)	FIELD PARAMET	ER MONITORIN	G EOOPMENT WO	DCL A SERIAL A	5:	
	39		350	FILTERED (C)	N FRIERS	ize jim				_
ELD DECONT	AMINATION: (P)	N	1	on Equipment Type:	n Pacients	ize i - Jun			DUPLICATE	* (4)
ATERIAL CODES	S AG • Amber (Nasa CG - Clean		ne: PP + Polycropyl		profession and	Other (Specify)			
Vent Chief	Mount I Star	Pine		ONDITION CHE			The state of the state of the	er 0.5 7.6 h. n. er	Lock: Cond	Rentan I Man
	Mount / Sland Rain Water Belv		General Condition PVC? Y / N		ds Repair umb?: Y / N		Good / Broke iser: Good /			Broken / None
idence o			/ N Cond						(1)	
ARKS:			1							
			67	P-10-	11- 39	- 4				
						F				

Sovereign Consulting Inc. 905B South Main Street, Sune 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040 413-540-0650

ROJECTHAN	508-339	-3200	PROJECT LO	Vertice	CA PR	Balino	-DP	DATE 27 /	27/2	Holyoke, MA 01040 413-540-0650
OJECT NUM	ACOOLO	02	WELL DIAME!	DEV	ENS/E		DEPTH TO		2/2010 PID READA	SHM-10-17
#155.E.C.	MS 430171	4000	(inches)	September 19 Septe	(feet)	NAGAZIES.	(feet)	SHE OF PERSONS	(ppmv)	
BING DIAMS	74"	TUBING MA	VIERIAL CODE:	PURGE PU	MP TYPE:	A 10 TO 10 T	A CONTRACTOR OF THE PARTY OF TH	PUMP EQUIPM	ENT MODEL & SERIAL IN	THE RESIDENCE OF SECURE
	1		AL WELL DEPTH - ST		ATER) X WELL			GALLONS:	LUTE	RS
LL CAPACI	TY (Gallons Per Fool)	0.75 = 0.02;	1'-004: 1.25 = 0.06;	2 - 0.16: 3 - 0.	VI: 4" = 0.65, 5"	1.02; 6'= 1.47	12" = 5.88		N = 3.785 LITERS	TOTAL VOLUME PURC
PTH (Ket):	INTERVAL	MELT (PUMP OR TUBING DE	WELL (feet)	PORTUBING DEP	1		(2.000)	GENDED AT	GALLONS: LITERS:
WATER	60 LEVEL STABL	IZATION	DEPTH TO WATER	WITH PUMP:	7.7		leco		Q&O	uras.
ME INTER	1.10.12.20.5177	100/10/30	(feet)	PUMP SETTING	is .		DEPTH TO W		Water Level Stable	VOLUME PURGED DU
(min)	(mUm	in)	34.				START	END	(Yes or No)	INTERVAL (ML)
				->						
							11 110			
THE	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	На	TEMP	SPECIFIC	ORP	COLOR	DOOR
	RATE (mL/mln)	WATER (feet)	(NTU)	OXYGEN (mg/L)		(-c)	CONDUCTIVITY (µS/cm)	(mV)	(describe)	(describe)
-5 minutes)*	(100-500 mL/min)*	(4/- 0.3)*	(N- 10%)	(4/- 10%)*	(+)- 0.1F	(41- 310,	(4/- 376)*	(at 10mV)*		110 0 000
53	26 :	49'	Little L	0.00	1 -3	111 000	1.160	-701	Valla Class	N.O.O.
610	300 300	49	414 a3a	0.87	6.53	14.84	644	35.1	little Cloudy Silty	None
669	300	49'	65.6	1.40	6.53	14.80	670	~33.0 -28.3		none
200	300		WO. W	1.40	(v.5a)	19.00	010	90.5	With Crokby	110/12
0=1	C	1								
									3.0	
	142 4									
	-						-			
150	12.4		- 27					-	7 7 7 7	+
		7	700				-			
		-						-		
	n parameters from E		the second second second second second							
PLEO BY (P	RINT) / AFFILIATION		SAM	LER(S) SIGNATURE		DATA	1.450.14		ING INITIATED AT	SAMPLING ENDED AT
wick	Proposo	am 50	som /	mlen	Hen O-	F. 7.4	MIT B		1624	
1	The state of the s	Sanda Car I S	an incommental bearing		FIELD PARAMET	ER MONTORIN	G EUURMENT MO	DEL A SERIAL :	15.	
· c	7		BCC) FIELD	FATERED (Y)	N FILTERS	ZEjim		~~	L. 1414	
	AMINATION: (P)	N SOLEN		on Equipment Type	Y Y				DUPLICATE	* (P)
ENAL CODES	AG ~ Amber G	leas: CG + Clear		ONDITION CHE				ppicable)		
e: Flush	Mount / Stand	Pipe	General Conditio				Good / Broke		Lock: Good /	Broken / None
			PVC? Y / N	Is Well PI	THE RESERVE AND ADDRESS OF THE PARTY OF THE					

6P-10-17-49- 4

Sovereign Consulting Inc. 905B South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyake, MA 01040 413-540-0650

blusars		MA 02048 9-3200		Desta	LOW Flow Sa	Aling	2-00	7	ittan	Holyake, MA 01040 413-540-0650
ROJECT NA	ACO).O	A Q	PROJECTIO	DEV	ENS/A	VER	1	DATE 8/	2/2010	SHM-10-17
OJECT NU		00	WELL DIAME	TER	DEPTH TO WAS	ER	ОЕРТН ТО	U.	PILI REAL	NING:
AN STATE OF	Side Charles	WWW.	(inches)	250.427 ARK	(feet)	BATA SOS	((ee))	30.0000	(ppmv)	
BING DIAM			POLV	PURGE PU	MP TYPE		White change are	PUMP EQUIPA	MENT MODEL & SERIAL	is a second second
	I H		TOTY		eopump			GALLONS:	Įui	TERS
Andrew Street,			1'=004; 125 × 0.0				7: 12" = 5.88	1 GALL	ON = 3.785 LITERS	TOTAL VOLUME PURG
	NINTERVAL		PUMP OR TUBING D		P OR TUBING DE			PURGI	NG ENDED AT:	GALLONS:
	55.5		Slo		56	1.0	450	/	715	UTERS:
WATE	R LEVEL STAB		DEPTH TO WATER	WITH PUMP:						
TIME INTER	RVAL FLOW F			PUMP SETTING	SS .		DEPTH TO V	VATER (Isel) END	(Yes or No)	VOLUME PURGED DUF
								-		
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	1	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE	WATER	(NTU)	OXYGEN	pH	(°C)	CONDUCTIVITY	(mV)	(describe)	(describe)
15 minutes)*	(mL/min) (100-500 mL/min)*	(+/- 0.3)r	(+4- 10%)-	(mg/L)	(+) 0.17	(+/- H)()*	(µ5/cm)	(vi- 10mW)*	~ ~	
650	275	56'	4,000	10.37	669	15.49	668	-52.7	cloudy	none
904	875	561	<1,000	0.01	6.74	H.93	671	- 90.1	cloudy	none
714	275	50'	660	0.04	6.73	14.68	666	-84.3	cloudy	none.
				11000	-	1				
								1		
								1		
					+					
-		9 (^-		1			- 3		
	11150	X 10	7			1	8 4	1	~	
	on parameters from E									
PLEO BY (F	PRINT) / AFFILIATIO	N. C.	TSAM	PLERIS) SIGNATURE	SAMPLING	DATA		ISAMP	ING INITIATED AT	SAMPLING ENDED AT
	Mubsh		- 1	nen	14.00	7 3.0	100 D		716	1,000
	NG DEPTH IN WELL	SAMPLE PU	MP FLOW RATE (UL F	per minuge)	FIELD PARAMET	ER MONITORIN	S EQUIPMENT MC			
2	de	. 6	75							
D DECONT	AMINATION: (V)	N		OFILTERED: (YT)	N FILSER	512E µm			DUPUCATE	* (1)
ERIAL COOES	AG = Amber C	ilesa: CO = Clear		or PP • Polypoury	ine 5 + Signine	Y = Tellon O =	Diher (Suesty)			
	فيساطنا		WELL C	ONDITION CHE	CKLIST (circle	эрргориам нету	s), cross out # not a	policable)		
	Mount / Stand	770	General Condition				Good / Broke			Broken 1 None
			PVC7 Y I N	Is Well Pl			iser: Good ,	Damaged	/ None	
IARKS:	f Ponding Arour			crete Collar: G		o / Leaking	g / None			
	G	1 -10	17-17-1	050-	U					
				0.0	-					

Sovereign Consulting Inc. 905B South Main Street, Soite 202 Mansfield, MA 02049

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA D1040 413-540-0650

	508-3	39-3200		Mestal.	M In	culiba	C -121	1		413-540-0650
ROJECT NAM	Arnos	v.2	PROJECT LO	Verticons!	AVER		2	DATE 8 - 8	2-390	SHW-10-18
OJECT NUM	MBER.		WELL DIAME	YER:	(Isel)	R. 6-6	DEPTH TO	BOTTOM.	PID READI	
	ALC: ASS.			77020				1745年		
IBING DIAMI	JU"	(see below)	POLY	PURGEPUR	60 brown			PUMP ECUIPM	ENT MODEL & SERIAL M	
ELL VOLLIM	EPURGE: 1 WE	LL VOLUMB: (TOTA	L WELL DEPTH - S	TATIC DEPTH 10 WA	TER) X WELL	CAPACITY		GALLONS:	un	CRS
ELL SCREEN	NINTERVAL	001) 0.75 = 0.02: 1 INITIAL	" = 0.04, 1.25 = 0.06 PUMP OR TUBING DE	2 = 0.16; 3 = 0.3	OR TUBING DEP	1.02 6' = 1.47	GINITIATED AT:		ON = 3.785 LITERS NG ENOED AT:	TOTAL VOLUME PURGE GALLONS:
EPTH (feel):	10-4	METT II	een) -7	WELL (Real):	7	119	315	1	634	LITERS:
WATER	R LEVEL STA	BLIZATION	DEPTH TO WATER	WITH PUMP:			0.0		107	
TIME INTER		VRATE	(reer)	PUMP SETTING	s		DEPTH TO W	ATER (feet) END	Water Level Stable (Yes or No.)	VOLUME PURGED DUR INTERVAL (mL)
(0.00)		J. Committee of the com					Since	SHO.	(145-5114)	in cone (iic)
		_								
TIME	FLOW	DEPTH TO	TURBIOTY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
3	(mUmin) (100-500 mUmin)	(feet) (*/- 0.3)	(NTU)	OXYGEN (mg/L)	(v+ 0.17	(*,c)	CONDUCTIVITY (v/- px)*	(mV)	(describe)	(describe)
1925	300	71	74.3	0.31	6.14	17.80	731	58.3	little cloudy	none
830	300	77	39.5	0.28	6,09	17.69	730	58.1	clear	none
118.6	300	יחו	18.3	0.01	6.06	17.64	729	58.7	clear	none
		1 5 5								
		4								
-								1		
		-		-						
				-	-				-	
-						- 000				
				(
*	1 9	× *				1	•	-0		
	72-32	0.00						1.8		
O. 11 170 11		CHAIR AND ASSOCI	4-0 1004							
		n EPA/540/S-95/504	MEAN TO SE		SEAMBUNG	DATAS	SECTION 1	- M. S.	Acres 1	
MPLED BY (F	PRINT) / AFFELAT	now:	SAMI	PLERYS) SIGNATURE	11 0	0		SAMP	ING INITIATED AT:	SAMPLING ENDED AT:
MP OR TUB	NG CEPTH IN M	SAMPLE PU	NI CON PLATE (OL)	which per minuses	HELD PARAMET	ER MONITORIN	G EQUIPMENT MC	1 1.	835	
31	7		300							
LO OECONT	TAMINATION. (Y) N		D-FILTERED (V)	N FRITERS	IZE HOW			QUPLICATE	Y (N)
TEMAL CODE:	S AG = Amb	er Glass; CG > Clear		ene: PP - Polypropyl	ine. S = Silcom	7 = Tallon C =	Olter (Specify)			
		rail and	A THE RESERVE AND ADDRESS OF THE PARTY OF TH	ONDITION CHE						
	h Mount / Sta	2 23 23-1	General Condition	on: Good / Nee Is Well Pl		manip.	Good / Broke			Broken / None
Marian Committee							liser: Good			

GP-10-18 07 -4

7

Sovereign Consulting Inc. 9059 South Main Street, Suite 202 Mansfield, MA 02048

MONITORING WELL SAMPLING LOG

TRAPA

Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040

508-339-3200 413-540-0650 DEPINTO BOTTOM PROJECT NAME SHM-10-18 ACOLOO (leel) TURING MATERIAL COD (see below) PON 114" GROOMMO WELL VOLUME PURGE: I WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (GARONS PER FOOL): 0.75 = 0.02; 1'=0.04; 1.25 = 0.06; 2'=0.16; 3'=0.31; 4'=0.65; 5'=1.02; 6'=1.47; 12'=5.88
WELL SCREEN INTERVAL [INITIAL PLIMP OR TUBING DEPTH IN FUND OR TUBING DEPTH 1 GALLON = 3 785 LIYERS TOTAL VOLUME PURGED: PURGING ENDED AT: GALLONS: WELL (leet): 16-18 08:50 08:00 DEPTH TO WATER WITH PUMP. WATER LEVEL STABLIZATION (feet) TIME INTERVAL FLOW RATE DEPTH TO WATER (feet) Water Level Stable VOLUME PURGED DURING PUMP SETTINGS (Yes or No) INTERVAL (mL) (min) COLOR FLOW DEPTH TO TURBIOITY DISSOLVED TEMP SPECIFIC DOOR RATE WATER (MTU) OXYGEN (°C) CONDUCTIVIT (mV) (describe) (describe) (mL/min) (100-500 mL/m (M2/cm) (F 0.3) t-+ 10%F (+ Q17 147- 2787" 1+4 10mm 171 clear 55.6 0.47 674 400 23.50 6.14 none 0818 13.00 17' 18.50 CLEON 08 90 6.15 12.92 678 55.1 400 0.45 none 17' 473 12.87 55.8 clear none 0825 400 0.44 6.14 10.60 SAMPLED BY (PRINT) LAFFILIATION: EAMPLING DAYA OR SovCon 08:30 SAMPLE PUMP FLOW RATE (ML per minule) PUMP OR TUBING DEPTH IN WELL FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #S. 17' 400 FIELD-FILTERED (Y) FILTER SIZE ____ pm (P) FIELD DECONTAMINATION TY; N DUPUCATE Filtration Equipment Type. MATERIAL CODES AG = Ambie Glass: CG = Class Glass PE = Polyethylene PP = Polypropylene S = Sticono T = Teñon: O = Other (Specify) WELL CONDITION CHECKLIST (diedo appropriate trent(s), cross cent il not appropriate Good / Broken / None Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: idence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None dence of Ponding Around Well? Y / N Concrete Collar. Good / Cracked / Leaking / None MARKS: GP-10-18-017-4

Sovereign Consulting Inc. 905B South Main Street. Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyake, MA 01040 413-540-0650

ROJECT NA	Acono	2	PROJECTLO	Dev Dev	ens/Ay	er (2	BY 8 STAD	3/2010	SHM-10-18
OJECT NU	MBER;		WELL DIAME (Inches)		DEPTH TO WAT		(feet)	MOTTOM	PIO READ	
33.42	des com t	Section Control of the Control of th	1 365 25	2000	PURGING	DATA	as crissing a	出版的動	Mob.	2011年12日
IBING DIAM	14"	(see below)	7014	PURGE PUI	goump			PUMP EQUIPM	ENT MODEL & SERIAL I	ie.
ELF AOFAW	E PURGE: 1 WEL	L VOLUME (TOTA	L WELL DEPTH - S	TATIC DEPTH TO W	TERJ X WELL	CAPACITY		GALLONS:	to	ERS
ELL CAPACI	IY (Gallons Per Fo	01): 0.75 = 0.02; 1 INNTIAL	= 0.04; 125 = 0.00 PUMP OR YUBING DE	PTHAN TENNA PHIN	OR TURING NEE	*1.02: 6 ≈ 1.4 THIN TOURGE	7: 17 = 5.88		ON = 3.785 LITERS	TOTAL VOLUME PURG GALLONS:
EPTH (feat):		WELL (DUELL Health	6-28	1000	8:55	1100000	0:00	LITERS
WATER	CO-25	LIZATION	DEPTH TO WATER			2/1	0.52	-1-2	0.00	
TIME INTER			((tee))	PUMP SETTING	is		DEPTH TO W		Water Lovel Stable	VOLUME PURGED DU
(min)	(mL)	min)					START	ENO	(Yes or No)	INTERVAL (mL)
			-							
-										
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
1-5 minutes)*	RATE (mL/oin) (100-500 mL/min)*	WATER (lest) (v. 0.3)	(NTU)	OXYGEN (mg/L)	(*F 0.17	(*C)	CONDUCTIVITY [µ5/cm] (+/- 134)*	(mV)	(describe)	(describe)
9:00	350	27'	<1,000	1.47	630	14.45	485	-31.8	cloudy	none
9:10	350	271	509	0.45	4.30	13.71	682	-u2.7	cloudy	none
4:17	350	9.1,	199	0.44	6.30	13.55	681	-45,1	little cloudy	none
7.40										
				-	-					
										ļ
			to the body of the	-					-	
						-		-		
-					-	-		-	-	
PA stabilization	on purameters from	EPA/540/5-95/504	April 1996	L			l		L	1
MP ED BY	RINT)/AFFILIATI		is an		SAMPLING	Talks,	企业工艺 工人	SAUDI	ING INITIATED AT:	SAMPLING ENGED AT
	SOVLO		-	O SUNTURE					9:28	10:00
	NG DEPTH IN WEL	The second secon	P TLOW PATE OIL	per minute)	FIELD PARAMET	ER MONITORIN	IG EQUIPMENT NO	UEL & SERIAL		
	17'		330	FETERED: (C)	N FILTER:	SIZE: pm			The state of	61
OV. SA CIVI	Y MOITANIMA) N	Finral	ion Equipment Type					DUPLICATE	(C) "
ERIAL CODE	s AG+Anbe	Glass: CO - Creer C		ONDITION CHE	CKLIST tetrete		Other (Specify)	noscable)		
pe: Flush	Mount / Stan	d Pipe	General Condition		A 100	22 7 27 27	Good / Broke		Lock: Good	Broken / None
		tween Steel & P			umb?: Y / N		Riser: Good			
ndence o	of Ponding Area	and Well? Y	IN Con	crete Collar: G	ood / Crack	ed / Leakir	g / None			

Sovereign Consulting Inc. 905B South Main Steel, Suite 207 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way. Suite #307 Holyake, MA 01040

413-540-0650

blaticas	508-33	MA 02048 19-3200		vestic	LOW Flow Sa	mpling Ailing	- DPT		Abidas	Holyake, MA 01040 413-540-0650
A A	001 AO 9		PROJECT LO	CATION	ens/Av		2	DATE 8/8	110	SHM-10-18
DIECTHU	00) 00 2		WELL DIAMET		DEPTH TO WAT		OEPTH TO	BOTTOM	PIO READI	NG.
N. P. C.	· · · · · · · · · · · · · · · · · · ·	0.00000	(inches)	75 45 K 4 10	(leet)	BATA 2015	Special super	75.000		
BING DIAM	ETER)/4"	TUBING MA	TERIAL CODE:	PURGE PU	Ceopun	7.6	743 14 14 15 15 15 15	PUMP EQUIPM	SENT MODEL & SERIAL W	
	A		L WELL DEPTH - ST	TATIC DEPTH TO W			-	GALLONS:	Life	ns:
	, y		= 0.04; 1.25 = 0.08;	11077200000		C. C. C. CAD	17: 12' = 588	1 GALL	ON = 3,785 LITERS	TOTAL VOLUME PURG
			PUMP OR TUBING DE	PTH W FINAL PUN WELL (lee)	POR TURING DE	HH PURG	NG INITIATED AT		NG ENDED AT:	GALLONS:
in (rest).	36-34	, max ju	37	37	36 3	9 1	0:05		0:50	LITERS:
WATER	LEVEL STAB	LIZATION	DEPTH TO WATER	WITH PLIMP.						
TIME INTER			(feet)	PUMP SETTING	3S		DEPTH TO W		Water Level Stable	VOLUME PURGED DUF
(min)	(mL/s	nen)	-14		-		START	END	(Yes or No)	INTERVAL (mL)
										-
		0.7					5.5			
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	(mUmin)	WATER (feet)	(NTV)	OXYGEN (mg/L)		(.c)	CONDUCTIVITY (US/cm)	(mV)	(describe)	(describe)
6 minutes)*	(100-500 mL/min)	(44- 0.37)	[#F 10%]*	(AL 10%)	(+/- 0.1)*	(4/- 3%)*	(s/- 13t).	(+/: 10m//)*	Alan I.	
1:55	4A5	37'	531	0.59	6.38	13.71	629	-28.9	cloudy	none
:06	425	37'	3377	0.45	6.40	13.78	628	-40.6.	cloudy	none
:20	425	37'	84.7	0.44	6.40	13,61	628	-45,5	littleclody	none
		1								
			0.00						7.0	
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			-				
-		-			-	-	_			
A stabilization	on parameters from t	PAISINS-85504	Voril 1996						l	L
	With the last			建物心内部	SAMPLING	PATA		128		
PLEO BY (F	PRINT) / AFFILIATIO	IN:		LER(S) SIGNATURE		7		SAMPI	ING INITIATED AT:	SAMPLING ENDED AT:
o ou nam	Dor Co		IF FLOW BATE (ALL PI	non	1-01/	/	IG EQUIPMENT MO	DEL P CE GIAL	0:25	10:50
P ON TUBI		and the second s	2.5	a minutary	FIELD PAROME	EH MUNITURIN	NG EQUIPMENT MU	UEC & SERIAL		
				FILTERED (Y)	N FILTER	Size jim			Ollor love	. 0
	AMINATION: (Y)	N		on Equipment Type:					OUPLICATE	, 0
RIAL CODES	AG > AMG	Glass CG = Clear G	25 P. G. S. S. G. S. S. G. S.	ONDITION CHE			Oliver (Specify)	and the same		
o: Eluch	Mount / Stand	Pine	General Condition				(s), cross and I make Good / Brake		Lock: Good /	Broken / None
	Rain Water Bet				umb?: Y / N		Riser: Good /			Dionell None
AL.				The second second				3-0	477.00	
ndence o	f Ponding Arou	nd weller t	I N Cond	rete Collar: G	opo / Cracki	ed / reakir	ig / None			



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MONITORING WELL SAMPLING LOG

Vertical Positions



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ING DIAMETE	Acodi		(inches)	TER.	DEPTH TO WATE	ER-	DEPIRTO	BOTTOM.	PIU READ	SHW10-18
(cs): 1		200000			(fent)		(leci)		(spino)	
(cs): 1		ATT STORES AND	1 # 1	A 3 花 3 花 5 花 5 花 5 花 5 花 5 花 5 花 5 花 5 花	PURGING	DATA 4	が、特別と	The Common of th	ENT MODEL & SERIAL I	0.400
L VOLUME P	Ä"	(see below)	PON	PURGE PUR	DUMMO			PUMP ECCIPA	ENI MODEL A SISHAL II	
	PURGE: TWELL		L WELL DEPTH - S			CAPACITY		GALLONS	CIT	ERS
			= 0.04; 1.25 = 0.06						ON = 3.785 LITERS	TOTAL VOLUME PURC
TH (Heal):		WELL (fo	PUMP OR TUBING OF	WELL Heat?					NG ENDED AT:	GALLONS:
	EVEL STABL	PATION S	DEPTH TO WATER		16-48	- 1	0:55	1.1	1:43	LITERS:
ME INTERVA			(feet)	PUMP SETTING	is	علب	DEPTH TO W	ATER (feat)	Water Lovel Stable	VOLUME PURGED DU
(min)	(mL/m	(n)					START	END	(Yes or No)	INTERVAL (mL)
	1									
THATE	FLOW RATE (mL/min)	DEPTH TO WATER (feet)	TURBIDITY (NTU)	DISSOLVED OXYGEN (mg/L)	Hq	TEMP (°C)	SPECIFIC CONDUCTIVITY	ORP (mV)	COLOR (describe)	ODOR (describe)
	(100-500 mUmin)*	(** 927	(+F 10.Ph.	1-1- 10-57	(+/- 0.1)°	[4/- 330]*	(»/- 836)*	(4 10mV)*		
	300	471	801	0.65	6.52	15.29	and the second second	-66.2	cloudy	none
	300	47	469	0.42	6.53	14.76	791	-77.1	cloudy	none
1:33	300	471	388	0.44	6.54	14.73	809	-80.1	cloudy	none
:aT	300	47'	127	0.45	0.84	14.60	809	-80.7	little cloudy	none
SHE SE	parameters from E				SAMELING					
	SOU (ion	MP FLOW RATE (III.			ER MONITOR	ING EQUIPMENT MO		ING INITIATED AT:	11:43
L	17		300	- mount				CE DITTO		
DECONTAN	U	N	FAUTE	D-FILTERED: (T) DUN Equipment Type	N FILTERS				OUPLICATE	* (9)
AIAL CODES	AG = Amber C	State: CG - Chear I		PP = Polypropy				infortet		
ence of Ra		veen Steel & F		on: Good / Nee Is Well Pi	ds Repair umb?: Y / N	Well Caps	m(s), cross out il not a : Good / Broke : Riser: Good / ling / None	n / None		I Broken I None

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MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Squere Way. Suite #307 Holyoke, MA 01040

508-339-3200 413-540-0650 DIECT NUMBER St/M-10-19 DEPTH TO BOTTOM PID READI WELL DIAMETER (feet) (ppmv) TUBING MATERIAL CO Geopump GALLONS WELL VOLUME PURGE: I WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (GIBONS PW FOOD: 0.75 × 0.02: 11 = 0.04; 1.25 = 0.06; 2 = 0.16; 31 = 0.37; 41 = 0.65; 51 = 1.02; 61 = 1.47; 121 = 5.88
WELL SCREEN INTERVAL [INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN GALLON = 3 /85 LITERS TOTAL VOLUME PURGED. PURGING ENDED AT: GALLONS WELL SCREEN INTERVAL DEPTH (lext): TRURGING INITIATED AT 14:18 8-10' 13:40 LITERS 6-10 WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP (feet) TIME INTERVAL FLOW RATE Water Level Stable VOLUME PURGED DURING PUMP SETTINGS DEPTH TO WATER ((col) (Yes at No) INTERVAL (mL) START (min) TIME ROW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR DOOR RATE WATER (NTU) OXYGEN (°C) CONDUCTIVIT (mV) (describe) (describe) (mL/min) 0-600 mL/m (mg/L) (feet) (us/em) (+/- 10%) in air (1)- 316)* (+/- 10mV) 10/- 5W 19:45 9 80.7 lattle cloudy .05 177 11.9 300 00. 3.46 nono 91 93.7 2.83 3.42 18.08 175 clear 300 5.87 816F none 98.5 91 Chear 300 6.85 17.73 174 M:09 1.10 3.65 none SAMPLED BY (PRINT) (AFFICIATION SAMPLEDS) SIGNATURES SAMPLED AT SAMPLING ENOED AT 14:05 14:18 SONCO PUMP OR TUBING DEPTH IN WELL S QIL SAMPLE PUMP FLOW RATE (IIIL per minute) FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #S. 300 FIELD FILTERED (Y) FILTER SIZE _____IM FIELD DECONTAMINATION: (V) N DUPLICATE ര " Metals Fill abon Equipment Type: AG = Ambel Glass; CG = Clear Glass PE = Polyalhylene: PP = Polypropylene, 5 = Sicone: T = Takon: O = Other (Specify) WELL CONDITION CHECKLIST (code appropriate non(s), cross out it not approache) Type. Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lacks Good / Broken / Nane Hence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None dence of Ponding Around Well!? Y / N Concrete Collar: Good / Cracked / Leaking / None HEMARKS: DUP-080310-F

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MONITORING WELL SAMPLING LOG



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SHM-10-19 8/3/10 40001.002 (feet) inches) PURGING DATA A TOTAL THE TIPE TURING DIAMETER TURING MATERIAL CO. (see below) PON ""一个","一个" Geopwhp WELL VOLUME PURGE: 1 WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY GALLON = 3.785 LITERS WELL CAPACITY (GANORS PER FOOL): 0.75 = 0.02 1' = 0.04: 1.25 = 0.06: Z' = 0.18; 3' = 0.37; 4' = 0.65; 5' = 1.02; 6' = 1.47; 1Z' = 5.88 TOTAL VOLUME PURGED: INITIAL PUMP OR TUBING DEPTH IN WELL (feet): FINAL PUMP OR TUBING DEPTH IN WELL (loci) PURGING ENDED AT: GALLONS: 145-20 TITERS. 14:24 15:10 WATER LEVEL STABLIZATION DEPTH TO WATER WITH (feet) PUMP SETTINGS DEPTH TO WATER (feel) Water Level Stable VOLUME PURGED DURING INTERVAL (mL) (Yes or No) (mL/min) START END TURBIDITY DISSOLVED TEMP SPECIFIC ODOR DEPTH TO FLOW CONDUCTIVITY (describe) RATE WATER INTU OXYGEN ('C) (mV) (describe) (mg/L) (mUmin) (100-500 mUm (feet) (4/- 821)* (A. O.1) (-/- TK) (+/- 10mV) (3-5 mirates) little clouds 191 14.83 744 1.96 96.9 14:35 601 non 350 561 191 little cloud 2.02 6.03 5.18 754 87.7 350 317 none 14:42 191 clear 14:20 350 188 2.10 16.34 756 88.4 none 6.02 191 759 90 LI none 14:00 141 2.19 6.01 14.88 clear 350 EPA stabilization parameters from EPA/540/S-95/504 April 1996 SAMPLING DATA:

SAMPLEG BY (PRINT) / AFFILIATION:

5:00 PUMP ON TURING DEPTH IN WELL SA 15:10 SAMPLE PUMP FLOW RATE (mt per minute). FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERVIL III 19 PIELD-FILTERED (V) FILTER SIZE ____ IIM FELD DECONTAMINATION: DUPLICATE (14) MATERIAL CODES AG = Amber Glass: CO = Cloar Glass PE : Polyelinjana PP = Polygrapylana S = Sicona T = Tallon: O = Other (Specify) WELL CONDITION CHECKLIST (circle appropriate tiern(s), cross out if not applicable) Type: Flush Mount / Stand Pipe Lock: Good / Broken / None General Condition: Good / Needs Repair Well Caps: Good / Broken / None "fence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None dence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None HEMARKS: GP-10-19-019-K

7

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MONITORING WELL SAMPLING LOG



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Harista		MA 02048 9-3200		110-11	LOW Flow S	ompling 1081/12	C. DPT		LEMAS	Holyoke, MA 01040 413-540-0650
PROJECT NA	Arcol C	20	PROJECT LO	CATION	wers	ALLY	9	OATE 8/3	110	SHM-10-19
DECT NU	MBER:	200	WELL DIAME (inches)	A Table of the Control of the Contro	DEPTH TOWA	IPG PAI	DEPTH TO	BOTTOM:	PID READ (ppmv)	
19.2569	W	WW.	7 WAS 25	72.42.48	A STATE OF THE PARTY OF THE PAR		SAME ENTRE	115,210 An		
JBING DIAM	1)4°	TUBING MA	PC LV	PURGEPL	260PMM			PUMP ECKUPM	ENT MODEL & SERIAL	is:
ELL VOLUM			AL WELL DEPTH - S					GAILONS:	i un	ERS:
		4) 0.75 = 0.02;	1' = 0.04; 1.25 = 0.06	2 = 016; Y = 0	37. 4' = 0.65, 5	=1,00; E=1.4			ON = 3.785 LITERS	TOTAL VOLUME PURG
EPTH (leet):	NINTERVAL	WELL (PUMP OR TURING DE	WELL (feel	1		NG INITIATED AT:		NG ENDED AT:	GALLONS: LITTERS:
	1630 RLEVEL STAB	LIZATION	DEPTH TO WATER	29	28-30	2	1520	1 13	5:55	Citeria:
TIME INTER	We of Confederation	CALLONDO	(feet)	PUMP SETTIN	ce		DEPTH TO W	ATER (Incl)	Water Level Stable	VOLUME PURGED DUR
(min)	(mille			TOME SETTING	-	* .	START	END	(Yes or No)	INTERVAL (mL)
-	-	-+-					-	-		
-	-			~			-		- 1	
	_				_			17.2		
		4.1								
IME	FLOW RATE	DEPTH TO WATER	TURBIOTTY	DISSOLVED	pH	TEMP	SPECIFIC CONDUCTIVITY	ORP (mV)	COLOR (describe)	ODOR
on owners with	(mV/min)	(feel)	(NTU)	OXYGEN (mg/L)		(.c)	(#5/cm)		(describe)	(describe)
5J5	400	94,	144	0.47	6.60	14.54	683	-104. 2	clear	none
530	400	091	167	0.4R	6.61	14.08	482	-108.9	clear	none
540	400	291	79.0	0.48	6.63	13.97	693	112.8	clear	none
545	400	291	64.6	0.53	6.64	13.88	(82)	-111.0.	CHOI	word
,	HOU		24.16	0.5	- 04	100		1111	Citat	10.4
	122									
				7						
								1		
-1	- V	4	b				100			
A stabilization	on parameters from t	PA/540/5-95/504	W-107-207-10-10-10-10-10-10-10-10-10-10-10-10-10-	ALCO DE M	SAMPLING	EPATAS:		1.000	According to the	4. 1. 6. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
APLED BY (RINT) / AFFILIATIO	N:		LER(S) SIGNATURE		STEEDING STATES	The state of the s	SAMPL	ING INITIATED AT:	SAMPLING ENDED AT
	ONCO	1		- OK					5:48	15:55
IP OR TUBI	7 <i>G</i>	and the second of the second of the second	100 rate (ml p	er mounts):	FIELD PAPLAME	TER MONITORIN	IG EQUIPMENT MO	DEL & SERIAL R	5	
	AMINATION: (P)	"		FILTERED C	N FILTER	SIZE:im			DUPLICATE	· 4
				on Equipment Type			An in Factor		DUPLICATE	* 0
ERIAL CODES	AG = Ambie	Gless, CG - Chart		ONDITION CHE			(s), cross out if not a	ppocat/oj		
e: Flush	Mount / Stand	Pipe	General Conditio				Good / Broke		Lack: Good	Broken / None
	Rain Water Bet	The State of State of the State	4.500		umb?: Y / N		Riser: Good			S. S. Charles and M. S. Charles
	Ponding Arou	nd Welli? Y	I N Cond	rele Collar: G	lood / Crack	ed / Leakin	g / None			
MARKS:		101	10.10	200-0		-				
		01-1	0-19-0	101-						



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MONITORING WELL SAMPLING LOG

Vertical Positing - DPT



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HOSECT NO.	ACOOL-	202	PROJECTICA	Dev	ens/A	per 1	7	8/3		SHM-10-19
OJECT NUM	ABER:		(Inches)		DEPTH TO WAY		DEPTH TO		PIO REA (ppmv)	
BWG DIAME	ANS VIEW 4	True Mc M	ATERIAL CODE	[PURGE PU	PURGING	DATASESE	使機器13 次	Terring Correct	ENT MODEL & SERIAL	第二人员工员
nes):	1)4"	(see below)	Poly		RODUME			43, 1, 43, 7		
IT AOTOM	E PURGE: 1 WELL	VOLUME: (TOT	AL WELL DEPTH - S	TATIC DEPTH TO W	TER) X WELL	CAPACITY		GALLONS		ITERS
	IY (Gallons Per Foot		1" = 0.04; 1.25" = 0.06; PUMP OR TUBING DE					The second second	ON = 3.785 LITERS NG ENDED AT:	GALLONS:
PTH (feet):		METT !		METT (leet)	-40'		16.00		6:50	LITERS:
WATER	16-40	LIZATION	DEPTH TO WATER		700	07	10.00		0.00	
ME INTER		24.00	(feet)	PUMP SETTING	S		DEPTH TO W	ATER (feet)	Water Level Stable	VOLUME PURGED OU
(min)	(mUm	in)	-	*	,		START	END	(Yes or No)	INTERVAL (mL)
-			*	*				-	111-	1
TME	FLOW	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	pH	TEMP (°C)	SPECIFIC	(mV)	COLOR (describe)	OOOR (describe)
men ex	(mUmin)	(fect) (#- 0.1)*	(+/- 10%)	(mg/L)	(+A 0.15	[+A- 310]*	(NS/cm)	(e/- 10mV/r		100 0000
21.'a	275	31	67.9	1.30	6.61	15.58	738	-85.5	Clear	none
62.0	275	39'	42.3	1.48	(0.6)	15.47	748	82.1	CKON	none
6:26	275	39'	36.6	1.65	6,60	15.59	736	-77.7	clear	none
		- ,	30.10			1	135	1		1.012
			1							(+
-11										
										1 = -
						V.				
							7.		A Company	
		**	1						1.57	
-	on parameters from E		60 8 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		EAMPLING	BATAS	6 13 10 1	1	Sala Zivili V	The state of the s
PLEO BY (F	RHY) / AFFILIATIO		SAMP	GVZ	S.		Thinks The same and		16:30	SAMPLING ENDED AT:
PAR THE	SON CO		MP FLOW KATE (IIIL p			res weren com	G EQUIPMENT MO			16:50
,3	39	Santero	275	ex minutes.	PIEZE FAROME	EN MONTORIN	G EGGIPMENT NC	DEL & GENIAL	m3.	
DECONTA	MINATION: (Y)	N		FILTERED (Y)	N FRIER	SIZE			DUPLICATE	1 (1)
RIAL CODES		iless: EG = Cleor		on Equipment Type ne: PP = Polypropyle	ni. S.i.Sicone	To Tellow D.e.	Other (Special)			0
		oc 70.0		ONDITION CHE				opticable)		
ence of F		veen Steel & F	General Conditio	n: Good / Nee Is Well Pl	ds Repair umb?: Y / N	Well Caps: PVC F	Good / Brake Riser: Good	en / None		/ Broken / None
MARKS:			/ N Cond			ed / Leakin	g / None			
		GT-10	D-194-0	39-L	(
			200	t						



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MONITORING WELL SAMPLING LOG



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	508-33	3-3700		NEZ MO	71 HOX	ilms-	DAI			413-540-0650
AA COBCO	000000	2	PROJECT LO	Delle Delle	ens/Au	er o		BE STA	3 10	SHM-10-19
OJECT NUM	IBER:		WELL DIAME (inches)		(feet) L	TER.	(test)	MOTTOM	(ppmv)	ING:
	144 (34) 字	10 M	5 345 23	7. 22 3.83	PAURGING		14-5 TEPS	Tage Small	STATE OF THE	· 1000 1000 1000 1000 1000 1000 1000 10
JBING DIAME	IU "	TUBING M	ATERIAL CODE	PURGE PU	OPLUMP			PUMP ECUIPM	ENT MODEL & SERIAL	rs:
			AL WELL DEPTH - S			CAPACITY		GALLONS:	Jen Jen	ERS
		(): 0.75 = 0.02;	V = 0.04; 1.25 = 0.06	2 = 0.16 3'= 0:	7: 4° = 0.65; 5	= 1.02; 6° = 1.4	7; 12 = 5.86		ON = 3785 LITERS	TOTAL VOLUME PURG
EUL SCREEN EPTH (feet):	INTERVAL	WELL	PUMP OR TUBING DE	PIH IN FINAL PUM WELL (lee)	Printed to the State of			110000	NG ENDED AT:	GALLONS:
	15-47		40	46	45-4	71	6: 55	- 1	7:35	LITERS:
WATER	LEVEL STAB	WEL (1827)	DEPTH TO WATER (feet)	WITH PUMP:						
TIME WITER (min)	VAL FLOW			PUMP SETTING	is	3 a	DEPTH TO W	ATER (feet) END	(Yes of No)	INTERVAL (ml.)
	11				3500					
	1111									
TIME	FLOW	DEDATION	Timmore	DISSOLVED		T WELL	SPÉCIFIC	ORP	COLOR	DDOR
	RATE	DEPTH TO WATER	TURBIOITY (NTU)	OXYGEN	pH	(°C)	CONDUCTIVITY	(mV)	(describe)	(describe)
3-5 minutes)*	(mUmin) (100-500 mUmin)	(feet) (v/- 0.3)*	(+A 10%)*	(mg/L)	mr air	(+/- Tk)-	(M2/cau)	(+/- street/)		
7:04	300	461	4,000	1.73	6.49	14.63	737	-26.3	cloudy	none
7:13	300	46'	41,000	1.83	6.51	14.45	739	-48.0	cloudy	nane
7:a0	606	46'	<1.000	1.88	6.50	14.58	737	-44.1	Cloudy	none
			7,000	1.00	0.50	1				1
							-	-		
-				-	1					
_					-					
		-	-	-		-				1
-						-			-	
-	-	-								
\rightarrow		-	-							-
		-				-	-		-	
-		-	-							
-		-		-				i e		
_										
										-
					×					
A stabilization	n parameters from t	PAISAUS-99504	April 1996		S ASAMPLING	FREE	270000000000000000000000000000000000000		15. 12. TW.	· · · · · · · · · · · · · · · · · · ·
MPLEO BY (P	RINT) / AFFILIATIO	_	SAMI	LERIS) SIGNATURE		MOND A.Z	Section 1	17.	ING INITIATED AT	SAMPLING ENDED AT
	Sov			dic					7:28	17:35
10	G DEPTH IN WELL		MP FLOW RATE (ML p	er minute).	FIELD PARAME	TER MONITORIN	G EQUIPMENT MO	DEL & SERIAL I	ls:	
	6		ÓÒ (FIELD	FILTERED: (Y)	N FILTER	SIZE:im			T.	
DE + X.X.+-1.3	MINATION: (E)	N		on Equipment Type:	, include	pilt.			DUPLICATE	· (E)
ERIAL CODES	AÜ = Amber	Glass: CG • Crear	2 C _ D _ D _ D _ D _ D _ D _ D _ D _ D _		ne 5 = Sécone		Other (Specify)			
	1	of an	The second of the law was	ONDITION GHE		3.0 w woman a			9.2.00 (840.5)	A Marian Company
	Mount / Stand	E15. 7	General Condition PVC? Y / N				Good / Broke			Broken / None
dones at c		VEEL SIEEL &	VLZ TIN	is well Pl	mb?: Y / 1	PVCH	liser. Good /	Damaged	1 LADUE	
	Ponding Arou			trete Collar: G	ond / Crack	ed / Leakin		14.00		

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OJEC I NAM	141		PROJECT LO	SHM	POS1	0	Motos	DATE SE	5/10	Sam-10-1
OJECT NUN	DER.	0	WELL DIAME		DEPTH TO WAT	er u	DEPTH TO	COLION	PID REA	DING
A	cona	10	(loches)	Program design	PIDECING	DATA	(feet) (Q	- Tel	O (tour)	O O
BING DIAME	TER 58	TUBING MA	TERIAL CODE	PURGE PUM	Bladel	or Ct	inters	PUMP EQUIPM	ENT MODEL & SERIAL	
-	12		LWELL DEPTH - 5				JA 02	GALLONS	ju	TERS
			"= 0.04: 125 - 0.06				12"=580	1 GAULO	ON = 3.785 LITERS	TOTAL VOLUME PURC
LL SCREEN			PUMP OR YUBING DE		OR TUBING DEP		GINITIATED AT		IG ENDED AT	GALLONS: 3. 5
PTH (leel):	38-40	· · ·	39	, receptor	39	111	:SOAM	16	220	LITERS:
WATER	LEVEL STA	BLIZATION	DEPTH TO WATER	WITH PUMP 3	8-1					•
THE INTER		RATE	Heen	PUMP SETTING			DEPTH TO W		Water Level Stable	
(nim) (1:50		Imin)	CPM / 75	psi			39.46	END	N(A	INTERVAL (ml.)
19:00				أدو	-		39.69		Do	NIA 4Lites
19:10				PSi			39.92		Yes	
19.10	7,3	3	101111	421			-1.10		1-0	
							P.Section			
TIME	FLOW	DEPTH TO	TURBIDATY	DISSOLVED	рН	TEMP	SPECIFIC	ORP	COLOR	OOOR
	(MUMIN)	(feet)	(UTU)	DXYGEN (mg/L)		(°C)	CONDUCTIVITY	(mV)	(describe)	(describe)
-5 minutes)*	(100-500 mL/min		(*/- 10%)	(+/- 10%)*	(H. 0.1)*	(0/- 196)*	(4/- 5%)*	(** 10mV)*	2021	1 1 1 1 1 1
155	400	39.46	959	496	6.64	19.68	307	171.0	CLOY	None
91,00	400	39,69	47.4	9.11	6.06	18.49	302	160.3	CUOY	None
9710	350	39,92	27.6	0.87	5.72	6.90	100	95.1	Clear	none
215	350	39.93	18.7	0.60	5.66	16.40	301	68.4	Olev	Thre
220	220	39.92	MS	0.44	5.61	1626	302	57.2	Clu	Ton
										ļ
		m EPA/\$10/S-99/504		- Village of the Control of the Cont		TOTAL STREET				
	PRINTI/AFFILIA	KN	SAM	PLER(S) SIGNATURE	SAMPLIN	DATA	m 250 s	SAMPL	ING INITIATED AT	SAMPLING ENDED AT
MP OR YUU	ELR 3	ٺ	IMP FLOW RATE (mL	4	0 6	TER MONITOHIN	IG EQUIPMENT MC		1225	1250
e()/	39		250							
LO DECON	FAMINATION: (DN		D-FILTERED Y	N FILTER	SIZE: IIM			2 VAL	O N
TOTAL CODE	S AG = Am	by Girst CG + Okt		one PP - Polyanopyli	m. 5 = Silicone	T = Tellon, O =	Other (Specify)			
			WELL C	CONDITION CHE	CICLIST (oral	appropriate kem	(s), crass out il not a	applicable)		
pe: Flus	h Mount / Sta	ind Pipe	General Conditi	on: Good / Nee	ds Repair	Well Caps:	Good / Broke	an . / None	Lock: Good	/ Broken / None
dence of	Rain Water E	letween Steel &	PVC? Y / N	Is Well PI	umb?: Y / I	V PVC F	Riser: Good	Damaged	/ None	

Sovereign Consulting Inc. 905B South Main Street, Suite 202 Mansfield, IAA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoks, MA 01040 413-540-0650

OJECT NAME	508-33	-3200	PROJECT LO	Verma	CA Pr	Miline	Poto	DATE	10	413-540-0650
	SHL			SHIN-10	11-1		0	810	5/10	SHM-10-11
AA	001006	2	(inches)	4"	DEPTH TO WATE (finel)	9.01	(feet)	50	(ppmv)	NA
规则是一	2 2 3		1 4 T		PURGING	DATA	CONTROL V	Man Towns	. 800	VI. The See
per)	5/8	(see below)	TERIAL COSE	PURGE PUR	der/ Sta	nless S	Yell	PUMP EQUIPMS	ENT MODEL & SERIAL I	
LL VOLUME	PURGE: 1 WELL		L WELL DEPTH - S	1000				GALLONS	U	ERS:
			= 0.04. 1.25 = 0.06						N = 3.785 LITERS	TOTAL VOLUME PURGE
PTH (leet):	INTERVAL	WELL (PUMP OR TUBRIC DE set):	WELL (foot)		7.0.324			G ENDED AT:	GALLONS 3.5G
	48-57		49	X. 9	49		1340	1.	1:30	LITERS
WATER	LEVEL STAB	LIZATION	DEPTH TO WATER (feet)	WITH PUMP:						
IME INTERI	VAL FLOW F			PUMP SETTING	is	. D	DEPTH TO W	ATER (feel) END	Water Level Stable (Yes or No)	VOLUME PURGED DUR INTERVAL (ML)
13:50			em / 120	Dosi			40.01			-
13:55				Opsi			40.01	39.41	No	NIL
1-L: 10	3000			Opsi			39,41	39.35	Amost	N/C
TIME	FLOW RATE	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	На	TEMP (°C)	SPECIFIC	ORP (mV)	COLOR (describe)	ODOR (describe)
	(mUmin)	(feet)		(mg/L)		Comment of	(µ5/cm)		10000000	(DESCRIBE)
L. Minutes)	250	76 70	26 46	0 20	(46 0,1)°	11.14	874	(+/- 10mV)*	12.	0
1:00		39. 70		0.20	6.05	80.40			1000	1/2×
1005	250	39.15	3319				275	-41.8	asily	ine
1:10	960	39.35	5807	0.53	6.35	15.94	274	-45.1	addy	None
1115	300	39.45	6105	0.20	6.19	18.46	274	-43.4	Clay	Me
4130	300	37.31	5373	0.37	6.30	18.09	278	-43.7	Clarky	None
						-				
										P
									-	
	_									
-						-	-			-
-										
		0.20				1	100 T		-	
	* 1					-				
	Table 1	sources come	1101001	L,						d
	on parameters from			Markey College	SAMPLING	DATA	2-300-89-7-Y	1 M 1 M 1 M	Not in call the	
MPLED BY (F	PRINT) / AFFILIATIO	N:		PLER(S) SIGNATURE		Service S	Section of Co. 10 (8)	SAMPL	ING INITIATED AT	SAMPLING ENDED AT
	, 32C			Zecl)	-8-				(:95	14:50
We .	NG DEPTH WEL	The state of the s	MP FLOW RATE INL	Co. Comp.	FIELD PARAMET	UR MEKITOMM	G EQUIPMENT MO	OCL & SERIAL	4:	
4	9'	30	JONLI MI	D FILTERED Y V			cal sh	XILI	1	75
LO DECONT	AMINATION (Y)u		tion Equipment Type	Both	SISE 'H2.			DUPLICATE	() «
TERIAL CODES	S AG - Annoni	Water CG + CHM				T=Tellon Q.				
	W. House V	1		CONDITION CHE			Accessed to the second			V 100 / 100
	Mount / Stand			on: Good / Nee			Good / Broke			/ Broken / None
Mence of	Rain Water Bel	ween Steel & I	PVC? Y I N	Is Wall Pl	lumb?: Y / N	PVCF	Riser: Good	Damaged	/ None	
	A Character A	A SATURDAY AND	/ N Cor		CONTRACTOR	a Francisco				

Sovereign Consulting Inc. 905B South Main Street, Suite 202 Mansfield, MA 02048

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyake, MA 01040

1914 474 8	Mansfield, A 508-339			V	leshed	LOW Flow Sam		otason	IC	444474	Holyake, MA 01040 413-540-0650
OJECT NAM	th	3000		PROJECT LOC	MON					3/2010	Stm-10-11
MECTHUM	BER:	-	_	WELL DIAMETE (inches)	Hull	DEPTH TO WATE	R	DEPTH TO	BOTTON	PID REA	DING
The second second	00.003	¥ 35 5	5 0.6	(mans)		PURGING		(Joen	60'		0
ING DIAME	TER 5 (8		MATERIA	CODE	PURGE PUM	L HALLE	-	A TO SHOULD CARRY		ENT MODEL & SERIAL	A:
	PURGE: 1 WELL			PE ST	3		ADACITY		GALLONS	To	ITERS
	Y (Gaßons Per Foot	201				204011111111111111111111111111111111111		12' = 5.86	1 GALLO	N = 3.785 LITERS	TOTAL VOLUME PURC
	INTERVAL	(NI)			THIN FRALPUMP					IG ENDED AT:	GALLONS 2 Gold
formit	58-6C)		59.0	100000	59.0	1	5:36	16	5:30	LITERS:
WATER	LEVEL STABL	JZATION	DEP (lest)	TH TO WATER I	VITH PUMP:						
ME INTER	VAL FLOW R		Heer	-	PUMP SETTING	3		DEPTH TO W		Water Level Stable (Yes or No)	VOLUME PURGED DU
151			PM	4 *				47.56	END	Yes	NA
	700		A 101	*				14.50		102	198
			-								
TIME	FLOW	DEPTH	124	TURBIOITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	DOOR
	RATE (mL/min)	WATER (feet)		(NTU)	OXYGEN (mg/L)	Sec.	(°C)	CONDUCTIVITY (µS/cm)	(mV)	(describe)	(describe)
5 minutes)*	(100-600 mL/min)"	1.1. 0.3)		(ef- 10%)*	(45- 10%)*	(+4- 0.1)*	(4)- 3041*	[+/- 5%]*	(*/- 10mV)*	- 60	
555	300	42.9	2/	53	2.9	6.31	22.43	353	-54.2	Charly.	none
100	300	428	_	06.2	1.07	6.30	22.34	327	-333	Clary	1 me
.05	300	_		13	1,55	6.38	2243	353	-43.6	Cloudy	Done
010	300	41.6	3	134	1.33	6.29	22 75	354	31.7	Clarke	None
015	200	41.20	\mathbf{i}	203	0:78	630	24.09	354	-46,3	Mill	1 none
See A. V.	on parameters from			1.00	LERIS S NINATURE		DATA		SAMPL	ING INITIATED AT	SAMPLING ENGED AT
Jones	2m Che	1.			100	2	11	?	-	1625	18:00
	NG DEPTH IN WEL			OWRATE HILD	or markets)	FIELD PARAMET	R MONTORING	G EQUIPMENT MO	DEL & SERIAL I		
	FAMINATION (Y	1)	0	FIELD	FILTERED Y	N FILTERS	VE SS jini			DUPLICATE	, 0,
ERIAL COUR		Glass CG :	Clear Glass		on Equipment Type on. PP × Polypropyle	on S. Sicona	T = Tellon O =	Other (Specify)			
		-		WELL C	ONDITION CHE	CKLIST (order	appropriate sem(s), cross out if not a	pplicable)		
dence at	h Mount / Stand Rain Water Bet of Ponding Arou	ween Stea	A PVC	TYIN	7.7.7.4.4.4.	umb?: YIN	PVC R	Good / Broke liser; Good g / None			VA

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MONITORING WELL SAMPLING LOG

Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040 413-540-0550

ROJECTHAN	EZU		PROJECT LOC		A 110	Hling-	1 10 rue	DATE VI	4/10	WELL ID
OJECT NUM	SHL		WELL DIAMETE		DEPTH TO WAT	ER.	DEPTH TO		PID READ	SHM7-10-11
<i>J</i>	1001 00		(inches)	-	(feet) 60.85	,	(feet)	or shows in	(ppmv)	
BING DIAM	EIER 1/	TUBING M	LIFRIAL CODE	PURGE PU	PURGING	DATA	16.6 11.6	PUMP EQUIPME	ENT MODEL & SERIAL	a de la companya della companya della companya de la companya della
ches).	79	(see below)			-	Stunle	23	GALLONS:	lur	ERS.
	or to make the total	ALLENDANIES BUTTO	AI WELL DEPTH - ST	O SALAR TO TAKE	A COUNTY OF THE ASS.					_
ELL SCREEN		INITIAL	V = 0.04; 1.25' = 0.06; PUMP OR TUBING DEP	THIN FINAL PUM	P OR TUBING DE	= 1.02; 6" = 1.4: PTH IN PURGIN	G INITIATED AT		IN = 3 785 LITERS IG ENOED AT:	GALLONS: ~2.5
EPTH (feet)	3-65	METT	64	WELL (feet)	64		0920	O	945	LITERS
	LEVEL STAB	LIZATION	DEPTH TO WATER V	VITH PUMP:	0 1		-10		710	
TIME INTER	IVAL FLOWI	TATE	(feet)	PUMP SETTING	s		DEPTH TO W	ATER (feet) •	Water Level Stable	VOLUME PURGED DUF
(min)	1 Octo		0011	16 . 1.	2 2	1	START	END	(Yes or No)	INTERVAL (mL)
CG3	3 200	, ,	om 4/	10.0/5	. 0		60.29		Yes	
					_					
		-					-			
_										
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	рН	TEMP	SPECIFIC	ORP	COLOR	DOIDE
	RATE (mVmin)	WATER (feet)	(NTU)	OXYGEN (mg/L)		(.c)	CONDUCTIVITY (µS/cm)	(mV)	(describe)	(describe)
3-5 minutas)*	(100-500 mL/min)*	(*/- 0.3)*	(4/- 10%)*	(++ 10%)	(HL 0.15"	(4/- 3%)*	10/- 324"	(*/: 10mV)*		100
925	200	60-10	> Inshument	0.18	7.85	20.15	425	-53.0	Silf	None
930	200	60.70	> Instrument	0.10	7.69	19.55	425	-99.9	Sily	1012
435	200	62.57	Plastward	0.09	7.70	19,31	428	-115.1	SILTY	NONE
1940	200	63.25	Mashument	0.06	7.71	19.42	436	-126,5	5144	NONE
1945	200	63.30	7 Instrument	0.11	7.74	20.99	439	-150.7	SILTY	NONE
2										
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		T								
				_						
			-							k
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		-			-	-		-		
-				200		-		3, -		-
		-		-	-	-			*	10
	on paramoters from		April 1990	Marie 1965 and	SAMPLING	Thata:	232.00g	17 W. S.	All to get the first	The Part Societies
MPLED BY	PRINTI / AFFILIATIO	I AI	SAMPL	ERISI SICHATURI	5	11	1		NG INITIATED AT	SAMPLING EMOED AT
Juni		atter		11	11	w			7750	1305
MP OR TUE en	NG DEPTH IN WEL	L SAMPLE PL	INIP FLOW RATE (IIIL pe	maye)	O PARAME	TER MONTORIN	G EQUIPMENT MO	DEL & SERIAL A	¢:	
	67	1	AW INELD	FILTERED:	N FRITER	Size 95 jun			mater	20
TO DECOM	TAKIWATION (Y)	4.136.65	Equipment Type	, , , ,		ž.		OUT DE LE	(C) "
TERIAL CODE	9 AG < Ambes	Glass: CG • Clea					Other (Spec 4y)	100000		-
- A	V March Company	1.64					e), cross out il not a		Luck and	Manan Walter
	h Mount / Stand		General Condition				Good / Broke			Broken / None
	of Ponding Arou		PVC? Y / N / N Conc	is Well Pi	umb?: Y / h		Riser: Good / n / None	цапта де0	None	
rucines	S. C. SHARLING PHOL	THE RESIDENCE TO		Sie Sollar. C	Jour L Place	FA C FEGVIL	g / 1,401 fc			



Savereign Consulting Inc. 905B South Main Sireel, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way. Suite #307 Holyake, MA 01040 413-540-0550

AC001-002 EQUIPMENT MODEL & SERIAL # (see below) Poly (Inches) 1/4 W Geenimp GALLONS WELL VOLUME PURGE: 1 WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Fool): 0.75 = 0.02; 1' = 0.04; 1.25 = 0.06; 2' = 0.66; 3' = 0.37; 4' = 0.65; 5' = 1.02; 6' = 1.47; 12' = 5.86 1 GALLON = 3.785 LITERS TOTAL VOLUME PURGED. INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN PURGING INITIATED AT WELL (feel) PURGING ENDED AT GALLONS: 9:13 8-10 8:01 UTERS WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP FLOW RATE TIME INTERVAL DEPTH TO WATER (feet) Water Level Stable VOLUME PURGED DURING PUMP SETTINGS (mL/min) (Yes or No) INTERVAL (ML) FLOW DEPTH TO TURBIDITY DISSOLVED SPECIFIC COLOR TEMP ORP ODOR RATE WATER (NTU) OXYGEN ('C) CONDUCTIVITY (mV) (describe) (describe) (mit/min) (100-500 mt/m (fent) (mg/L) (u5/cm) (+/- 10%)* (+ 0.1)° (v/ 10mVT (3-5 miradea)* q١ 95.9 264 clear 8:09 300 75.6 7.10 16.0 1600 none 91 8:17 300 25.1 69.6 6.18 16.39 260 79.6 clear none 300 91 clear 604 4.22 262 12.5 6.46 14.70 non 8:55 SAMPLED BY (PRINT) APPRIATION: SAMPLED SIGNATURES

SOUCCO SONCON 8:50 9:13 PUMP OR TURING CEPTH IN WELL SAMPLE PUMP FLOW RATE (ml. per minute) FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERVL No. FIELD FILTERED (Y) FILTER SIZE: ___ IIM FIELD DECONTAMINATION: 🙆 N 0 DUPLICATE Filtration Equipment Type MATERIAL CODES AG # Amber Class: CO - Clear Class PE - Polyellyleine, PF - Polypropyleine, B = Sicone T = Tallom, O = Ditter (Specify) WELL CONDITION CHECKLIST (chole appropriate terrifs), pross out it not implicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Hence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None dence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None GP-10-20-009-F REMARKS:

بمر

Sovereign Consulting Inc. 9058 South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Squere Way, Suite #307 Holyoke, MA 01040 #13-540-0650

Mansfield. 508-33	T. CORPORT		West.	Low Flow San	enilor	TRT		Lines	Holyake, MA 01040 413-540-0650
A AN A	10	PROJECT LO		A. T. A. S. S. S. S. S.		P1.	DATE	M	344-10-30
WHER	00		TER		R			PIDREAD	
DE PRESE	44252	The second secon	V 10 10 10 10 10 10 10 10 10 10 10 10 10		DATA BASA		TIES PERSONAL PROPERTY OF THE PERSONAL PROPERT	The second secon	
ETER	TUBING MA	TERIAL CODE	PURGE PUI	AP TYPE:		1410 1510 1-11	PUMP EQUIPM	ENT MODEL & SERIAL	h
COURCE I WELL		-	TARC DECEM TO W	The second secon		_	GALLONS:	100	ERS
						17 = 5.88	1 GALL	ON = 3.785 LITERS	TOTAL VOLUME PURG
NINTERVAL	INITIAL	PUMP OR TUBING DI	PIH IN FINAL PUM	OR TUBING DEP	HIN PURGIN	G INDIATED AT	PURGI	NG ENDED AT:	GALLONS:
1620	(July)	19	19		- '	1:23		10:00	LITERS:
	JZATION		WITH PUMP:						
		Iberd	PUMP SETTING	is .	7 - 10			Water Level Stable	VOLUME PURGED DUF
Tologi						SIPALI	Line	() 55 51 1157	WASTAN THE
				-				2	
							-	2/	
FLOW	DEPTH TO WATER	TURBIOITY (NTU)	DISSOLVED	pH	TEMP ("C)	SPECIFIC	(mV)	Acres and the second second	ODOR (describe)
(mL/min)	(feet)	- Comme	(mg/L)		-	And the second s			
				-				Char	None
								clear	none
							-		none
		17.5	C 25.	6.01	14.55	401	36,0		175700
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				11			1		
				· ·				y	
or perometers from E	PA/540/S-95/504		es a saveridad por	LE LE NAME PROPE	HATAR	STEEL STEEL ST	200,200,20	W.J. & 28.3%	TO CONTRACT
RINT) / AFFILIATION	A. Consideration of the second				HORNES IN	indicate of the	SAMPL	ING INITIATED AT:	SAMPLING ENDED AT
SONCO	n-		JR					1:45	10:00
NG DEPTH IN WELL	110000000000000000000000000000000000000		per minuta).	FIELD PARAMETE	ER MONITORING	S EQUIPMENT MO	DEL & SERIAL	ls	
19	1 4		Su tegen (V)	y paren e	06				
AMINATION (V)	N	1135		PRIEKS)	in line			OUPLICATE	O metals
AG = Amber E	Silven: CG - Chear		the PP = PolypropyM			Other (Specify)			- Maria
	Start of the	WELLC	ONDITION CHE						-,
4						water to the second of	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Mount / Stand			on: Good / Nee			Good / Broke			Broken / None
Mount / Stand Rain Water Betw	veen Steel & F	PVC? Y / N		umb?: Y / N	PVC R	iser: Good			/ Broken / None
	PLOW PATE (mulmin) 100-500 mulmin) 325 325 326	FLOW PLEVEL STABLIZATION PLOW RATE (mUmin) (100-500 minmin) (100-500 minm	PROJECT LO MARK MAC CON O Q MARK MAC CON O Q MACHINE MAC CON O Q MACHINE MAC	AGEN DO OO WELL DIAMETER (Inches) FURGE: 1 WELL VOLUME (TOTAL WELL DEPTH - STANC DEPTH TO WATER (Inches) FURGE: 1 WELL VOLUME (TOTAL WELL DEPTH - STANC DEPTH TO WATER (Inches) FURGE: 1 WELL VOLUME (TOTAL WELL DEPTH - STANC DEPTH TO WATER WELL (Idea)) FURGE DO OF THE WATER (Idea) FLOW DEPTH TO TURBORTY DISSOLVED OXYGEN (Ingl.) FLOW RATE (Incl.) FLOW RATE (Incl.) FLOW RATE (Incl.) FLOW WATER (Inc	FLOW PATE (mells) FLOW RATE (me	TEAL COLOGO PROJECT LOCATION PURCHASION AND PLANT COLOGO PURCHASION AND PURCHASIO	ACCOUNT CONTINUED TO THE PROPERTY OF THE PROPE	SOB-339-3700 PROJECT LOCATION SOS-139-7300 THE COLOR OF THE	

Sovereign Consulting Inc. 9058 South Mann Street, Suito 207 Mansfield, MA 02048

50B-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyake, MA 01040 413-540-0650

SHM- 10- 20 OJECT NUMBER 8/4/10 PIO READING DEPTH TO BOTTOM (feet) PURGING DATA (see below) PON WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gollons Per Fool): 0.75 = 0.02: 1'=0.04: 1.25 = 0.06; 2'=0.16; 3'=0.31; 4'=0.63; 5'=1.02: 6'=1.47; 19'=5.88

WELL SCREEN INTERVAL INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN FUND OR TUBING I GALLON = 3.785 LITERS TOTAL VOLUME PURGED: GALLONS PURGING ENGED AT 10:50 10:05 LITERS 245-30 DEPTH TO WATER WITH PUMP. WATER LEVEL STABLIZATION (feet) VOLUME PURGED DURING FLOW RATE TIME INTERVAL DEPTH TO WATER (feel) START END Water Level Stable PUMP SETTINGS INTERVAL (mL) (Yes or No) (min) (mathrin) TIME FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR ODOR CONDUCTIVITY (mV) (describe) RATE WATER (NTU) OXYGEN (°C) (describe) (mUmin) (100-500 mL/m (mg/L) (M2/cm) (foct) (10 KF (4/- 3%) (+). 0.17 -91.1 29 126 14:10 522 little cloud 6.63 10:13 350 0.37 none 29 85.7 10:07 225 0.36 6.65 13.95 583 cloude none 360 91.1 318 350 29' 0.34 6.68 13.35 622 cloudy none 0:07 -928 slightly clay 29' 0.33 630 none 13.44 521 139 10135 350 0.4 EPA stabilization parameters from EPA/54(VS-95/504, April 1996 SAMPLED BY (PRINT) AFFILIATION: SAMPLER(S) SIGNATURES: ISAMPLING INITIATED AT SAMPLING ENDED AT SorCon gr. 10:37 10:50 FUMP OR TUBING DEPTH IN WELL SAMPLE PUMP FLOW RATE (INL per minute) HELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL NE 350 FIELD FILTERED Y FILTER SIZE: ____ pen FIELD DECONTAMINATION: O DUPLICATE Filtration Equipment Type MATERIAL CODES AG = Amber Glass; CG = Clear Glass PE = Polyautysteria PP = Polyaropylene S = Sécure 7 = Téllon O = Other (Svecify) WELL CONDITION CHECKLIST (chard appropriate trents), cross out if not applicable) Type: Flush Mount / Stand Pipe . General Condition: Good / Needs Repair Well Caps: Good / Broken / None Good / Broken / None ridence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?; Y / N PVC Riser: Good / Damaged / None dence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None

neMARKS:

Sovereign Consulting Inc. 9058 South Mein Street, Suite 202 Mansfeld, MA 02048 508-139-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Squere Way, Suite #307 Holyake, MA 01040 413-540-0650 Vortical Prositing - DPT

-	ACCOL-C		WELL DIAME	TER	DEPTH TO WATE		OCPTH TO		(ppmv)	
JBING DIAM IChes)	114	(see below)	Paly	F V	corump			PUMP EQUIPM	ENT MODEL & SERIAL IN	
ELL CAPACI ELL SCREEI PTH (leet):		D 0.75 • 0.02 1	1 WELL DEPTH - S 1 0.04. 125 - 0.00 125 - 0.	2 = 0.16: 3 = 0.1	7. # = 0.65; 5" P OR TUBING DEP	1.02: 6 = 1.4 THIN PURGO	1: 12 = 5.88 1G INDIATED AT 1:55		ON = 3.785 LITERS NG ENDED AT:	TOTAL VOLUME PURGE GALLONS: LITERS:
IME INTER		RATE	(feet)	PUMP SETTING	is .		DEPTH TO W START	ATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DUR INTERVAL (mL)
TIME	FLOW RATE (mL/min) (100-500 mL/min)	DEPTH TO WATER (feet)	TURBIDITY (NTU)	OISSOLVED OXYGEN (mg/L)	pH (+/- a.ir	(°C)	SPECIFIC CONDUCTIVITY (us/em)	ORP (mV)	COLOR (describe)	ODOR (describe)
11:06	425	39'	596 297	0.39	6.50	13.63	674	-34.5 -38.0	cloudy	none
1:24	425	39'	91.6	0.37	6.49	13.92	650		little clouds Clear	none
	- 7	e -1				12	51			
to de la	n parameters from E	V4755		LER(S) SIGNATURE	S SAMPLING	DATA:	Lica: (SAMPL	ING INGINED AT	SAMPLING ENDED AT
	39 OFFTH IN WELL	SAMPLE PUA	PFLOWRATE (ML)	orminute):	FIELD PARAMETI	ER MONITORIN	G EQUIPMENT MO	DEL & SERIAL I	idle	11:40
ERIAL CODES	AMINATION (V)	N iless: CO = Canar C	Fillras Stans PE = Polyethyn	OF PERSON CHE	mt. S = Silcone		Other (Specify)	and and and	DUPLICATE	* O
dence of l	Mount / Stand Rain Water Betw I Ponding Arour	veen Steel & P	General Condition	onDiTION CHE in: Good / Nee is Well Pli crete Collar' G	dsRepair umb?: Y / N	Well Caps: PVC R	Good / Broke tiser: Good /	n / None		Broken / None
MARKS:		G	P-10-8	20-03	19-F					

Sovereign Consulting Inc. 9058 South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite M307 Holyoke, MA 01040 413-540-0650

ROJECT NAM	508-339	- 0	PROJECT LO	Derlies	ens Av	mpling	D.F.	DATE 8/L	NIΔ	34M-10-2)
OUECT NUM	ACON O	02	WELL DIAME		DEPTH TO WA		DEPTH TO	BOTTOM.	PIDREAD	DAM-10-91
SAUDINE		W. W. Le	(inches)	70 W 7 W 80	(feen)	DATA	(feet)	DESCRIPTION OF THE PARTY OF THE	(ppmv)	
UBING DIAM!	114 "	TUBING MA	PON	PURGE PU	AP TYPE	ı/A	25145400-1042		MENT MODEL & SERIAL	is:
		_	LWELL DEPTH - S		ATER) X WELL			GALLONS	ut	TERS
WELL CAPACI	TY (Gallons Per Foot)	0.75 = 0.02, 1	- 0.04: 1.25 = 0.06	£ 2 = 0.16; T = 0.	7: 4'=0.65, 5'	= 1.02, 6 = 1.4			ON = 3.785 LITERS	TOTAL VOLUME PUR
WELL SCREEN DEPTH (Icel):	2	WELL (A	PUMP OF TUBING DI edi)	WELL (feel)	Taylor Section	17		100	4:42	GALLONS:
	12	BATION	DEPTH TO WATER		1-121	//	1:05	1	4.42	LITERS:
TIME INTER	LEVEL STABL		(feet)	PUMP SETTING	is.	بملي	DEPTH TO W	ATER (feet)	Water Level Stable	VOLUME PURGED D
(min)	(mL/ml			TOMI DETTING	-	-	START	END	(Yes or No)	INTERVAL (mL
		-								1
	-	1								
									V.	
TIME	FLOW RATE	DEPTH TO	TURBIOITY (NTU)	DISSOLVED	pH	TEMP (°C)	SPECIFIC	ORP (mV)	COLOR (describe)	ODOR (describe)
(3-5 minutes)*	(mUmin) (100-500 mUmin)*	(feet)	(-1- 10%)	(mg/L)	[+≠ 0.1)*	(4/- 390)*	(r/- 31)*	(4/- 10mV)*		
RO:PA	450	111	1074	5.87	6,11	16.89	180	860	cloudy	none
14:15	450	11'	265	5.69	6.10	16.14	180	95.0	cloudy	none
14:22	450	116	129	6.34	6.13	15.84	181	99.5	little cloudy	none
14:28	450	ti	54.1	6.33	6.14	15.67	182	101.5	CHAY	none
-										
					V		-		-	
					1	4	-		-	
_			-		4		-			
-					-	1				+
-		-			-	-				
						4.5		-		
3				-						
-			-			1				1
EPA stabilizatio	on parameters from E	PA/540/5-95/504	April 1996		1					4
AMPLEO BY IS	RINT) / AFFICIATION	2008年最	ISAU	PLERIS) SIGNATURE	SAMRUNG	PRAINC, '=	基本的	SALES	LING INITIATED AT	SAMPLING ENDED AT
	v Con		The state of the s	OR_	-			Salah	14:32	14:42
	NG DEPTH IN WELL		MP FLOW RATE (ML)	pur minute).	FIELD PARAME	TER MONITORIN	G EQUIPMENT MO	OEL & SERIAL		1 10
	11	4/1	50	1 to 100000 / 2		elan .				
ELD DECONT	AMINATION: (V)	N	1,000	Ion Equipment Type	N FILTER	SIZEpm			DUPLICATE	* ®
ATERIAL CODES	AG = Ambei G	less: CG - Clear			ene, 5 s Salcone		Other (Specify)			
		Sec. 1	WELL	CONDITION CHE	CKLIST (ord	appropriate flem	(s), cross out il not a	ppicablaj		
- D	Mount / Stand	Dian	Connection - and	on: Good / Nee	de December	141-11-0	Good / Broke	- 141-44	Lack: Good	/ Broken / None



Sovereign Consulting Inc. 905B South Main Street Suite 202 Mansfield, MA 02046 508-339-3700

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyohe, MA 01040 413-540-0650

ROJECT NAM		39-3700	[PROJECT LO	Vertico	7 1.108	MING-	DAI	DATE 1		413-540-0650 Twell to
	ACCOL.	002		Deve			DEPTH TO	8/4	[[O	SHM -10-21
TOJECT NUM			(Inches)		(feet)		(loui)	BOTTOM	(ppmv)	ING:
UBING DIAME		Internet	ATERIAL CODE	PURGE PU	PURGING	DATA	证据 器 医皮		MENT MODEL & SERIAL A	50.08.00%
nones):	1/4"	(see below	PON	- Contract	COPLIME				The same of the same of	
ELL VOLUM	EPURGE: 1 WEL	T AUT NWE (LO.	TAL WELL DEPTH - S					GALLONS:	un	ERS
		o() 075 = 0.02	1'=0.04; 1.25 = 9.06 PUMP OR TUBING D	7 = 0.16; 3' = 0	37: 4" + 0.65; 5	= 1.02, S = 1.4	7: 12° = 5.88		ON = 3785 LITERS	TOTAL VOLUME PURGE GALLONS:
VELL SCREEN EPTH (leet):	410	WELL	(feet).	WELL (lee)	k	Charles Pales	14:45	74-7-50	5:25	UTERS:
20-25	LEVEL STAE	UTATION	DEPTH TO WATER		10-98		11.93	1 9	v	
TIME INTER			(fuet)	PUMP SETTIN	~	100	DEPTH TO W	ATER Harth	Water Level Stable	VOLUME PURGED DUR
(min)	(mL/			TOWN DETTIE	•••	*	START	END	(Yes or No)	INTERVAL (mL)
	-							-		
								-		
	+									
-	1			-					-	
TIME	FLOW	DEPTHYO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	DRP	COLOR	ODOR
	RATE (mL/min)	WATER (feet)	(MTU)	OXYGEN (mg/L)	100	(°C)	CONDUCTIVITY	(mv)	(describe)	(describe)
Testanin 3-C)	[100-500 mL/min)*	(44- 0.3).	(*/- 10%)*	(+/- 10%)*	(+/- 0.1)"	(e/- 7%)*	(µ5/cm) (+/- 1X)*	(+/- 10mV)*		(= 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0
14:48	350	9)	41,000	5,13	6.05	15.94	695	93.8	cloudy/sitty	none.
4:55	350	21,0	790	2.77	6.08	15,36	725	88.4	cloudy '	none
5:06	360	911	134	1.43	6.07	14.27	788	97.5	littleclously	nane
× 2	34	1-90-1		1000			CAL II	0 0		
								HOLE S		
		-			11 1000					
					1				7	
								1		
-										-
-					-	-				
		-			-	-				
-				-		1400				-
-				-	-				-	-
PA SIANGEAR	n parameters from	EPA/SINS OFFICE	April 1996		1					-
			NOTE SELECTION		SAMEEN	EUZIAE S		A Property		STATE OF THE STATE
MPLEO BY (P	RINT) / AFFILIATE			LER(S) SIGNATUR	ES:	Table 18 Comment			LING INITIATED AT:	SAMPLING ENDED AT
	500	The second secon	the second second second	Je.					6:75	15:25
1 100	OL		350	ej minule)	FIELD PARAME	TER MONITORIN	G EQUIPMENT MO	DEL & SERIAL	us,	
	1.0			FILTERED (Y)	N FILTER	SIZEim	_		and the same of	00
	MINATION: (V)			un Equipment Type					Metal	50 B
TERIAL CODES	AG = Amber	Glata: CG = Cine					Other (Specify)	and reliable		
no: Eluch	Mount / Stand	Pina	General Condition	ONDITION CHI			Good / Broke		Lock: Good /	Braken / None
A Committee of the			PVC? Y / N		eas Kepair lumb?: Y / N		liser: Good /			Diamen / None
	SALL PLATOR DOL	July Dices it	V - M - V - V - M - M - M - M - M - M -	19 AIGHT	market 1 1 1	1,400	mant. Cook 1			
	f Ponding Arou	nd Well? Y	10-21-C	srete Collar: G	Good / Crack	ed / Leakin	g / None			

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MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040 413-540-0650

ROJECT NA	ACOOL OZ	2	PROJECT LO	Della	ensla	ver		DATE 8/4	110	SHM-10-21	
OJECT NUI	ABER:		(inches)	WELL DIMMETER: DEPTH TO WATER: DEPTH TO (feet)					D BOTTOM PID READING (ppmv)		
BING DIAMI	eter .	TUBING MATE	RIAL CODE	PURGE PU	PURGING	DATA:	AV ALVA	PUMP EQUIPA	ENT MODEL & SERIAL	Series Line	
	4-1	(see below)	914		dumb			GALLONS:	Jun	ERS	
	E PURGE: 1 WELL TY (Gallons Per Fool)		plantage transfer				1: 12'= 5.00	1	ON = 3.785 LITERS	TOTAL VOLUME PURG	
PTH (lee)			MP OR TUBING DE	PTHIN FINAL PUM	P OR TUBING DEF	THIN PURGIN	G INITIATED AT:	PURGING ENDED AT:		GALLONS:	
	30.82		31	State of the Contract of the C	0 -3 2)	31	5:33		6:10	LITERS:	
WATER	LEVEL STABL	(1)	EPTH TO WATER	PUMP SETTING	15	, J.,	DEPTH TO W	ATER (feet)	Water Level Stable	VOLUME PURGED DU	
(min)	(mL/m		-	rum scrim			START	END	(Yes or No)	INTERVAL (mL)	
			-							-	
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR	
	RATE (mUmin)	WATER (feet)	(NTU)	OXYGEN (mg/L)		(-c)	CONDUCTIVITY (us/em)	(mV)	(describe)	(describe)	
Sminules)*	(100-500 mL/min)*	31'	(+A 10%)-	0.83	(+/- 0.1)*	14.46	501	59.0	cloudy	MANA	
5:36 5:45	475	31,	87.6	1.8.1	6.33	13.94	502	51.1	With Cloud	none	
6:56	475	31'	34.7	1.54	435	13.78	503	44.9	ckar	none	
	113	01	3-1.1	1.39	303	13.10	30.3	1-1-1	V.CC	none	
			-								
		7					1				
						1					
				-					-		
			-		-				-	<u> </u>	
-				-	-						
										-	
-				- 34				- NO.	-	-	
- 4		-	-	-		-					
								Part of the			
26 ethilizate	on parameters from E	PAISING OCION AN	61 100¢							J	
		Carlot Company and Company of the Co			SAMPLING	DATA		29/36CF	Aller Burney	TO COMPANY	
	PRINT) / AFFILIATION			LERIS) SIGNATURI				SAMP	UNG INITIATED AT	SAMPLING ENDED AT	
	NG DEPTH IN WELL		FLON FLATE (mL p	es injunto).	FIELD PARAMET	TER MONITORIN	G EQUIPMENT MC	1	A 2 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 10.10	
O,	81	4	15								
LO DECONT	AMINATION (V)	H	100	on Equipment Type	N FILTER	SIZE			DUPLICATE	Y (1)	
ERIAL CODES	i AO = Ambe O	less: CG - Geer Gu		ne. PP × Palypropyl	The second secon		23 T 43 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T	-			
		March.		ONDITION CHE							
Prish	Mount / Stand	Pipe (eneral Condition	in: Good / Ned	ods Repair	Well Caps:	Good / Broke	in / None	Lock: Good	Broken / None	

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MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #J07 Holyoke, MA 01040

ROJECT NA	ACCOLO	02	PROJECTE	CATION: Dev	ens Au	er C	1	DATE 8/2	1110	SHM-10-21
OJECT NU	ACCOL-C		WELL DIAME (inches)	TER	(feel)	IER	DEPTH TO	80110M	PID READI	
	MANS PERSONS	3/10/24		7.157.000		DATA	The second secon	188.00 C/88	the second section and the second section is a second section of the second section of the second section sect	The state of the s
HING DIAM		(see below)	RIM CODE	PURGEPU	EODUM	-	2000-2000-200	PUMP EQUIPM	NENT MODEL & SERIAL &	
				STATIC DEPTH TO W		-		GALLONS.	Un	RS:
		(): 0.75 = 0.02: 1° =	0.04; 1.25 = 0.00	S: Z=016: 3'=0.	7: ¥ = 0.65: 5	=1.02 6 = 1.4	7: 12 + 5.89	- I GALL	ON - 3.785 LITERS	TOTAL VOLUME PURG
	NINTERVAL	WELL (feet	MP OR TUBING DE	THE PERSON NAMED IN COLUMN	THE STREET	CONTRACT VALUE	NG INITIATED AT:		NG ENDED AT:	GALLONS:
	40-42		41	41	40-42	7	16:14	1	6:44	LITERS:
WATER	LEVEL STAB	LIZATION D	EPTH TO WATER	WITH PUMP.						
TIME INTER	RVAL FLOW I	RATE		PUMP SETTING	S		DEPTH TO W	ATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DUI
		3/11/11	- 4				91.10			
			_							
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	CDOR
	RATE (mL/min)	WATER (feet)	(MTU)	DXYGEN (mg/L)		(.c)	CONDUCTIVITY (µS/cm)	(mV)	(describe)	(describe)
6 minutes)*	(100-500 me.min)*	(r.c. 0.27)*	1-1- 10%P	1-1- 10%/*	fet. 0.13°	(4/- 350)*	(us/cm)	(+A 10mV)*	A1 1 .	
6:15	300	4	591	204	6.51	14.97	617	-22.9	cloudy	none
6:33	300	41'	144	0.98	6.64	14.51	687		little cloudy	none
G:30	300	ul.	7.28	0.43	6.66	14.14	627	-80,2	clear	none
			**							
	1									J
						1				
									1	
									1	
									-	
-	300-01	4-300		107.550	100	-	1 4 7		2	
1			0.		- 44		1 2	-	7	•
				-					-	
A stabilization	n parameters from E	PA/340/S-95/504 April	11996						L	
a en j	RINT) / AFFILIATIO					DATAS:			Achter Co.	SAMPLING ENDED AT
INCED BY (N	The state of the s	SovCan	SAME	LER(5) SIGNATURE	S				ing initiated at:	16:44
PORTUBE	G DEPTITIN WELL		LOW RATE (IIIL P		FIELD PARAMET	ER MONITORIN	G EQUIPMENT MO	the same of the sa		10.47
t	11	80	0		********					
	MINATION (V)		FIELO		FILTER S	S126 par			DUPLICATE	· (1)
RUAL CODES				on Equipment Type ne: PP's Parypropyle	# 5:56row	Te Tellan O =	Diher (Specify)			
		2 2 1		ONDITION CHE			11112777700	opticately)		
e: Flush	Mount / Stand	Pipe G		in: Good / Need			Good / Broke		Lock: Good /	Broken / None
lence of f	Rain Water Betw	een Steel & PVC	27 Y / N	Is Well Plu	mb?: Y / N	PVCF	Riser: Good /	Damaged	/ None	
deace a	Pandina Aroun	d Well? Y /	N Con	rete Collar: Go	and Cracks	ed / Leakin	a / None			

Sovereign Consulting Inc. 9058 South Main Street, Swife 202 Mansfield, MA 02048

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040

508-339-3200 413-540-0650 ACON OCA 8/4/10 3HM-10-21 OCCUMP 114" (see below) Poly (inches) GALLONS WELL VOLUME PURGE: 1 WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY TOTAL VOLUME PURGED: WELL CAPACITY (Goloros Per Foot): 0.75 + 0.02; 1' = 0.04; 1.25 = 0.06; 2' = 0.16; 3' = 0.04; 4' = 0.65; 5' = 1.02; 5' = 1.47; 12' = 588 GALLON = 3.785 LITERS INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN PURGING INITIATED AT: GALLONS: PURGING ENGED AT: WELL (feet) LITERS: 16:50 50-52 50-52 WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP FLOW RATE Water Level Stable VOLUME PURGED DURING TIME INTERVAL PUMP SETTINGS DEPTH TO WATER (feet) (Yes or No) INTERVAL (mL) SPECIFIC ORP COLOH ODOR FLOW DEPTH TO TURBIDITY DISSOLVED TEMP RATE WATER (NTU) DXYGEN (°C) CONDUCTIVITY (mV) (describe) (describe) (mL/min) (feet) (mg/L) (+/- 3%)* 101 0.15 (+/- 3%)* (+/- 10mV) (+/- 10%)" (35 mindes) 425 511 283 21.3 Silly 17:05 6.55 41.000 298 16.16 none. 17:10 485 41,000 0.78 6.54 14.45 579 53.5 51' none sith 6.55 16.65 278 1084 51.0 NONE 77:74 511 0.43 425 17:17 425 315 16.80 דרב 60.9 silty none 51' 0.32 4.50 EPA stabilization parameters from EPA/540/S-95/504. April 1996 Soucan PUMP OR TURING DEPTH IN WELL SAMPLE PUMP FLOW RATE (mit. per minute). FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #8 FIELD-FILTERED (7) FILTER SIZE: ___ pm FIELD DECONTAMINATION: (P) N OUPLICATE 0 Filtration Equipment Type PP * Polyprogytene 5 + Secone, 7 = Tellon: 0 = Other (Specify) AG = Amber Glass CG + Clear Glass WELL CONDITION CHECKLIST (prote appropriate trem's), cross out a not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None idence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None dence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None

GP-10-21-051

x

LMARKS:



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MONITORING WELL SAMPLING LOG



Sovereign Consutting Inc. 4 Opon Square Way. Suite #307 Hulyoke, MA 01040 413-540-0650

	March 1 March 1	W.Y		Leve	nslaver			B/4	110	S+1M-10-21	
PROJECT NAME ACOOL-00 2 OJECT NUMBER				WELL DIAMETER DEPTH TO WATER					PID REA (pomv)	EADING:	
R. Sakara	May 2/ 102 (1)	55 J. J. J. J. J. J. J. J. J. J. J. J. J.		53.5	and the second	DATA	(feet)	Maria Compa		NOT NOT A TO SHAPE	
ING DIAME		TUBING MA	TERIAL CODE	PURGE PUR	AP TYPE:	100 611 (64) 144		PUMP EQUIPME	NT MODEL & SERIAL		
			YE		Sund	o i pi ditti		GALLONS:	10	TERS	
			L WELL DEPTH - STA				17 = 5 98	CALC	N = 3.785 LITERS	TOTAL VOLUME PURGE	
LL SCREEN		MITTAL	UMP OR TUBING DEPT	HIN FINAL PUME	OR TUBING DEP	THIN PURGIN	G INITIATED AT		G ENGED AT:	GALLONS:	
TH (feel)	59-Ce1	WELL (I	60	WELL (feet):	0'	1	7:40	1	825	LITERS:	
WATER	LEVEL STABL	IZATION	DEPTH TO WATER W					_		-	
ME INTER	VAL FLOW R	ATE	(feet)	PUMP SETTING	iS		DEPTH TO W		Water Level Stable		
(min)	(mUm	in)	~ .				START	END	(Yes or No)	UNTERVAL (mL)	
	_								-	-	
		-		*			-	-			
		-	-	_		-	-	-	4		
	_	-			-					-	
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	DDOR	
	RATE (mt/min)	WATER	(NTU)	OXYGEN (mg/L)		(.c)	CONDUCTIVITY (µS/cm)	(mV)	(describe)	(describe)	
5 roinutes)*	(100-500 mL/min)	(+/- 0.3)*	(+/- 10%)*	(*A 10%)*	(+/- 0.1)*	(+/- 3X)*··	(*/- 3K)*	(+6 10m/y	4		
1:05	300	60	41.000	0.67	6.72	17.60	890	-60.9	silty	none	
31:6	300	60,	41,000	0.76	0.71	16.69	832	63.8	VH12	none	
:23	300	60,		ດກລ	6.48	16.54		-64.2	- 1	C TW	
~		6					0.000				
-	-	-					-			-	
-								-		1	
-				-	_				-		
-		-		-	-					-	
_		-			1			-	-		
										100	
						7			Cur		
						Barrier .		5-			
			1					i ii			
	on parameters from I										
COUNTY OF	PRINT) / AFFILIATE	图和第三支持	ISAMP	ERISYSIONATURE	SAMPLING	DATA		ISAMPI	NG INITIATED AT	SAMPLING ENDED AT	
	ohin t	laveld,	South	11 1	1	1.11	1		826	osa caro oraconi	
AP OR TUBI		SAMPLE PU	MP FLOW RATE (ML pm	moule)	FIELD PARAMET	ER MONITORIN	G EQUIPMENT MO	manager of the factor of the		-	
" (00		300								
	AMINATION (3)	N			N CHIERS	326; jim			DUPLICATE	r (1)	
ERIAL CODE				Equipment Type PP = Polypropy	ene SeSilcone	Te Telen 0 =	Other (Specify)				
							(6), cross out if not a	ppticatrie)			
e. Flush	Mount / Stand	l Pipe	General Condition				Good / Brake		Lock: Good	/ Broken / None	
dence of	Rain Water Bet	ween Steel & f	PVC? Y / N	is Well Pi	umb?: Y / N	PVC F	Riser: Good I	Damaged	/ None	The second second	
adance .	I Pondico Arou	nd Welli ² Y	/ N Contr	ete Collar G	and / Crack	ed / Leakin	or / None				
IARKS:	or a containing / in oc		7 IV Conci	Cit Gollor. C	DEG 1 GIDEN	Su / Leanin	g / Hone				



Savereign Consulting Inc. 905B South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040 413-540-0650

BING DIAME			WELL DIAME					BOSTON PIE READING		
BING DIAME			(inches)	2000 5.000	(feet)	2022	(leet)	W. C. Salvania	[ppmv]	O. 14.775.
thes)	LER .	TUBING MA	FERNAL CODE	PURGE PU	MP TYPE	DATA	en alle tak	PUMP EQUIPME	NT MODEL & SERIAL	n.
	4"	(see below)	Poly		Geopu	mp		ALL 600	638	Trans.
LL VOLUME	PURGE: I WELL	VOLUME: (TOTA	L WELL DEPTH - S	STATIC DEPTH TO W				GALLONS	C)	ERS-
LL CAPACIT				EPININ FINAL PUM					N = 378SLITERS	TOTAL VOLUME PURG GALLONS:
PTH (feet)	C14.6	WELL 10		WELL (feet)				Punga	G ENDED AT	
	-196		11		16-18	3 - 1	0:08			UTERS:
WATER	LEVEL STABL	4. 10.5.40	DEPTH TO WATER (feet)	WITH PUMP:						
(min)	VAL FLOW R			PUMP SETTING	SS	•	DEPTH TO W	ATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DUF INTERVAL (mL)
			,							
						-				
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	PHQ	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mUmm)	WATER (leel)	(NTU)	OXYGEN (mg/L)		(°C)	CONDUCTIVITY (µS/cm)	(mV)	(describe)	(describe)
3-5 minutes)*	(100-500 ast/min)*	(+/- 0.01)*	(+/- 10°E)*	(+/- 10%)	(+4 0.15°	(1/- 3%)°	(1/- 7xh.	(v/- 10mV)*		
0:01	360	17'	23.5	3.55	5.47	16.26	393	74.5	chear	none
0:16	350	1	8.09	3.87	5.98	19.60	386	74.9	clear	none
0:25	350	17'	5.37	4.03	5.99	14.46	380	76.2	clear	none
	100,000,000		200							
								77		
				1			-			-
		-		-	-			-		
-		-		+	-		-		-	
			-			-	-			-
				-	-		-			-
						11				
							7 5	THE IS		
			-100							
	A		8.0		18			26		100
		-		-	-		-	-		
			-	-					-	-
GA SANGE SE	on parameters from E	DAJE 40/C DESERVA	A - 11 1500							
	A Parameter and the same			原产生工程	SAMPLIN	G DATA!	USE AND I	- ID-182	Secretary States	2.10.15
	PRINT) / AFFILIATIO	N		PLER(S) SIGNATUR		September 2	2008 0 36 18	SAMPL	ING INSTINCTED AT	SAMPLING ENDED AT
	Sa	Con		de				10	o: 28	10:40
W.V.	NG DEETH IN WELL	SAMPLE PU	MP FLOW HATE (OIL	рат негиси)	FIELD PARAME	TER MONITORIN	G EQUIPMENT MC	DEL & SCRIAL	is:	
1	1		350	La villa VI						
FO DECONT	AMINATION: (6)	N		DIFILTERED (1)	N FALTER	SIZE			DUPLICATE	@ "
TERIAL CODE	S AG - Arriber	Class CG • Class			lany. \$ / Elicone	T v Telios D v	Other (Specify)			
-01			WELL	CONDITION CH	ECKLIST (old	io appropriate item	(a), tross out if not a	oplicable)		
pe: Flush	Mount / Stand	Pipe	General Condit	ion: Good / Ne	eds Repair	Well Caps:	Good / Broke	n / None	Lack: Good	/ Broken / None
				is Well P			Riser: Good	Damaged	/ None	
andence of	of Ponding Arou	nd Welli? Y	/ N Co	ncrete Collar: (Good / Crac	ked / Leakin	g / None			



Sovereign Consulting Inc. 9058 South Main Sweet, Suite 202 Mansfield, MA 02048

MONITORING WELL SAMPLING LOG

Sovereign Consulting Inc.
4 Open Square Way, Suite N307
Holyoke, MA 01040

Destical Position 508-339-3200 413-540-0650 Devens Aver SHILL-10-23 PID READING DEPTH TO BOTTOM O JECT NUMBER WELL DIAMETER inches) PURGING DATA A Land State of the TUBING DIAMETER TURING MATERIAL CODE PUMP EQUIPMENT MODEL & SERIAL & (see below) Poly (Inches) / LL (See Delow) POL GEODUTE
WELL VOLUME PURGE: 1 WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY GALLONS WELL CAPACITY (Gallons Per Fool): 0.75 = 0.02; 1 = 0.04: 1.25 = 0.06; 2 = 0.16; 3 = 0.07; 4 = 0.85; 5 = 1.02; 6 = 1.47; 12 = 5.88

WELL SCREEN INTERVAL INITIAL PUMP OR TUBING DEPTH IN PURGING INITIATED AT DEPTH (leet): WELL (leet): 1 GALLON = 3.785 LITERS TOTAL VOLUME PURGED: PURGING ENDED AT: GALLONS: 11:a6 10:52 LITERS. 26.25 27 2726 DEPTH TO WATER WITH PUM WATER LEVEL STABLIZATION (leet) DEPTH TO WATER (feel) VOLUME PURGED DURING TIME INTERVAL FLOW RATE PUMP SETTINGS Water Level Stable END (Yes or No) INTERVAL (mL) (mL/min) START (min) TIME DEPTH TO TURBOITY DISSOLVED TEMP SPECIFIC ORP COLOR ODOR FLOW WATER OXYGEN CONDUCTIVITY (enV) RATE (NTU) (°C) (describe) (describe) (mUmin) (lett) (mg/L) (µ5/2m) (+/- 10mV)* (6). 130 (+L 10%) (el- 0.1) (+L 0.31 (w- 10%) (+/- 391 2.74 6.11 250 cloudy 271 41,000 14.52 4028 73./ 10:54 none 47' 2.38 1,042 cloudy 797 6.13 13.99 66.2 10:57 250 nano G.H129 350 271 a ua 3.23 1.063 75.9 none 11104 6.11 cloudy 271 58.5 3.35 6.08 1,060 94.3 clear 11:15 350 18.10 none EPA stabilization parameters from EPA/S/0/S-95/604 April 1996 SAMPLED BY (PRINT) / AFFILIATION MAPLERIS SIGNATURE S SAMPLING INITIATED AT: SAMPLING ENDED AT 11:17 SAMPLE PUMP FLOW RATE (INL. per militar). 11:26 SOVCON PUMP OR TUBING DEPTH IN WELL FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #8: FIELD-FILTERED: HELD DECONTAMINATION 67 N 0 DUPLICATE Filtration Equipment Type MATERIAL CODES AG = Amber Glass CG = Class Glass PE = Polyethylene PP = Polypropytene 5 = Sicone T = Tellon O = Other (Success) WELL CONDITION CHECKLIST (circle appropriate item(s), cross out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None idence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?; Y / N PVC Riser; Good / Damaged / None endence of Ponding Around Well? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS GP-10-23-027-F

Sovereign Consulting Inc 9058 South Main Street, Suite 202 Mansfeld, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG Low Flow Sampling



Sovereign Consulting Inc. 4 Open Square Way, Soile #307 Holyoke, MA 01040 413-540-0650

Nestical Profiling - DPT PROJECT LOCATI SHIM-10-23 Aco01002 (feet) (feel) PURGING DATA URGE PUMP TYPE UMP EQUIPMENT MODEL & SERIAL NO TURING MATERIAL COOP (see below) PON Geapump WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Foot) 0.75 = 0.02, 1'= 0.04, 125 = 0.06, 2'= 0.16, 3'= 0.31; 4'= 0.65, 5'= 1.02, 5'+ 1.47; 12'= 5.86 GALLON = 3.785 LITERS TOTAL VOLUME PURGED INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN WELL (leet) PURGING ENDED AT WELL SCREEN INTERVAL GALLONS WELL (Idel) 11:40 19:15 LITERS 3634 DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION VOLUME PURGED DURING PUMP SETTINGS DEPTH TO WATER (feet) Water Level Stable TIME INTERVAL FLOW RATE INTERVAL IMLI (mUmin) (min) TIME FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC COLOR ODOR (describe) RATE WATER (NTU) OXYGEN (*C) CONDUCTIVITY (mV) (describe) (*/- att)* (mLimin) (feat) (mg/L) (+ 10%) (+1- 0.1) (4/- FA)* 37, 13.8 350 13.32 942 little claudy noru 215 5.91 13,67 91.7 little cloud 136 3.46 5,95 959 37' none 350 90.9 clear 37' 13 75 961 350 594 3.41 5.94 none EPA subilization parameters from EPA/540/S-95/504 April 1996 SAMPLING DATA SAMPLING INITIATED AT MPLING ENDED AT 12:02 12:15 SON CON SAMPLE PUMP FLOW RATE (ml. per minute) PUMP OR TURNIG DEPTH IN WELL FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #6: 350 FIELD-FILTERED FILTER SIZE ______ FIELD DECONTAMINATION (V) N DUPLICATE Filtratian Equipment Type MATERIAL CODES AG = Amber Glass CG - Dear Glass PE = Polyettylene PP = Polyphoplene & Sicona T = Tellon Q = Other (Suece) WELL CONDITION CHECKLIST (circle appropriate turn(s), cross out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None idence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser; Good / Damaged / None andence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS: GP-10-23-037-F

بمر

Sovereign Consulting Inc. 965D South Main Steet, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307

Holyake, MA 01040 413-540-0550

TOJECT MAN	Accord	002	- March co	Deve	s/Ayer		0	8/3	10	SHM-10-23
DJECT NUM	IBEA.		(inches)	TER	(ices)	ER.	(feet)	BOTTOM.	PID REA (ppmv)	OING.
SING DIAME	15008.	True inc. un	TERIAL CODE	PURGE PUR	PURGING	DATA			ENT MODEL & SERIAL	10000000000000000000000000000000000000
(cs))4"	(see below)		Ge	nama			COMP. ECON. W	ENT MODEL & SERIAL	. •1
		VOLUME (TOTA	NE WELL DEPTH - S			CAPACITY		GALLONS	10	ITERS
			* = 0.04: 1.25 = 0.06						ON = 3,785 LITERS	TOTAL VOLUME PURG
TH (feet):	INTERVAL	WELL (PUMP OR TUBING DE	WELL (feet)	OR TUBING DEP		13:20	1000000	NG ENDED AT	GALLONS:
	46-4		91	147	40-48		13.20		4:00	LITERS
	LEVEL STABL	0.500	DEPTH TO WATER (feel)							
ME INTER (min)	VAL FLOW R			PUMP SETTING	S	2 -	DEPTH TO W	ATER (leat) END	Water Lovel Stable (Yes or No)	VOLUME PURGED DUI INTERVAL (mL)
			1							
	A							T-		
TIME	FIGUR	DESTINATE OF	T (ONIT)	L properties	-	1 weren	adroicia	onn	20, 00	-
1 mic	FLOW	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	Hq	TEMP (*C)	SPECIFIC CONDUCTIVITY	(mV)	COLOR (describe)	ODOR (describe)
5 minules)*	(mUmin)	(leet)	(-/- 10%)	(mg/L)	[ef- 0.17	(1/- 28)°	(4/- 1%)"	(+/- 10mV)*		
:25	300	47	60.6	1.49	6.49	16.93		-92.7	CHON	none
15.0	300	47	754	1.83	6.56	16.41		-95.2		none
37	500	47	374	1.34	6.60	15.76		95.1	Cloudy	none
, 5	300			1.34	6.44	154.6	110	10.7	Johny	1746
-				-		-			_	
-	-				-		-			-
-		4				-	+			-
-				-			+			+
							-		-	
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										- A.
										11
	ion parameters from I			-		7012				*
	PRINT) / AFFICATIO		the first of the second second second	PLERIS) SIGNATURI		DATA	25. T. T.	ISAMPI	INGINITATEDAT	SAMFLING ENDED AT
	Soulo		344	9					3:46	14:00
	ING DEPTH IN WEL	The same of the same	IMP FLOW RATE (m)L	per minute)	FIELD PARAMET	TER MONITOR	RING EQUIPMENT MO			177.00
0	47		300							
D DECON	TAMINATION (V	N			N FRIER	SIZE	m		QUPLICATE	y N
ERIAL CODE		Glass CG = Clas		lene PF - Polypopy	ere 5 Secons	T = Telson (0 + Oller (Specify)	-		
							em(s), cross out if not a	pplicable)		
pe: Flus	h Mount / Stant	d Pipe	General Conditi	ion: Good / Nee	eds Repair	Well Caps	s: Good / Broke	n / None	Lock: Good	/ Broken / None
dence of	Rain Water Bel	ween Steel &	PVC? Y / N	is Well P.	lumb?: Y / N	PVC	Riser: Good	Damaged		100
		ind Welll? Y	/ N Co	ncrete Collar: C	Good / Crack	ed / Leal	king / None			
MARKS:			00	- 10-	22 .	NIM	200			
			6	- 10-	27-(ו דר	- 4			



Sovereign Consulting Inc 9056 South Main Street, Suite 702 Mansfield, MA 02048

MONITORING WELL SAMPLING LOG



Sovereign Consulting loc. 4 Open Square Why, Suite #307 Holyake, MA 01040 413-540-0650

508-339-3200 PJECT NUMBER ACOOL OOD (ppmv) PURGING DATA TUBING DIAMETER TUBING MATERIAL CODE URGE PLIMP TYPE PLIMP EQUIPMENT MODEL & SERIAL FL inches) 114. Geopump CALLONS WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Poor) 675 = 0.02. 1 = 0.04. 1.25 = 0.06; 2 = 0.18. 3 = 0.37: 4 = 0.65. 5 = 1.02: 5 = 1.47: 12 = 5.88

WELL SCREEN INTERVAL

DEPTH (Icel):

SLQ - SS

WELL (Icel):

S7

S7

S6-58

14: 07 GALLON = 3.785 LITERS TOTAL VOLUME PURGED PURGING INITIATED AT PURGING ENDED AT GALLONS 56-58 14:07 LITERS: WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUM (feet) FLOW RATE Water Level Stable TIME INTERVAL PLIMP SETTINGS DEPTH TO WATER (feet) VOLUME PURGED DURING (mUmin) (Yes or No) (min) DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR ODOR RATE WATER (NTU) OXYGEN CONDUCTIVITY (mV) (describe) (describe) (mLimin) (mg/L) (NS/cm) 100 0.19 (+/- 35)* (+/- 10mV) (4- 0.3) (*/. 10%): (at- 10%) 57 773 0.63 6.63 15.59 749 1/3.8 275 none 14:15 claudy 57 0.48 739 746 275 4.67 14.57 -121.1 cloud none 57 275 25 U 0.86 6.65 743 100.2 14:33 14.51 little clour mone * EPA stablization parameters from EPA/S40/S-95/504 April 1996 SAMPLING DATA 14:50 14:36 PUMP OR TUBING DEPTITIN WELL SAMPLE SAMPLE PUMP FLOW RATE (ML DW INVENTE) FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL HS FIELD-FILTERED FIELD DECONTAMINATION, (V) DUPLICATE Filiration Ecurpment Type MATERIAL CODES PE - Polypiliumine PP : Polypiopylene 8 + Secone 1 = Fellon 0 = Other (Specify) WELL CONDITION CHECKLIST (cacle appropriate start(s), cross out if not applicable) General Condition: Good / Needs Repair Well Caps: Good / Broken / None Type: Flush Mount / Stand Pipe idence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None endence of Ponding Around Well? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS Dupa - 080510 - U

A

Sovereign Consulting Inc. 9058 South Main Street Swite 207 Mansfield, MA 02048

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #367 Hulyoke, MA 01040 413-540-0650

ROJECT NAM	Accord	26.0	PROJECT LO	FOST	Deve	n = ()		DATE /5-	110	Stron 10-13
.UECT NUM	IBER	XX	WELL DIAME	TER	DEPTH TO WATE	34.0	DEPTH TO	BOTTOM: U	PIO REAC	VINI-IO IC
対の航	94.07	-200	(mdms)	-11 -17/0	FURGING		(feet)	KC, OLDO	1000000	10 Car Sear 7
BING DIAME	TER 1/G	TUBING MATE		PURGE PUN		Para.			ENT MODEL & SERIAL	
dies)			PU	T- T-C DC0/Y- / TO 14/4	SPEC OF SERVICE	TARABITA'		GALLOWS:	lui lui	ERS -
			The same of the same of	TATIC DEPTH TO WA			· 12° ≈ 5.88	1 CAVI	ON = 3JASLITERS	TOTAL VOLUME PURG
ELL SCREEN	INTERVAL	WELL (lee	MP OR TUBING DE	WELL (1881)	OR TUBING DEP	TITIN PURGIN	G INITIATED AT:		VG ENDER AT	GALLONS:
EPTH (feel):	43-45	, rece just	44	mees proce	44		1130			LITERS:
WATER	LEVEL STABL		EPTH TO WATER	WITH PUMP:	_			- 4		
TIME INTER	VAL FLOW F	ATE		PUMP SETTING	5		DEPTH TO W	ATER (feel) END	Water Level Stable (Yes or No)	VOLUME PURGED DUF
1130	400		Pmy/	10.0-	50		32.7	_	Yes	- WILLIAM INC)
110-	1			10.0					7100	
								- 4		
		20 100					200			4
TIME	FLOW	DEPTH TO WATER	YURBIOITY (NTU)	DISSOLVED	pH	TEMP (°C)	SPECIFIC CONDUCTIVITY	(mV)	COLOR (describe)	ODOR (describe)
AT about	(mL/m/n) (100-500 mL/mm)*	(feet) (*/- 0.3)*	(*/· 10%)*	(mg/L)	(4) 0 1P	(+/- 3%)*	(µ\$/cm)	(4/- 10mV)*	3 9	, sameter
3-5 minutes)*	400	73 4	193	0.80	6.45	0.86	394	-11,6	Clark	Nove
135	400	33.5	75	0.37	5.89	17.28	386	7.4	Aightly (1800)	NONE
45	400	33.8	147	0,47	5.91	17.73	387	10.3	Clore	NONE
150	400	33.9	192	0.47	5.04	17.95	388	6.0	clear	NUNG
155	400	33.1	203	0.43	5,97	18.23	385	17.6	slightly cloudy	NONE
133	-100	35,1	103	0.15	2141	10.65	303	1	I sugaring process	Mone
-						-			-	-
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		*				0.013			19	
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PA SUBSEL	-	EPA/540VS 99/504 A		C-2-17 (00 2 11 20	- armar na	HARRY .	3 TIME	- 100 CONT.	80 20 82	and the excellent
AMPLEC BY	PRINT) I AFFILIATIO	7/ /		PLER(SESIGNA) URE		WATE P			ING BUTIATED AT	SAMPLING ENDED AT
Toru	Then U	nath		(/	//	16		1/0	200	
JMP ON TUB	ING DEPTH IN WEL		FLOW RATE (mi.)	perfection)	MELD PARAMET	ER MONITORIN	G EQUIPMENT MO	DEL & SERIAL	65C	
2	44	- '	100	D.FILTERED ?	N ENTERS	512E-YS 1191				
ELD DECON	AMPIATION (4) N	11.3	bon Environent Typer	n Fictions	W.C. 4.7 hall			OUTUGATE	* (*)
YERIAL CODE	S AG + Ambel	Cleas CG - Clum G		krns PP = Palypropyle			Other (Spendy)			
				CONDITION CHE						
	Mount / Stand			on: Good / Nee		The state of the s	Good / Broke			/ Broken / None
		ween Steel & Pl		Is Well Place Icrete Collar: G	umb? Y / N		iser: Good i	Damaged	None	
- STATE TOO	ar a mining wife	The Arents 1	TO COL	PRICE COURT OF	COU I CIACKE	Leakin	A LAGUE			

Sovereign Consulting Inc. 9050 South Main Street Suite 25:7 Mansfield, MA 02008

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Halyoke, MA 01040

508-339-3200 413-540 0650 - Thotasomic SHM-10-12 PROJECT NAME DATE 15/10 Acool 002 DIECT NUMBER DEPTH TO BOTTOM WELL DIAMETER PID READING (opmv) (inches) PURGING DATA TUBING MATERIAL CODE PUMP EQUIPMENT MODEL & SERIAL #5 1/4 DE inches). (see below) CALLONS WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X. WELL CAPACITY WELL CAPACITY (GAIRGNE PER FROM): 0.75 = 0.02, 1° = 0.04; 1.25 = 0.06; 2° = 0.16; 3° = 0.37; 4° = 0.65; 5° = 1.02; 5° = 1.47; 12° = 5.88

WELL SCREEN INTERVAL INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN PURGING NITIATED AT 1 GALLON = 3 785 LITERS TOTAL VOLUME PURGED: GALLONS 25 PURGING ENDED AT WELL (feet) DEPTH (leet): 1345 53-55 54 DEPTH TO WATER WITH PUMP. WATER LEVEL STABLIZATION (feel) FLOW RATE VOLUME PURGED DURING INTERVAL (mL) TIME INTERVAL PUMP SETTINGS DEPTH TO WATER (feel) Water Level Stable (Yes or No) (min) START 3.5C 1345 175 CPM4/10.0-5.0 Ken TIME TURBIDITY DISSOLVED SPECIFIC COLOR DEPTHTO ODOR WATER (NTU) OXYGEN (°C) CONDUCTIVITY (mV) (describe) (describe) (mL/min) (100-500 ml./m (mg/L) (+/- 1%) (Heat) Late somety (4/- 10%) [1/ 0.1F 14/- 3N)-(2-S minutes) (+/- 0.77 917 0.38 NONE 1350 175 33.8 6.56 -19.3 Slightly sitty 24.92 358 175 3313 6.22 6.24 1355 33.85 23.32 354 1.6 stightly silly NONE 175 0,20 1400 33.85 3607 6.16 23.11 359 -14.7 slightly silty NONE 0.18 22.50 1405 33.85 6.13 364 -13.1 175 1752 cloudy NONE 1410 175 6.11 21.43 368 -17.1 > Instrument 33.85 0.16 silly NONE 1.00 EPA stabilization parameters from EPA/540/S-95/504 April 1996 SAMPLING DATA 14:15 1570 AMPLE PUMP FLOW SATE TELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL RS 175 FIELD-FILTERED (*) FILTER SIZE ZZ jum ELD GECONTAMINATION (Y) 6 DUPLICATE Filmwon Equipment Type MATERIAL CODES PE = Polyethylene PP = Polypropyline 5 : Silcone T = Tellon O = Olner (Specify) AG - Amber Glass CC - Clear Glass WELL CONDITION CHECKLIST (curde appropriate tiem(s), trassa out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None 'dence of Rain Water Between Steel & PVC? Y / N [s Well Plumb?: Y / N PVC Riser: Gnod / Damaged / None

andence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / Norie REMARKS:

		Sampler Name(s):	umH, 551	J		
		WELL IDEN	ITIFICATION: SH	7-05-046B		
	Well Integrity Protective Casing Secure Concrete Pad Intect PVC Casing Intect Well Gripper Present Bolts Present (Pad Wells) Locked (Stickup Wells)	YES NO N/A			B to Water: 17,0	
	Type of Sampling: Pump Type (if applicatio):	Pump	Disposable Baller Submersible	Field Filtered Other		
Floid	Water Quality Measurements	Purge Start Time:	9:20	Purge End Time:	4:61	_
Time		4:38	9:43	9,50		
Temp	erature (°C)	12.21	12.57	12.93		
Spec	fic Conductivity (uS/cm)	592	(250	662		
Disso	Ived Oxygen (mg/L)	0.94	0.77	0.81		
pH (S	u)	5-69	5.69	5.71		
ORP	(mV)	14.5	Le. 1	3.0		
Volum	e Purged (gal)	2	3.5	\$5.0		
	S (include well repairs performed and we	Sample Tir Il repairs needed):	те: 9:55	-		

905B South Main Street, Suite 202	Project Name:	1001.002			Date: 4/9/10
Mansfield, MA 02048 508-339-3200	Project Location:	Fort Deve	M5.	Proje	ict#:
		mH. 55V			
	-				
	WELL IDENTIF	CATION: 54	M-82-4	BC+BC))
Well Integrity	YES NO N/A		Well Inform	etion A	131
Protective Casing Secure Concrete Ped Intact				Depth to Water:	11.83.6
PVC Casing Intact		Material	PVC Depth	to Well Bottom:	64.00 9
Well Gripper Present Bolts Present (Pad Wells)					1
Locked (Slickup Wells)					
Type of Sampling:	Pump I	Disposable Bailer	Fleid Fillered C	Other	
. P. C. Sandan B.					
Pump Type (if applicable):	inertial	Submersible (Peristellic Ot	her	
Field Water Quality Magsurements	Purge Start Time: 10			·· <u>/300</u>	
Time	1245	1250			
Time Temperature (°C)	1245	1250 11.75	11. 7.5	11.74	14.75
		ALTERNATION IN	11. 7.5 311	11.74	11.75
Temperature (°C)	11.57	11.75			No. of the last of
Temperature (°C) Specific Conductivity (mS/cm)	11.57	11.7.5 310	311	311	310
Temperature (°C) Specific Conductivity (mS/cm) Dissolved Oxygen (mg/L)	11.57 230 3.40	11.7.5 310 0.37	311	311	310
Temperature (°C) Specific Conductivity (mS/cm) Dissolved Oxygen (mg/L) pH (S.U.)	11.57 231) 3.40 6.23	11.7.5 310 0.37 3.66.35	311 0.36 6.38	511 0.3% 6.43	310
Temperature (*C) Specific Conductivity (mS/cm) Dissolved Oxygen (mg/L) pH (S.U.) ORP (mV)	11.57 231) 3.40 6.23 -23.4 2.5	11.7.5 310 0.37 3.6.35 -34.4	311 0.36 6.38	511 0.3% 6.43	310
Temperature (*C) Specific Conductivity (mS/cm) Dissolved Oxygen (mg/L) pH (S.U.) ORP (mV) Volume Purged (gal)	11.57 2.31) 3.410 6.23 -23.4 2.5	11.7.5 310 0.37 3.66.35	311 0.36 6.38	511 0.3% 6.43	310
Temperature (*C) Specific Conductivity (mS/cm) Dissolved Oxygen (mg/L) pH (S.U.) ORP (mV) Volume Purged (gal)	11.57 2.31) 3.410 6.23 -23.4 2.5	11.7.5 310 0.37 3.6.35 -34.4	311 0.36 6.38	511 0.3% 6.43	310
Temperature (*C) Specific Conductivity (mS/cm) Dissolved Oxygen (mg/L) pH (S.U.) ORP (mV) Volume Purged (gal)	11.57 2.31) 3.410 6.23 -23.4 2.5	11.7.5 310 0.37 3.6.35 -34.4	311 0.36 6.38	511 0.3% 6.43	310
Temperature (*C) Specific Conductivity (mS/cm) Dissolved Oxygen (mg/L) pH (S.U.) ORP (mV) Volume Purged (gal)	11.57 2.31) 3.410 6.23 -23.4 2.5	11.7.5 310 0.37 3.6.35 -34.4	311 0.36 6.38	511 0.3% 6.43	310

signature of Sampler: Ninkyn HNO

Date: 6/9/11)

503-339-3200			t Diver		7.	Project #:	
		T.	MH, 53	,VV			
		WELL IDENTIF	FICATION: SFIP	-05-0451			
3	Nell Integrity			Well Info	rmation	AB	. 8
	Protective Casing Secure Concrete Pad Intect PVC Casing Intect Welf Gripper Present Bolte Present (Pad Wells) Locked (Stickup Wells)	YES NO NIA		rial: PVC De	Depth to Water,	75.70	_ 17.6 _ 27.1
	Type of Sampling:	Pump	Disposable Bailer	Field Filtered	Other	-	
	Pump Type (if applicable):	Inertial	Submersible (Peristollic	Other		
Field Water Qual	ity Measurements	Purge Start Time:	(id U	Purge End 1	Пітс: <u> </u>	<u>ی</u>	-
Time		## 1034	1105				
Temperature (°C)		13.22	13.95	13.47			
Specific Conduction	vity (uS/cm)	29%	294	2941			
Dissolved Oxygen	(mg/L)	0.39	0.30	0.30			
pH (S.U.)		6.18	6.20	620	1 4		
ORP (mV)		-16.8	-32.0	-32.2			
Volume Purged (g	al)	2	(0	6.5			
NOTES (Include v	well repairs performed and wel	Sample Time:	1115_	-			

Signature of Sampler_

Harry

Date: 5/5/10

Sovereign Consulting Inc. 905B South Main Street, Suite 202	Project Name	wers/Ayer		Gale	8/12/2016
Mansfield, MA 02048 508-339-3200	Project Location			Project #	ACCOL . OC
	Sampler Name(s)	att cross	y, mieko	Joshavn	
	WELL IDENTIFIC	ATION: SHIM-	-07-05		
Well Integrity	YES NO NIA		Well Informatio	o _	
Protective Casing Sect Concrete Pad Int. PVC Casing Int. Well Gripper Prese Botts Present (Pad Wol Locked (Stickup Wel	ure X X A A A A A A A A A A A A A A A A A		PVC Depth to \	well Ballam.	<u>14 15.35</u> 52 33.6
Type of Sample	ng: Pump Dis	posable Bailer F	Field Filtered Othe		_
Pump Type (if applicab	ne): Inertial Su	bmersible (eristatic Other		
	Purce Start Time:	1.0	Purge End Time	10:00	
Field Water Quality Measurements	Purge Start Time:	9.51	Purge End Time.	10:00	
Field Water Quality Measurements Time	9:53	9:56	10:00	70.00	
Time Temperature (*C)	9:53 11.41	9:56	10:00	70.00	
Time Temperature (*C) Specific Conductivity (uS/cm)	9:53 11.41 261	9:56 11.53 240	10:00 11.43 256	70.00	
Time Temperature (*C) Specific Conductivity (uS/cm) Dissolved Oxygen (mg/L)	9:53 11.41 261 0.38	9:56 11.53 240 0.41	10:00 11.43 256 0.40	70.00	
Time Temperature (*C) Specific Conductivity (uS/cm) Dissolved Oxygen (mg/L) pH (S.U.)	9:53 11.41 261 0.38 6.09	9:56 11.53 240 0.41 6.20	10:00 11.43 256 0.40 6.45	70.00	
Time Temperature (*C) Specific Conductivity (uS/cm) Dissolved Oxygen (mg/L)	9:53 11.41 201 0.38 6.09	9:56 11.53 240 0.41	10:00 11.43 256 0.40	70.00	

905B South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200	Project Name:	1842 5 1/2)	855	Dale:	8.12-2 fcool.oc
	Sempler Name(s)	(cdt Cook	* The P	bohen	_
	WELL IDENTIF	CATION: SIM	P-05-42 A		
Well Integrity Protective Casing Secure Concrete Pad Intact PVC Casing Intact Well Gripper Present Bolts Present (Pad Wells) Locked (Silckup Wells)		Diameter Material	0.1	1111	
Type of Sampling Pump Type (if applicable)			Field Filtered Other		1 - 1 -4 -
Field Water Quality Measurements	Purge Slart Time:	3:20	Purge End Time:	13:35	
Time	13:25	13:30	13:35		
	10.62	10.46	10.39		
Temperature (°C)	10.00		4		
Temperature (°C) Specific Conductivity (uS/cm)	66	63	61		
		63	1.20		
Specific Conductivity (uS/cm)	2.46				11.
Specific Conductivity (uS/cm) Dissolved Oxygen (mg/L)	2.46	1.93	1.20	, w	n = , = 1
Specific Conductivity (uS/cm) Dissolved Oxygen (mg/L) pH (S.U.)	2.46 6.48	1.93 664 90.4	1.20		
Specific Conductivity (uS/cm) Dissalved Oxygen (mg/L) pH (S.U.) ORP (mV)	6.48 88.1 0.5	1.93	1.20 6.50 89.5		
Specific Conductivity (uS/cm) Dissolved Oxygen (mg/L) pH (S.U.) ORP (mV) Volume Purged (gal)	6.48 88.1 0.5	1.93 664 90.4	1.20 6.50 89.5		

71-1 11-1

Sovereign Consulting Inc. 9058 South Main Street, Suite 202 Mansfield, MA 02048		sepphys t	os ma		8/12/10
508-339-3200	Project Location:	Sit Thise	AS M		ACOOL
	Sampler Name(s):	Insither_	Chaffee, la	agder Mus	xlnan
	WELL IDENTIF	ICATION: SHY	N-07-0	3	
Well Integrity Protective Casing Secure Concrete Ped Intect PVC Casing Intact Well Gripper Present Bolts Prosent (Pad Wells) Locked (Stickup Wells)	YES NO NIA			epih to Water. 20 Well Bottom: 31	.60_
Type of Sampling:	(Pump)	Disposable Bailer	Flaid Filtered Oth	oer	
Pump Type (if applicable):	Inectial	Submersible	Peristaltic Othe	. Galder	
Calculation of One (1) Purge Volume:	Q . 08	/200	Purge End Time:	/220	
Time	1205	1210	1215	1220	
Temperature (°C)	13.00	12.59	12.31	12.25	
Specific Conductivity (mS/cm)	76	7.7	79	81	
Dissolved Oxygen (mg/L)	6.84	652	6.53	6.61	
pH (S.U.)	6.64	6.10	5,91	5.81	11
ORP (mV)	-103.5	127.2	13 3: 2	133.4	
Volume Purged (gal)	~0.25	~0.5	~0.75	~1.0	
NOTES (include well repairs performed and w	Sample Time: rell repairs needed):	1220	*		
Signature of Sampler	mil		Date:	8/12/10	2

Sovereign Consulting Inc. 9058 South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200	Project Location:	Shopply's H Fort Dean Januthan			ACOOL Muselma
	WELL IDEN	TIFICATION: SH (1-99-31	ß	
Well Integrity Protective Casing Sec Concrete Pad Int PVC Casing Int Well Gripper Pres Bolts Present (Pad We Locked (Stickup We	tact 4 4 sent 4 sent 4 sils)			tilon Depth to Water: 5, 7 to Well Bottom: 67, 1	
Type of Sampli Pump Type (if application		Disposable Baller Submersible	1	ther	
	Per Foot): 0.75" = 0.02; 1" = Per Foot): 0.75" = 0.02; 1" = Purge Start Time:	0.04; 1.25*=0.06; 2*=		\$5; 5"=1.02; 6"=1.47;	
Time	1050	11057	1100	11105	1110
Temperaturo (*C)	10.81	10.73	10.69	10.77	10.74
Specific Conductivity (mS/cm)	168	182	184	186	186
Dissolved Oxygen (mg/L)	0.35	0.21	0.21	0.20	0,19
pR (S.U.)	605.	5.98	5.99	6.00	6.03
ORP (mV)	76.6	47.7	44.2	37.8	33.0
Volume Purged (gal)	~1	~2	~3	1~4	~5
NOTES (include well repairs performed an	Sample Tim d well ropairs needed):	He: 1110		71-	

i i i i	Sovereign Consulting Inc. 905B South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200	Project Name:	10		Project #	8/12/ ACOOI Selman
		WELL IDENTI	FICATION: SHL	23	-	
	Well Integrity Protective Casing Secure Concrete Pad Intect PVC Casing Intact Well Gripper Present Bolts Present (Pad Wells) Locked (Stickup Wells)	YES NO N/A	Diameter. Material:		otion Depth to Water: 29. 9 to Well Bottom: 36. /	95 <u> </u>
	Type of Sampling: Pump Type (if applicable):	Pump Inertial (Fleid Filtered C	nner Bladder A	mp
	WELL VOLUME PURGE: WELL CAPACITY (Gallons Per F Calculation of One (1) Purge Volume. Floid Water Quality Measurements: Floid Water Quality Measurements: Floid Water Quality Measurements	001): 0.75" = 0.02; 1" = 0	5835		0015	
	Time	0845	0855	0905	09/5	
-	Femperature (*C)	10.89	10.93	10.36	10.42	
1	Specific Conductivity (mS/cm)	31	26	25	25	
	Dissolved Oxygen (mg/L)	10.01	FO.01	10.02	10.06	
	oH (S.U.)	8.52	7.61	6.74	6.45	arte.
-	DRP (mV)	170.4	1881	202.1	209-8	
	/olume Purged (gal)	~1.0	~1.5	~2.0	~2.5	
N	IOTES (include well repairs performed and well	Sample Time repairs needed):	:0915			

Sovereign Consulting Inc. 905B South Main Street, Suite 202 Manslield, MA 02048 508-339-3200	Project Name Project Location	vevens/Aye	x	Date Project #	8/12/2010
	Sampler Name(s)	Nott Cra	sby, Julie	Robshan	1
	WELL IDENTIF	CATION: SHM	-05-39A	140	
Well Integrity Protective Casing Sect. Concrete Pad Into PVC Casing Into Well Gripper Press Bolts Present (Pad Wel Locked (Stickup Wel	act Act Act Act Act Act Act Act Act Act A		Well Information Depth to 1	th to Water: 12.68	
Type of Sampli Pump Typa (if applicab		Disposable Bailer Submersible	Field Filtered Other		
Field Water Quality Measurements	Purge Start Time: _8	:52	Purge End Time:	9:20	b
Time	9:00	9:15	9:20		
Temperature (*C)	11.59	11.35	11.37		
Specific Conductivity (uS/cm)	252	263	263		
Dissolved Oxygen (mg/L)	0.34	0.35	0.35		
pH (S.U.)	6.33	6.44	6.45	\$4 ×	
ORP (mV)	-19.5	-50.8	-52.9		
Volume Purged (gal)	12	14	5		
NOTES (include well repairs performed a	peded.				(-)
SHM-05-39B					

Sovereign Consulting Inc. 905/3 South Main Street, Suite 202	Project Name:	Devend Ay	er	Date 8 12 3010
Mansfield, MA 02048 508-339-3200	Project Location			Date 8 [12] 2010
	Sampler Name(s):	Matt Cras	sby, susie re	bsham
	WELL IDENT	FICATION: SHIM	-10-10	
Well Integrity	102 Star and		Well Information	
Protective Casing Sec		Diamet	er: 1,5" Depth to	Water: 11, 26
Concrete Pad In		Materi	al: PVC Depth to Well	Bottom: 66.50
Well Gripper Pres Bolts Present (Pad We	The state of the s			
Locked (Stickup We		-		
Type of Samp	ling: Pump	Diaposable Baller	Field Filtered Other_	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Pump Type (if applical	_	Submersible	Peristally Other_	
Pump Type (il applical WELL VOLUME P	bb): merilal PURGE: 1 WELL VOLUME = {[DEPTH TO BOTTOM - D	Peristalls Other EPTH TO WATER) X WELL C: = 0.16; 3* = 0.37; 4* = 0.65; 5*	
Pump Type (il applical WELL VOLUME P	PURGE: 1 WELL VOLUME = (I s Per Fool): 0.75* = 0.02; 1*=	DEPTH TO BOTTOM - D	EPTH TO WATER) X WELL C	
Pump Type (if applicat WELL VOLUME P WELL CAPACITY (Gallon:	PURGE: 1 WELL VOLUME = {E s Per Fool}: 0.75* = 0.02; 1*=	DEPTH TO BOTTOM - D	DEPTH TO WATER) X WELL C: = 0.16; 3° = 0.37; 4° = 0.65; 5°	
Pump Type (if applicat WELL VOLUME P WELL CAPACITY (Gallon:	PURGE: 1 WELL VOLUME = (0 s Par Fool): 0.75* = 0.02; 1*=	DEPTH TO BOTTOM — E = 0.04; 1.25" = 0.06; 2" :	EPTH TO WATER) X WELL CI = 0.16; 3* = 0.37; 4* = 0.65; 5'	" = 1.02: 6" = 1.47; 12" = 5.88
Pump Type (if applicate WELL VOLUME PWELL CAPACITY (Gallon) Calculation of One (1) Purge Volu	PURGE: 1 WELL VOLUME = (0 s Par Fool): 0.75* = 0.02; 1*=	DEPTH TO BOTTOM — E = 0.04; 1.25" = 0.06; 2" :	EPTH TO WATER) X WELL CI = 0.16; 3* = 0.37; 4* = 0.65; 5'	" = 1.02: 6" = 1.47; 12" = 5.88
Pump Type (if applicate WELL VOLUME P WELL CAPACITY (Gallon: Calculation of One (1) Purge Voluments	PURGE: 1 WELL VOLUME = {C s Par Fool}: 0.75* = 0.02; 1*= ume: 3.30	DEPTH TO BOTTOM — E = 0.04; 1.25° = 0.06; 2° :	Purge End Time:	" = 1.02: 6" = 1.47; 12" = 5.88
Pump Type (if applicate WELL VOLUME P WELL CAPACITY (Gallon Calculation of One (1) Purge Voluments Elekt Water Quality Measurements Time	PURGE: 1 WELL VOLUME = (I s Par Fool): 0.75° = 0.02; 1° = 0.02; 1° = 0.02; 1° = 0.02; 1° = 0.03; 1°	DEPTH TO BOTTOM — E = 0.04; 1.25° = 0.06; 2° :	Purge End Time:	" = 1.02: 6" = 1.47; 12" = 5.88
Pump Type (if applicat WELL VOLUME P WELL CAPACITY (Gallon Calculation of One (1) Purge Volu Elekt Water Quality Measurements Time Temperature (*C)	PURGE: 1 WELL VOLUME = (I s Par Fool): 0.75° = 0.02; 1° = 0.02; 1° = 0.02; 1° = 0.03; 1°	DEPTH TO BOTTOM - E = 0.04; 1.25° = 0.06; 2° :	Purge End Time:	" = 1.02: 6" = 1.47; 12" = 5.88
Pump Type (if applicate WELL VOLUME P WELL CAPACITY (Gallon: Calculation of One (1) Purge Volu Elekt Water Quality Measurements Time Temperature (*C) Specific Conductivity (uS/cm)	PURGE: 1 WELL VOLUME = (I s Par Fool): 0.75° = 0.02; 1° = ome: 3.30 Purge Start Time:	11:17 11:27 11.98	Purge End Time: 11:33 11.23 11.23	" = 1.02: 6" = 1.47; 12" = 5.88
Pump Type (if applicat WELL VOLUME P WELL CAPACITY (Gallon Calculation of One (1) Purge Volu Elekt Water Quality Measurements Time Temperature (*C) Specific Conductivity (uS/cm) Dissolved Oxygen (mg/L)	PURGE: 1 WELL VOLUME = (I s Par Fool): 0.75° = 0.02; 1° = 0.000 Purge Start Time:	11:17 11:27 11:28 6.70	Purge End Time: 11:33 11.23 11.23	" = 1.02: 6" = 1.47; 12" = 5.88

No lock on stick-up well.

Signature of Sampler Justin Hall

Date 4/12/10

Sovereign Consulting Inc. 905B South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200	Project Location	A Jeneman	yer	Project # A(00).000
	Sampler Name(s): N	latt Cros	sby, Junie Ro	boham
	WELL IDENTIF	CATION: 5HM	-10-01	
Well lotently	YES, NO NIA		Well Information	
Protective Casing Seci Concrete Pad Int PVC Casing Int Well Gripper Press Bolls Present (Pad We Locked (Stickup We	act act act are first		arrive and a second	Water: <u>4.66</u> oltom: <u>71,86</u>
Type of Sampli	ing: Pulms D	hisposable Bailer	Field Filtered Other	
Pump Type (if applicalt	oe): inertial	Submersible	eristaltic Other	
WELL CAPACITY (Gallons Calculation of One (1) Purge Volun Figld Water Quality Measurements	Per Fool): 0.75* = 0.02; 1* = 0, ne: 2	04; 1.25° = 0.06; 2° = 0	-	2:40
Time	12:30	12:35	12:40	
Temperature (°C)	12.30	11.93	11.86	
Specific Conductivity (uS/cm)	297	292	791	
Dissolved Oxygen (mg/L)	1.38	0.58	0.49	
рн (\$.U.)	52.04	6.76	6.61	
ORP (mV)	42.3	41.7	42.2	
Volume Purged (gal)	1.5	2.5	4	
NOTES (include well repairs performed a	Sample Time: and well repairs needed):	17:40		

Signature of Sample

Date 8.12.200

Sovereign Consulting Inc. 905B South Main Street, Suite 207 Wansheld, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG

Sovereign Consulting Inc.
4 Open Sonere Way Surle N307
Halyoke, MA 01040
413-540-0650

ROJECT NAM	16 A A		PROJECT LOC		Donogra		oloson	DATE COLO	110	WELLIO
DECT NUM	ACOON.	00%	WELL DIAMETE	TOTE	DEPTH TO WAT		DEPTH TO	SOLTON 49	PID REA	MW-10-19
1000			(inches)	7	(feet) 13	2.0	(feet)	66	(ppmy)	
INNG DIAM	TEN	Truging MA	TERIAL COULD	PURGE PU		DATA	Lattace of	PUMP EQUIPME	NT MODEL & SERIAL	No.
JAING DIAMI	1/4	(see below)	PE		des/Sh	unless				
ELL VOLUM	E PURGE: 1 WEL	L VOLUME (TOTA	L WELL DEPTH - ST	ATIC DEPTH TO WA	TER) X WELL	CAPACITY		GALLONS	-	ITERS.
ELL CAPACI ELL SCREEN			" = 0.04. 1.25" = 0.06; PUMP OR TUBING DEP						N + 3 785 LITERS	TOTAL VOLUME PURG
EPTH (leet)	4	METT (L	eat)	WELL (feet)	OH TUBING CIEP			200		GALLONS J. O
	64-6E		65		65	0	730	0	810	CHERS.
0.00	LEVEL STAB	MG-270-270	DEPTH TO WATER ((feet)							
TIME INTER	RVAL FLOW			PUMP SETTING	S		DEPTH TO W	ATER (fact) END	Water Level Stable (Yes ox No)	VOLUME PURGED DUI
5730	40		PM416	0.0-	500		34.4	_	N	
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	(mUmin)	WATER (feet)	(NTU)	OXYGEN (mg/L)		(°C)	CONDUCTIVITY (µ5/cm)	(mV)	(describe)	(describe)
3.6 minutes).	[100:500 mL/min]	(+1- 0.3)-	(*/- 10%)	(4/- 1004)"	[+A 0.1]*	(9/- 3%)*	(+/- 3%)*	(+/- 10mV)*	- 11	1
1220	900	34.4	10 Ginh	0.08	6.55	(4.60	5.28	-744	Silly	11cme
7755	600	35.5	DO Loih	0.15	6.57	13-24	570	-1123	SIR	Pine
000	400	365	Do Gails	0.13	6.53	13.04	583	-107.8	SIFA	lone
805	400	38.1	30. 4mil	0.12	4.62	13.02	556	-64.3	Sill	Ane
810	OUP	39.2	70 Linis	0./3	6.79	12.95	543	-103 3	SV	1
3,0		51.2	117 4 4113	0.13	0.7	14.73	1,100	107 5	9	100
-			-		-	-				
	72.5				-			-	-	
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-	, i*	-		4				10.		+
		-			-			-		
		COLUMN SAISON	,							
PA MINORIAL	ion parameters from			Section 1	SAMOUNG	DATA		- 150 L'an	Article Section	7 7 1 14 9 300
MPLED BY	(PRINT) / AFFILIATI			LER(S) SIGNATURE		1	1	SAMPLI	NG INITIATED AT:	SAMPLING ENGED AT
Jon	when	Chuffe		//	//	a	2		1815	09/0
IMP OR TUB	ING DEPTH IN WE	SAMPLE PI	MP FLTTW RATE (on pr	in mogs.	FIELD PARAME	ER MONTORIA	G EQUIPMENT MO	DEL & SEHIAL O	1	
	65		400	Compen (7)	20.00					
ELU DECON	TAMINATION C) "		on Equipment Type	N FILTER	Size 4) jum			DUPLICATE	(i) "
ATERIAL CODE	ES AG = Amba	Glas CG - Clear		ne PP = Polycropy	and Sisteme	T = Tellon 0 •	Other (Specify)		-	*
		V 3.00	WELL C	ONDITION CH	CKLIST (cide	appropriate item(s), cross out il not a	opócablo)		
ype. Flus	h Mount / Star	d Pipe	General Conditio	n: Good / Nee	ds Repair	Well Caps:	Good / Broke	n / None	Lock Good	/ Broken / None
dence of			PVC? Y / N		lumb?: Y / N		liser: Good	/ Damaged	/ None	
	47.40.00	und Welli? Y	AND THE RESERVE OF THE PARTY OF	rete Collar: C		and the second second	The second second			

Sovereign Consulting Inc. 905B South Main Street, State 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 1 Open Square Way, Suite #307 Holyoke, MA 01040 413-540-0650

	Mansheld, 1 508-339	MA 02048 1-3700		AL FAI	LOW Flow Sa	mpling	750		181121	Holyoke: MA 01040 413-540-0650
OJECTNA	Accol o	^7	PROJECT LOC	ATION De	uens/A	lek)		DATE P) C	110	SHM-10-24
DUECT NU	MOER:	Da	WELL DIAME!		DEPTH TO WAT		UEPTH 70		PID REA	DING 10 04
4 1176	2 kg - 150 - 10 -	W	(inches)	SCHOOL STATE	PURGING	DATA	(feet)	. C = 7.07 back	(nomi)	
B'NG DIAM	FTER	TUBING MA	TERIAL CODE:	PURGE PU	MP TYPE	DATA	1107		ENT MODEL & SERIAL	89 m
mes)	14"	(sce below)	Poly	Gee	gump			CHIMIE	lo	****
ELF AOFIN	E PURGE: 1 WELL	VOLUME (TOTA	LWELL DEPTH - ST			CAPACITY		GALLONS		TERS
	TY (Gallons Per Fool		= 0.04: 1.25 = 0.06. PUMP OF TUBING DE				GINITIATED AT:		ON = 3.785 LITERS	TOTAL VOLUME PURGE GALLONS:
PTH (leel)	down I	METT (U	ret)	WELL (lock					ALL STATE OF THE S	LITERS.
	1-160		15	115	14-16	2 10	1:45		5:30	UTERS.
WATER	R LEVEL STABL	34.7.5.5	DEPTH TO WATER (leel)							
TIME INTER	RVAL FLOW R			PUMP SETTING	SS		DEPTH TO W	ATER (lost) END	(Yes or No)	INTERVAL (mt.)
1			1							

_							-			
	*			-						+
										-
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	PH	TEMP	SPECIFIC	ORP	COLOR	OOOR
	RATE	WATER	(UTU)	DXYGEN		(rc)	CONDUCTIVITY	(mV)	(describe)	(describe)
3-5 minutes)*	(mL/min) (100-S60 mL/min)*	(feet) (H- 0.3)*	(+/- 10%)*	(wby)	(4)- 0.1)*	10/- 3X)-	(µ5/cm) (+/- 374)*	(*/- 10mV)*		1 , 210
1:53	450	15'	764	a.39	5.91	15.61	766	87.1	cloudy	none
5.04		15		2.98	5.92	14.42		110.7		120000000000000000000000000000000000000
	450		45,2			7	763		clear'	none
5:14	450	15'	37.4	3.10	5.94	14.28	762	116.3	Clear	none
		0.5						to the said		
~										1
				-		1				-
		-		_					-	
		-			-					
		1000								
		17								
		7 - 7								
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_							-		-	
	×:	h	W				1		, ,	
	74			3	W	0.00				
PA slablika	ion parameters from t	PA/540/S-95/504	Contract to the second						-	
200	PRINT) / AFFILIATIO	100	Maria Sala	and some	SAMPLING	DATA	6.00	2 4 1	selection of the !!	SAMPLING ENGED AT
MILEUBY			SAM	CERIS) SIGNATUR	to.				INGINITIATED AT	15:30
March The	SOUCO.		MI FLOW IN E (ML p		It is not a same	Lic MONTON	G EQUIPMENT MU			1,0.00
100	5	1	160	o maiate)	PIECES I MISMAE	1	o Equir militer mil	and a degrade		
				FILTERED (Y	N FILTER	SIZE: jum	×.		100000	7
LO DECON	TAMINATION: (Y)	N		en Equipment Type	13050				Metal	5O ™
FRIM COD	ES AG = Ambar	Gloss CG - Clear	Glass PE = Polyelhyle	уна — Ризургору	Inne 5 * Silicione	T. o Tabon G =	Diner (Sportly).			
			WELLC	омоглам сн	ECKLIST (orde	appropriate dem(s), cross out il not a	pplicable)		
pe: Flus	h Mount / Stand	Pipe	General Condition	n: Good / Ne	eds Repair	Well Caps:	Good / Broke	n / None	Lock: Good	/ Broken / None
			VC? YIN		lumb? Y / N		liser: Good	Damaged	/ None	
	of Ponding Arou			crete Collar: C	Good / Crack	ed / Leaking	g / Nane			
MARKS	Q	D-10	-24-0	15-F	* 1	11.0	08091	0 - F		
				-u		JUI -	J 00 11	-11		

Sovereign Consulting Inc. 905B South Main Street. Suite 202 Mansfield, MA 02048

508-339 3200

MONITORING WELL SAMPLING LOG

VC54001 PORTING DPT



Sovereign Consulting Inc. 4 Open Square Way Suite #307
Halyoke MA 01040
#13-540-0650

DJECT NUM	Accol (102	WELL DIAME	Der Der	DEPTH TO WATE	yer)	DEPTRIO	BOTTOM C	PID READ	MG-10-90		
经 货车 (100, 2500	£35.84	Toronto)	- 55	PURGING	DATA	(feet)			- 100 ST 1883		
JBING DIAME			TERIAL CODE	PURGE PUR	MP TYPE	-		PUMP EQUIPM	DIT MODEL & SERIAL B	\$		
					COOPUND PTHTOWATERS X WELL CAPACITY				GALLONS (LITERS			
			1 = 0.04: 1.25 = 0.06	Control of the Control of the Control			1- 12° = 5 88	1 GALL	N = 3.765 UTERS	TOTAL VOLUME PURGE		
ELL SCREEN		INITIAL	PUMP OR TUBING DE		POR TUBING DEP	THIN PURGIN	GINITIATED AT		IG ENDED AT:	GALLONS:		
PTH (lee1):	4-26	MET (25	3		25 1	5:39	10	6:00	LITERS		
	LEVEL STAB	LIZATION	DEPTH TO WATER			\sim						
TIME INTER			(lect)	PUMP SETTING	SS	حسلت	DEPTH TO W		Water Lovel Stable	VOLUME PURGED DURIS		
(min)	(mL/i	rein)					START	END	(Yes or No)	INTERVAL (mil.)		
TIME	FLOW	DEPTH TO	TURAIDITY	DISSOLVED	На	TEMP	SPECIFIC	ORP	COLOR	COOR		
	RATE	WATER	(NTU)	OXYGEN		(°C)	CONDUCTIVITY	(mV)	(describe)	(describe)		
3-5 minules)*	(mUmin) (100-500 mUmin)	(feet) (*/- 0.37*	1++ 10%	(mg/L)	- 64 a 57	(+)· 3%)*	(+/- 3×/-	(+): (0mV)*	×	100		
15:45	475	25	248	4.97	6.05	13.90	715	105.2	little cloude	none		
5:49	475	25	96.3	5.23	6.05	13.39	712	104.9	little cloud little cloud clear	none		
5:58	475	25	44.9	5.81	6.05	13.23	7/0	104.8	ckar	none		
										-		
							200.00		- 1-	- A- 1-		
	1	4.06	0.3.3	1995	VIII.	w.	130	307	*			
		EPA/540/S-90/504		Eller State	2 CAMERINE	FRWT .	Q 2007 80 F 1	1 (36) 35 37	N. 21 1 1 2 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1	· · · · · · · · · · · · · · · · · · ·		
	PRINT)/AFFILIAT		SAN	PLER(S) SIGNATUR	ES:	MOTOR V	7,31210113		ING INITIATED AT	SAMPLING ENOED AT		
	SOV	Con		OL				1	6:01	W:08		
MP OR TUB 6()	25	LL SAMPLE P	MP FLOW PATERING	per moule)	FIELD PARAMET	TER MONITURIA	IG EQUIPMENT MO			destroy of the second		
LU DECON	TAMINATION: (F	N or Glass CG + Cive	Fdu	D.FILTERED (*) Micro Equipment Type Nere PP • Polypropy	N FILTER		Differ (Size Liv)		DUPLICATE	· (3)		
	Att - Allis	50 - 5142		CONDITION CHI			033001	applicable)				
	h Mount / Star Rain Water Be			ion; Good / Ne		Well Caps:	Good / Broke	en / None	A TO A STATE OF THE PARTY OF	Broken / None		

Sovereign Consulting Inc. 9058 South Main Street, State 202 Mansfield, MA 02048

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Helyake, MA 01040

Luw Flow Sampling 50B-179-1200 413-540-0650 SHM-10-84 PROJECT NAME 8/9/10 Accol 062 PIO READIN (Inci) (feel) (pomu) PURGING DATA TUBING MATERIAL CODE URGE PUMP TYPE (see below) PON 114" Georgump WELL VOLUME PURGE: I WELL VOLUMES (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACHY (Gallons Per Fool): 0.75 ± 0.02: 1' ± 0.04. 1.25 ± 0.05. 2' ± 0.06. 3' ± 0.05. 5' ± 1.02. 6' ± 1.47. 12' ± 5.86

WELL SCREEN INTERVAL INITIAL FUMP OR TUBING DEPTH IN FINAL FUMP OR TUBING DEPTH IN PURGING INITIATED AT WELL (feet): WELL (feet) 1 GALLON = 3.785 DTERS TOTAL VOLUME PURGED: PURGING ENDED AT GALLONS: 3534 16:43 LITERS 34-26 0EPTH TO WATER WITH PUMP 10:12 WATER LEVEL STABLIZATION (feet) VOLUME PURGED DURING TIME INTERVAL FLOW RATE PUMP SETTINGS Water Level Stable DEPTH TO WATER (feet) INTERVAL (ML) (Yes or No) (min) (mUmin) START END THAF TURBIDITY DISSOLVED SPECIFIC ORP COLOR CONDUCTIVITY RATE WATER (NTU) DXYGEN (°C) (mV) (describe) (describe) (mUmin) (mg/L) (feet) (#5/cm) (+/- 10mV) (+1- 0.1) (e/: 3%)* (++ 0.3) (41- 10%) 379 400 36 9a.4 cloudy 1617 2.29 5.95 5.05 916 none 400 35' 59.7 1.31 5.94 919 CHEAR 16:05 14.93 95.1 none. 35' 400 45.3 5.94 14.02 914 92.4 Clear none 16:31 EPA stabilization parameters from EPA/540/5-95/504 April 1996 SAMPLED BY (PRINT) / AFFILIATION: SAMPLING DATA OK PUMP OF TUBING DEPTHIN WATER 16:33 16:43 SAMPLE PULLE FLOW RATE LINE DELY IELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #5 35 FIELD-FILTERED S FILTER SIZE: _______ FIELD DECONTAMINATION: DUPLICATE MATERIAL CODES AD = Amber Glass CG = Creer Glass PE a Polya Bryanne. PP = Polypropyrene S = Salcona T a Tellon O = Orner (Specify) WELL CONDITION CHECKLIST (circle appropriate tiern(s), cross out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None "dence of Rain Water Between Steel & PVC? Y / N is Well Plumb?: Y / N PVC Riser: Good / Damaged / None andence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None GP-10-24-035 - F REMARKS:

Sovereign Consulting Inc 9658 South Maio Street, Sone 202 Mansfield, MA 02048

MONITORING WELL SAMPLING LOG

Low Flow Sampling



Sovereign Consulting Inc. & Open Square Viay, Suite N30/ Holyake, MA 01040 413-540-0650

Holding DPI 508-379-3200 PROJECT NAME OJECT NUMBER <u>@1410</u> 391M-10-04 (feet) (pomy) **PURGING DATA** TURGE PLMP TYPE PUMP EQUIPMENT MODEL & SERIAL #6 TUBING DIAMETER TUBING MATERIAL CODE 1/91 mchest: (see below) POW Geonump GALLONS WELL VOLUME PURGE: 1 WELL VOLUME: (FOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (GAYORS PO POOL): 0.75 + 0.02; 1 = 0.04; 1.25 = 0.06; 2' = 0.16; 3' = 0.37; 4' = 0.65; 5' = 1.02; 6' = 1.47; 12' = 5.88
WELL SCREEN INTERVAL. INITIAL PLIMP OR TUBING DEPTH IN FINAL PLIMP OR TUBING DEPTH 1 GALLON = 3 785 LITERS TOTAL VOLUME PURGED PURGING ENDED AT GALLONS: NELL (feet) 17: 25 LITERS: DEPTH TO WATER WITH PUMP 16:45 44-46 WATER LEVEL STABLIZATION (feet) TIME INTERVAL FLOW RATE PUMP SETTINGS DEPTH TO WATER (feet) START END Water Lavel Stable VOLUME PURGED DURING (Yes or No) (min) ImL/min) TIME TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR COOR CONDUCTIVITY RATE WATER (NTU) OXYGEN. (°C) (mV) (describe) (mL/min) (mg/L)(4/- 3M)* (leet) 1+/- 10mVP i+/- 0.31 (44- 0.11) (c) 1007 (16 10th) (+/- 10%) 45' 45.3 cloudy 6:48 .60 6.41 1304 41,000 14.19 nono -63.4 little Cloud 16:51 451 114 13.75 1335 400 159 6.48 none -716 cvoor 451 98.6 13.61 400 1.07 6.54 1332 non m: on EPA stabilization parameters from EPA/S40/S-95/504 April 1996 June 20 東京等 1965年,1955年1979 SAMPLING DATA SAMPLED BY (PRINT) / APPRICATION SAMPLING INITIATED AT: SAMPLING ENDED AT 11:19 17:05 PUMP OR TUBING DEPTITION WELL SAMPLE PUMP FLOW RATE (m) FIELD PARAMETER MONITOHING EQUIPMENT MODEL & SERIAL #5 45 400 TELO-FILTERED (Y) FILTER SIZE UM FIELD DECONTAMINATION (Y) 0 DUPLICATE Filtration Equipment Type MATERIAL CODES AG - Ambel Glass CG + Clear Glass PE + Potrathysane PP + Potrypropyteme S + Stalone T + Telton D - Olner (Specify) WELL CONDITION CHECKLIST (curcle appropriate from(s), cross out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Good / Broken / None Is Well Plumb? Y / N PVC Riser; Good / Damaged / None ividence of Rain Water Between Steel & PVC? Y / N Evendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS: 20-10-24-045-F

بمر



MONITORING WELL SAMPLING LOG

Low Flow Sampling



OJECI NAME	Accord	02	PROJECTICO	Levi		ier		BI	9/10	SHM-10-24
DIECT NUM	BER		WELL DUMET.	ER	(feet)		DESTINIO	BOTTOM	(opmy)	OIMCS
BING DIAME	TER	TUBING MA	TERIAL CODE	PURGE PUN	PURGING	DATA		PUMP EQUIPM	ENT MODEL & SERIAL	#s
- 11	4"	(see balow)	1 - 14	Section 1	apump			GALLONS	10	TERS
			ALWELL DEPTH - ST 1 = 0.04, 1.25 = 0.06.		0.00		12" = 5.88	4	N = 3.785 LITERS	TOTAL VOLUME PURGET
LL SCREEN		INITIAL WELL (I	PUMP OR TUBING DE	THIN FINAL PUMP	OR TUBING DEP	THIN PURGIN	G INITIATED AT	PURGII	NG ENDED AT	GALLONS:
, 4	54-56		55		55	1	7:30	18	·05	LITERS:
	LEVEL STABL		(feet)						Water Level Stable	Ivenus a mose a m
(min)	VAL FLOW R			PUMP SETTING	S	·	DEPTH TO W	END	(Yes or No)	VOLUME PURGED DURI INTERVAL (mL)
_		-								-
-		_		-	_				-	
TIME	FLOW	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	PHq	(°C)	SPECIFIC CONDUCTIVITY	(mV)	COLOR (describe)	ODOR (describe)
3-5 minutes)"	(mL/min) (100-500 mL/min)*	(feet) (f/- 0.7)*	(*/~ 10%)*	(mg/L)	(+A Q 1)°	(e/: 3X)*	(µ5/cm) (+/- 3%)*	(*/- 10mV)		
7:35	600	55'	<1,000	0.87	6.50	14.65	893	-77.5	cloudy	none
7:41	500	55'	<1,000	0.69	6.55	14.15		904		none
7:47	500	55'	41,000	6.77	6.61	13,41	914	-95,3	Cloudy'	none.
		_				-				
-		-		-	-					100
-				-						-
	_									
			8					1		
	- L'N									.
		-	-	-	-	-	-		-	-
						-				
EPA stablizati	ion parameters from	EPA/540/5-95/504	4 April 1996		1					
	PRINT) / AFFILIATION		St. St.	PLERIS) SIGNATUR		DATA	2.50	(CANON	ING INITIATEO AT:	SAMPLING ENDED AT
1000-100-100	Sevace		SAMI	OK	13			1000	7:58	18:05
	ING DEPTH IN WEL		UMP FLOW RATE (mL)	per minute)	FIELD PARAME	TER MONITORIN	IG EQUIPMENT MC			110-0
	55		500	D-FILTERED (Y)	N TEVER	SIZE				
ELD DECON	TAMINATION (*)	N	Fitte	lion Equipment Type	Y				DUPLICATE	, @
STERIAL CODE	ES AG - Ambe	Glass CG + Cres		ONDITION CH				naticalities		
ype. Flus	h Mount / Stan	d Pipe	General Conditi						Lock: Good	/ Broken / None
		The second second second	PVC? Y / N				Riser: Good			The state of the s
		und Welli?	/ / N Cor	crete Collar: C	Good / Crack	ed / Leakin	ng / None		W.	
EMARKS:										

Sovereign Consulting Inc. 9058 South Main Street, Suite 207 Manslield MA 02048

MONITORING WELL SAMPLING LOG

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7	-	10	978
190	w	12	9
	154	v	110

Sovereign Consulting Inc. 4 Open Square Way Sinto #307

SUPET NUM	ACOOL C	Nd_	WELL DIAME	ren tost	DEVIENT (Idea)	1005	DEPTH TO		110 PID REAL	SHM-10-
38.558	-	A-100 W. 1	photes	- 0 B	PURGING	DATA	N Williams	40	III in mot	Winds CW
TUBING DIAME	TER.	(see below)	PERIAL CODE:	PURGE PUR				PUMP EQUIPM	ENT MODEL & SERIAL	#s
	FPIRGE: 1 WELL		LWELL DEPTH - S	TATO DEPTH TOW		CAPACITY		GALLONS	Įv.	TERS
			*= 0.04, 1.25 = 0.06	Charles and A. C. Charles	C40.00 (00 200.00		12 - 5.88	1 GALLO	IN = 3.785 LITERS	TOTAL VOLUME PUR
WELL SCREEN DEPTH (feet):			PUMP OR TUBING DE		PORTUBING DEP				G ENDEO AT	GALLONS: 2
ere in the trace.	38-40		39	7	39		1330	1	400	LITERS
WATER	LEVEL STAB	LIZATION	DEPTH TO WATER	WITH PUMP:	-					
TIME INTER			Hinefi	PUMP SETTING	is		DEPTH TO W	ATER (feet) END	Water Lavel Stable (Yes or No)	VOLUME PURGED D
1331	200	The second second	pmy -	10,51	20	_	24.8	ENU	(res or No)	INTERVAL (INC
-123	s au	-	Millot	10,011	5/0		25.0	_	- ~	
_		-					23/11			
										(1)
TWE	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	DRP	COLOR	ODDR
7.1	RATE (mL/min)	WATER (feet)	(NTU)	OXYGEN (mg/L)		(.c)	CONDUCTIVITY (µ\$/em)	(mV)	(describe)	(describe)
(35 minules)*	(100-500 mL/min)*	1-1-0.37	1+F-10%t*	(+/- 10%)*	(+/- 0 t)*	[1/ 3K]*	[4/- 24]*	(*/- 10mV)*	9-	
1335	200	25.05	1092	0.24	6.41	024.43	735	103.4	Clurk	Dre
1340	OUS	25.10	5513	0.16	5.92	2387	729	367	aud	Non
1345	200	25.10	5219	0.16	5,72	20.67	731	1075	Chisa	None
140g	200	25.10	5730	0,18	2:23	20,28	736	115.7	Clares	Mary
1405	BW	25.13	2935	0.20	5.47	2201	742	104.7	11.0	1
1400	000	25.11	1409	0.18	15,36	31.58	740	1012	Cloudy	Day
-		21.71	7.15.1	0/13	1	0. 32			Dioxon	1.209
									-	-
		-		+	-	-			-	+
-	-			-			-		-	-
		-	-	-	-			-		
_			-				-			
								-		
						A				
						-	1			
	Congression of	3		9		100	10.8			
5	0.7		1-11-1		1-1-1-			5.05	10.0	
										"
and the second section in	ion parameters from		2.0	4						1
SAMELEO	PRINT) / AFFILIATE		504 July 1971	PLERIS LANGUATURI	SAMPLING	DATA		CALC	ING INITIATED AT	SAMPLING ENDED AT
	the C	tothe.	344		1 0	11		1	1405-	1435
PUMP OR TUB	ISG DEPTH IN WIT	L SAMPLE PL	MP FLOW RATE (ML	new front	HELD PARAME	BREONI ORNE	S EDUIPMENT MO	Section 2 to 1 to 1 to 1 to 1 to 1 to 1 to 1 to	and the same of th	1
near i	39		200/						-	
FIELD DECCN	TAMINATION Y) n		D-FIL TERED (Y)	N FILTER	SIZC SEL IM			DUPLICATE	* (")
MATERIAL CODE	S AG = Amba	Guss CG = Cira			and, 5 - Sheare	T = Telian O .	Olmei (Specky)			
			WELL O	CONDITION CHI	ECKLIST (raide	oppropriate kem(s), gross out il not a	applicable)		

Sovereign Consulting Inc. 9058 South Main Street, Suite 202 Mansfield MA 02048 598-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc.
4 Open Squere Way, Suite #307
Holyake MA 01040 413-540 0650

	Mansfield N 598-339		Inna des las	Vertico	Low Flow Sar	Three-	Photos			Holyoke MA 01040 413-540 0650
JECT HAM	ACONI. O	22	PROJECT LOC	tost	Deven	50		8/91		Stry-10-13
DECT NUM	BER		(inches)	ER	(leel) 2	1 6	DEPTH TO	BOTTOM	(PID READ (DEDV)	ING
W. 22	Season Co.	70000	1	-120 mm	PURGING			-	The state of the s	200
NG DIAME	TEY/J	TUBING MA	TERIAL CODE	PURGE PUN	IP TYPE			PUMP EQUIPM	ENT MODEL A SERIAL P	15
ray.		(see below)	- M			trinle	7)	GALLONS:	(LI7	ERS
			L WELL DEPTH - 5					,	~	
LL SCREEN		INITIAL	"= 0.04, 1.25 = 0.06; PUMP CIR TUBING DE	PTHIN FINAL PUMP					IG ENDED AT:	GALLONS:~3
PTH (feet):	48-57	WELL (ter)	WELL (lest)	44		11-11-	11	500	LITERS —
WATER	LEVEL STABL		DEPTH TO WATER	WITH PUMP	11_		1530		000	
IME INTER	Ball Dag Branden		(feet)	PUMP SETTING	0		DEPTH TO W	ATCR (fact)	Water Level Stable	VOLUME PURGED DU
(min)	(mL/m)	ln)		0.4			START	END	(Yes or Na)	INTERVAL (ML)
530	300	C	m4/	10,0-5	70		24.6	-	N	-
TIME	FLOW	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED OXYGEN	pH	TEMP (°C)	SPECIFIC CONDUCTIVITY	ORP (mV)	COLOR (describe)	ODOR (describe)
	(mL/min)	(feet)		(mg/L)	A 10 28444		4µ5/cm)		(Season)	(ucacina)
CO C	[100-500 mUmin)*	1+4 0.33.	1345	(+1- 10%)*	(1/- 0.1)°	0/- 1KP	11/- 74/1	(++ 10mVF	(200.000)	30.46
535	300	25.70		0.26	6.35	25.20	858	146.8	CLOUPY	NOWE
540	300	25.55	314	6.29	6.24	23.54	861	128.8	LLOUDY	NONE
545	300	25.20	983	0.37	6.20	22.93	863	118.5	LLOUDY	NONE
550	300	25.21	225	0.40	6.20	22.60	864	114-8	CLOUPY	NONE
555	300	25.18	198	0.44	6.18	22.45	863	105.2	SUBITLY WUR	A MONE
600	300	25.21	144	0.48	6.17	21.68	458	45.5	CLOUPY	NONE
			_							
-	_	-	-			-				
					-	-	-			
130.1			-		-					
									1	
			4						4 1 6	e V
			A		100		0.4			A
-										
PA stubilizac	ion parameters from	EPA/540VS-95/504	April 1996		L			-		1
0.5				A Abraha	SAMPLING	DATA	S. S. & M. S.			1500
	PRINT) / AFFILIATE			PLERISI SIGNATURE		11		SAMPL	ING INITIATED AT.	SAMPLING ENDED AT
Jona	Then C	naffer		1/1	10	Me			605	1630
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Sovereign Consulting Inc. 9058 South Main Street, Suite 202 Mansfield, MA 02048

MONITORING WELL SAMPLING LOG

Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyake MA 01040 413-540-0650

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	MARKS										

Sovereign Consulting Inc. 9858 South Main Street Suite 202 Mansheld, MA 02048

MONITORING WELL SAMPLING LOG

mm	Sovereign Consulting Inc. 4 Open Square Way. Sinla #307 Holyake, MA 01040
	Troppine, Mist 01040

Low Flow Sampling 508-339-3200 PNENS DEPTHTOWARE 413-540-9650 robiling PROJECT HAM WELL 10: SHM-10-13 5/10/2010 PIO READING (miches) (teet) (vmon) TUBING DIAMETER TUBING MATERIAL CODE PUMP EQUIPMENT MODEL & SERIAL #5 TURGE PUMP TYPE (see below) BALLONS WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Fer Foot) 075 = 002, 1 = 004, 125 = 006, 2 = 016, 3 = 0.37, 4 = 065, 5 = 1.02, 6 = 1.47, 12 = 5.68 TGALLON = 3785LITERS TOTAL VOLUME PURGED WELL SCREEN INTERVAL INITIAL PLIMP OR TUBING DEPTH IN FINAL PLIMP OR TUBING DEPTH IN FOURGING INITIATED AT GALLONS Q. 5 PURGING ENDED AT DEPTH (leet): WELL (feet) WELL (fect) 1045 69 69 WATER LEVEL STABUZATION DEPTH TO WATER WITH PUMP (feet) TIME INTERVAL PUMP SETTINGS VOLUME PURGED DURING FLOW RATE DEPTH TO WATER (feet) Water Level Stable START END (Yes or No) INTERVAL (ML) (min) (mL/min) CPM4-105/50 23.7 1015 300 TIME FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR COOR RATE WATER (NTU) OXYGEN ("C) CONDUCTIVITY (vm) (dascribe) (describe) (mL/m/n) (100-500 mL/n (mg/L) (+) 10%f (w/ 10mV) (-4- 0.3) 3-5 minul (-/. 10%)-2429 544 27.7 24.1 Limit 2.57 7.31 020 300 1025 300 59 555 39.3 7 D Limit 0.22 73.40 NONE COL 24.1 -24.1 030 DLinis 0.14 6.37 22.83 love 561 CLOUDY 035 24.1 6.24 22.31 544 -14.3 165 0.66 NONE 200 LLOVOY 040 24.12 6.14 21.48 541 -7.3 172 1.29 NONE 005 21.32 24.1 LLOUDY 151 0.81 6.09 545 -2.1 240 310 NONE EPA stabilization parameters from EPA/540/S-95/504 April 1996 SAMPLED BY (PRINT) / AFFILIATION SAMPLING DATA SAMPLING INITIATED AT SAMPLING ENDED AT SAMPLER(S) SUCHATURES 105 1050 PUMP FLOW PATE (ML TELO PARAMETER MONITORING ECCIPMENT MODEL & SERIAL HS (lent) COS FILTER SIZE OF IM FIELD-FILTERED Y (0)HELD DECONTAMINATION DUPLICATE Fill alion Equipment Type AD = Amine Glass CO : Caver Glass MATERIAL CODES PE * Palyethylana PP = Palypropylane, S * Sircone T = Tellan Q = Other (Specify) WELL CONDITION CHECKLIST (didd appropriate item(s), cross out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None Evendence of Panding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS: بمر



Sovereign Consulting Inc. 905B South Main Street, Suite 202 Mansfield, MA 02048 508-339-3700

MONITORING WELL SAMPLING LOG

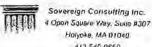


Sovereign Consulting Inc. 4 Open Square Way, Sville #307 Holyake, MA 01040

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LD DECONT	AMINATION (Y)	100.0	sea Equipment Type	THE PERSON	COST MI			DUPLICATE	* (B,)
ERIAL CODE	5. AG - Amber	Glass CG = Clean C		ene PP = Polypropyle						
	*	. 50		CONDITION CHE		a Labora de Calabra	Control American	5 - C - C - C - C - C - C - C - C - C -	10.00 AV	
	Mount / Stand			on: Good / Nee			Good / Broke			/ Broken / None
			VC7 Y / N / N Con	Is Well Pl	COLUMN A STATE OF THE STATE OF		liser: Good i	Damaged	/ None	
andenes -										

Sovereign Consulting Inc. 905B South Main Street, Suite 202 Mensfield, MA 0204B

MONITORING WELL SAMPLING LOG



Low Flow Sampling 508-339-3200 413-546-0650 Vestical Morilia DY BELIEVE Ayer 0/10/10 SHM-10-22 (feet) (vone) inches! (feet) PURGING DATA PUMP EQUIPMENT MODEL & SERIAL # TUBING MATERIAL CODE TUBING DIAMETER 1/4" (see below) Poh (SOUTHUD WELL VOLUME PURGE: I WELL VOLUME ITOTAL WELL DIPTH - STATIC DEPTH TO WATER X WELL CAPACITY WELL CAPACITY (Gallons Per Foot): 0.75 = 0.02; 1'= 0.04; 125 = 0.06; 2' = 0.16; 3' = 0.37; 4' = 0.65; 5' = 1.02; 6' = 1.47; 12' = 5.88 1 GALLON . 3.785 LITERS TOTAL VOLUME PURGED: WELL SCREEN INTERVAL DEPTH (lest): INITIAL PUMP OR TUBING DEPTHIN FINAL PUMP OR TUBING DEPTHIN PURGING INITIATED AT WELL (feet): PURGING ENDED AT 13:20 13:60 LITERS 10-12) DEPTH TO WATER WITH PUMP. WATER LEVEL STABLIZATION (leet) FLOW RATE PUMP SETTINGS Water Lavel Stable VOLUME PURGED DURING DEPTH TO WATER (feet) . (min) (mL/min) START END (Yes or No) INTERVAL (mL) FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC. COLOR ODOR CONDUCTIVITY RATE WATER OXYGEN (MTU) (°C) (mV) (describe) (describe) (InLimin) (mg/L) (feet) IN 10%F (++ 10%) (3-5 minutes) 83.9 400 7,59 13:26 6.09 16.19 306 Sa. chear none 8.78 5.94 11' 7.42 104.1 Clear 13:31 400 14.99 307 none 11, 13:30 400 7.43 5.92 14.70 306 1158 ckor 6.27 none EPA stabilization parameters from EPA/540/S-95/504 April 1996 SAMPLED BY (PRINT) / AFFILIATION: SAMPLING DATA

SAMPLERIS) SIGNATURES

[SAMPLING INTRATED AT SAMPLING ENDED AT 13:43 SovCon 13:50 PUMP OR TUBING DEPTH IN WELL SAMPLE PUMP FLOW RATE (INL per mi FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL AS: (feet) 400 PIELD FILTERED (N) FILTER SIZE _____IM DUPLICATE FIELD DECONTAMINATION (1) N (M) Filtration Equipment Type MATERIAL CODES AG - Amber Glass CG - Clear Glass PE : Polyethylene; PP = Polypropylene; 5 = Sicons, T : Tellon, O = Other (Specify) WELL CONDITION CHECKLIST (drace appropriate item(s), cross out, i not approache) oe: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Lock: Good / Broken / None Well Caps: Good / Broken / None dence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None Evendence of Panding Around Welli7 Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS:

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MONITORING WELL SAMPLING LOG

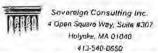


Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040 413-540-0650

ROJECTNAN	1E		PROJECT LOC	MAC MOILY	MA ICO	()		B/16	olio	MET 10- 9.9
DIECT NUM	ACOC	1.002	WEUL DIAMET		DEPTH TO WAT	ER:	DEPTH TO	BOTTOM.	(ppmv)	
A PAG	1	3	3 4 6 4			DATA"	NOTE NOW	du Const		
BING DIAMI	LUN	(see below)	Pox	PURGE PUR	ECOUM!	n		PUMP EQUIPM	ENT MODEL & SERIAL #	
			WELL DEPTH - ST					GALLONS.	Titl	RS
): 0.75 = 0.02; 1	+0.04; 1.25 +0.06;	Z = 0.16, T = 0.3	7, 4'+065 5	= 1.02, G = 1.47	: 12 = 5.60		ON = 3.785 LITERS	TOTAL VOLUME PURGE
ELL SCREET PTH (Jeel):		WELL (Is	'UMP OR TUBING DE el)	WELL (leel):		Charles and the second			NG ENDED AT.	GALLONS:
	26-22		21	101	20-3 8	3	4:00	14	4:45	LITERS
	LEVEL STABI		DEPTH TO WATER (feet)						I most a seeke	VOLUME PURGED DUR
TIME INTER (min)	TVAL FLOW F			PUMP SETTING	8		DEPTH TO W	ENO ENO	(Yes or No.)	INTERVAL (mL)
_										
	_									
							-		A	
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mL/min)	WATER (feet)	(ити)	OXYGEN (mg/L)		(.c)	CONDUCTIVITY	(mV)	(describe)	(describe)
(celular) 6 C	(100-500 mL/mky*	(41- 0.37)	(+/ 10%)-	(4/- 10%); " ~	(1/- 0.19	(i/- 190)"	(44: 43), (hz/cui)	(76 10m/y		- (-1) to
4:13	350	31,	106	0.53	6.17	13.90	439	84.2	little claudy	none
4:17	350	ລາ'	86.2	0.56	5.19	13.43	440	74.2	clear	none
1:23	360	al'	45	0.63	6.19	13.42	440	75.5	clear.	none
				17 17 17	4 - 1					
300		FIT	1 =							
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		1,000	/ -	Total Control						
							7			
										-
PA stabilizat	ion paremeters from	EPA/510/6-95/501			4	4	-			
	PRINT) / AFFILIATE		MA TO TRANS	PLER(S) SIGNATURE	SAMPLING	3 DATA	AND STORY	Isaup	ING INITIATED AT	SAMPLING ENDED AT
to the act	a property and	con		OK					4:38	14:45
	ING DEPTH IN WEL	L SAMPLE PU	MP FLOW RATE (mL p		FIELD PARAME	TER MONITORIN	G EQUIPMENT MO			
et)	21		350	-						
LD DECON	TAMINATION ()	N	1.1.2.2	DIFILTERED: (Y)	N FILTER	SIZEpm			DUPLICATE	· 🙆
TERNAL CODE	S AG « Amber	Gass EG : Oper			one, S.S. Sakora	Tallon Oa	Other (Specify)		- 1	
			WELL	CONDITION CHE	CKLIST (did	e appropriate stend	e), cross out if not a	(pplicable)		
	h Mount / Stand		General Condition				Good / Broke	en / None	Lock Good /	Broken / None
			PVC7 Y / N		umb?: Y / f		liser. Good	/ Damaged	/ None	
endence	of Ponding Arou	and Welli? Y	/ N Con	crete Collar. G	ood / Crack	ed / Leakin	a / None			



MONITORING WELL SAMPLING LOG



Maria	Mansfield, M 508-339		-	NASLIAN	Low Flow San	ispling	171		114100	Holyolie, MA 01040 413-540-0650
ROJECTNAM	Accol.c	02	PROJECT LI	Del MONTADO	Jens A	NAN		A8 BYAG	0)10	344-10-93 METT 10
JJECT NUM	MER		WELL DIAMI	ETER	(feet)	1	DEPTH TO	BOTTOM.	PID READ!	NG.
SECTION.		134 3-6	1000	107		DATA	1776 D.C. W.	1000		- 2 3 3 2 3 2 3 2 5 3 5
BING DIAME	IU"	TUBING MA (see below)	PON CODE	PURGE PUI	CODUM	1		PUMP EQUIPM	MENT MODEL & SERIAL #	
		VOLUME (TOTA	L WELL DEPTH -	STATIC DEPTH TO W				GALLONS	LITE	RS
				6. 2'=0.16, 3'=0.3					ON = 3 785 LITERS	TOTAL VOLUME PURGE
PTH (1864)		WELL (WELL (foel)		Transfer of the Control of		1000	NG ENDED AT:	GALLONS:
,2	50-32		81		-333		14:55		6:31	LITERS
	LEVEL STABL	44.00	(feet)	M. 100			I officer		Water Level Stable	VOLUME PURGED DURI
TIME INTER	IVAL FLOW R			PUMP SETTING			DEPTH TO W	END END	(Yes or No)	INTERVAL (mL)
	_								-	
	-	-								
	_	-			-		-			
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	DDOR
	RATE	WATER	(NTU)	OXYGEN (mg/L)	700	(°C)	CONDUCTIVITY	(mV)	(describe)	(describe)
3-S minutea)*	(mUmin) (100-500 mUmin)	(ha)	1+/- 10%r	(+k 10%)-	(+/- 0.1)	(+/- 326)*	(4/- 5%)*	(+/- 10/aV)-	F 12	
18.04	476	31	191	0.67	(6.80)	13.12	764	75.5	hitte cloudy	none
5:D8	475	31'	81.2	0.64	6.21	13.37	767	71.7	ckar	none
513	475	31	64.0	0.72	622	13.22	766	68.1	Clear	none
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Ustra A	PRINT) / AFFILIATIO	NO DESCRIPTION OF THE PROPERTY	ISAI	APLER(S) SIGNATURI	SAMPLING	DATA	water the	SAUD	LING INITIATED AT	SAMPLING ENDED AT
WILLE O. D.	THE RESERVE OF THE PARTY OF THE	vcan	, and	OK					5:16	15:31
	ING DEPTH IN WELL		MP FLOW RATE (ML	per minute):	FIELD PARAMET	ER MONITORIN	G EQUIPMENT MO			10.01
	ollo	4	75							
3		N	1.0	Abon Equipment Type	N FILTERS	SIZE jim			DUPLICATE	* O
5	AMINATION (V)		1.110	Charles of the Print of the Parket	ene 5 = 5icone	To Telian O =	Other (Specify)			
LD DECONT		Glass CG = Clear	Cless, PE - Polyeth	yene. PP · Polypropy						
		Gless CG ≥ Clear		CONDITION CHE		oppropriate item	(6), cross out il not il	pplicable)		
ED DECONT			WELL		CKLIST loads		(e), cross out if not in Good / Broke		Lack: Good /	Broken / None
DECONT FERIAL CODE: DE: Flush dence of	h Mount / Stand	l Pipe ween Sleel & I	WELL General Condit PVC? Y / N	CONDITION CHE tion: Good / Nee Is Well P	CKLIST (orde eds Repair umb?: Y / N	Well Caps: PVC F	Good / Broke	n / None		Broken / None
TERIAL CODE: DE: Flush dence of	h Mount / Stand Rain Water Beh	Pipe ween Steel & I nd Welli? Y	WELL General Condit PVC? Y / N / N Co	CONDITION CHE	eds Repair umb?: Y / N lood / Cracke	Well Caps: PVC F	Good / Broke	n / None		Broken / None

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Sovereign Consulting Inc. 9058 South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG Low Flow Sampling

Desmed Positive DP1



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke MA 01040 413-540-0650

DATE 8/10/10 34M-10-22 PROJECT NAME DEPTH TO BOTTOM DIECT NUMBER WELL CIAMETER (feet) (eet) (emqq) PURGING DATA UMP EQUIPMENT MODEL & SERIAL IN FUBING MATERIAL CODE (see below) PO N inches) (see below) Georgiano WELL VOLUME PURGE: 1 WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Fool): 0.75 = 0.02; 1' = 0.04; 125 = 0.06; 2' = 0.18; 3' = 0.37; 4' = 0.65; 5' = 1.07; 5' = 1.47; 12' = 5.88

WELL SCREEN INTERVAL INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN PURGING INITIATED AT WELL (feet)

WELL (feet) 1 GALLON = 3.785 LITERS TOTAL VOLUME PURGED: PURGING ENDED AT GALLONS: LITERS. 16:10 40-42 DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (feet) VOLUME PURGED DURING FLOW RATE Water Level Stable TIME INTERVAL PUMP SETTINGS DEPTH TO WATER (feet) INTERVAL (mL) (Yes or No) (min) (mL/min) SPECIFIC DEPTH TO TURBIDITY DISSOLVED RATE WATER OXYGEN CONDUCTIVITY (mV) (describe) (describe) (NTU) (°C) (mUmin) (mg/L)(M2/EM) (feet) 14/- 3301 1.4 10mV) (+)- 10%)· (++ 10%) (41- 0.1)* 325 41' 08.0 431 little cloudy 16:49 181 13,46 28.5 nona 41 0.94 6.37 13.35 435 31.1 chear 332 97.6 6:53 none 434 41' 85.4 13.30 32.9 clear 15:57 385 nan 8.27 EPA stabilization parameters from EPA/540/S-95/50/r April 1996 SAMPLED BY (PRINT) / AFFILIATION SAMPLING DATA

SAMPLER(S) SIGNATURES

SAMPLING INTRAFED AT SAMPLING ENDED AT Sorcon 16:00 16:10 ELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #5 SAMPLE PUMP FLOW RATE (ML per minute) FIELD-FILTERED (7) FILTER SIZE ______im FIELD DECONTAMINATION (1) N DUPLICATE 0 Filtration Equipment Type MATERIAL CODES AG = Amber Glass, CG > Creer Grass, PE = Polyathylene PP = Polygropylene, S = Sicons T = Teton G = Other (Specify) WELL CONDITION CHECKLIST (circle appropriate tem(s), cross out if not appricable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None idence of Rain Water Between Steel & PVC? Y / N. Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Well? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS: GP-10-22 -041-5

Sovereign Consulting Inc.

Sovereign Consulting Inc. Holyake MA 01040

MONITORING WELL SAMPLING LOG 9058 South Main Street, Soite 202 4 Open Square Way, Suite #307 Mansfield MA 02048 Low Flow Sampling 508-339-3200 413-540-0650 PROJECT NAME ROJECT LOCATION SHM-10-22 DEVENS/AVEY OJECT NUMBER WELL DIAMETER DEPTH TO BOT ACOO! (feet) (ppmv) PURGING DATA PUMP EQUIPMENT MODEL & SERIAL MS TUDING MATERIAL CODE TUBING DIAMETER PURGE PUMP TYPE 114" (see below) Poly Geopump GALLONS VELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Foot) 075 = 0.02; 1'=0.04; 1.25 = 0.06; 7 = 0.16; 3'=0.37; 4'=0.65; 5'=1.02; 6'=1.47; 17'=5.88 I GALLON = 3.785 LITERS TOTAL VOLUME PURGED: PRITIAL PUMP OR TUBING DEPTH IN PINAL PUMP OR TUBING DEPTH IN WELL (feet) WELL SCREEN INTERVAL PURGING INITIATED AT PURGING ENGED AT GALLONS DEPTH (feet): 17:00 50-52 16:18 LITERS. DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (teel) FLOW RATE TIME INTERVAL PUMP SETTINGS DEPTH TO WATER (feet) Water Level Stable VOLUME PURGED DURING (ml./min) (Yes or No) INTERVAL (mL) DISSOLVED DEPTH TO TURBIDITY TEMP SPECIFIC COLOR FLOW DH DRP ODOR RATE CONDUCTIVITY WATER (NTU) OXYGEN (°C) (mV) (describe) (describe) (mL/mln) 0-500 mL/m (mg/L) (1/- 3%)* (feet) (+/- 10%) 11/- 3% (3-5 minutes)* 511 16:19 425 4).000 0.71 6.49 4.18 583 -8.4 cloudy none 0.78 425 51 6.52 585 cloude 13.64 30.O 706 none 145 16:35 425 51' 0.83 6.5a 13.72 587 201 little cloody none 585 425 0.88 13.57 16:40 63.5 6.55 20.9 clear Pi. ngno

EPA stabilization parameters from EPA/S40/S-95/504 April 1996 SAMPLING PATA
SAMPLENS) SIGNATURES. | ISAMPLING INITIATED AT STATE OF THE PARTY SAMPLING ENDED AT Sorcon 16:45 17:00 PUMP OR TUBING DEPTH IN FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #5 FIELD-FILTERED (Y) FILTER SIZE ____ jim FIELD DECONTAMINATION (V) 0 DUFLICATE Fivation Equipment Type. PE + Polyalitylena: PP = Polyaropylena S = Sricone T + Telian O = Other (Spacify) MATERIAL CODES AG = Amber Glass CG + Ciner Glass. WELL CONDITION CHECKLIST (carde appropriate item(s), cross out it not applicable)

-pe: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None ridence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None

Evendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None

REMARKS:

GP-10-22-051-F

Sovereign Consulting Inc. 3058 South Main Steel, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG

Low Flow Sampling



Sovereign Cansulting Inc. 4 Optin Square Way, Suita #307 Holyoke, MA 01040 413-540-0650

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Sovereign Consulting Inc. 9058 South Main Street, Soite 202 Mansfield, MA 07048

MONITORING WELL SAMPLING LOG



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Sences FOR TUBING DEPS HIS WELL SAMPLE PUNIP FLOW RATE (mit. per Insulan) PIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL AS: DID DECONTAMINATION 1/2 N FINAL CODES ACT = Armoni Grass CG = Crear Grass PE = Polyatorysina S = Sakonia T = Turion; D* Oliver (Specify) WELL CONDITION CHECKLIST (oude appropriate item(s), cross could not applicable) The Condition in Good / Needs Repair Well Caps. Good / Broken / None Lock. Good / Broken / None dence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?* Y / N PVC Riser: Good / Damaged / None TABLES.	4:W15?	事がとなる	多MA (2018)	3540 L 93			DATA	- 7-76 L		A. 2		
P OR TUBING DEPSH IN WELL SAMPLE PUMP FLOW FRITE (I'LL per Installa) PIELO PARAME I ER MONITORING EQUIPMENT MODEL & SERIAL #8 25	AMPLEO BY			SAM		S			SAMPL	O:30		
FIELD FILTERED (2) N FIELD FILTERED (2) N FILTER SIZE	UMP OR TUI	Commence of the Commence of th		LIMP FLOW RATE IML		INELD PARAME	FA MONITORIN	IG FOURMENT MO	DEL & SERIAL	and the second second second	1.44	
DUPLICATE Y NOTICE OF PILITERED ON FILTER SIZE					ing summer	, nace (monne)	LI, MOUNTOIN	D COME INC.	Section 5			
WELL CONDITION CHECKLIST (order appropriate temple), cross out if not applicable) e: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None dence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None midence of Ponding Around Well? Y / N Concrete Collar: Good / Cracked / Leaking / None				FIEL		N PLIER	Sizeum		_	DUPLICATE	· CA	
WELL CONDITION CHECKLIST (order appropriate item(s), cross certif not applicable) e: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock. Good / Broken (None dence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None moderate of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None	20.00	The second section				anh 9 a Sudane	T = Talles D =	Other (Street a)		- Contraction	0	
e: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None dence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None moderate of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None	THE GOL	MO - MITON	- 400 CO - CIE	200					oppicatio)			
dence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None Indence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None	ype: Flu	sh Mount / Stan	d Pipe					77 - 71		Lock. Good	Broken / None	
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MARKS:			und Welli? Y	IN Cor	icrete Collar: G	Good / Crack	ed / Leakir	ng / None				
GP-10-25-025-F	EMARKS	,	Cas	P-10-	25-0	25-	<u> </u>					



Sovereign Consulting Inc. 905B South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Halyoka, MA U1040 413-540-0650

PROJECT LOCATION "TOUECT NAME 8/10/10 SHW-10-25 WELL DIAMETER LIECT NUMBER DCc01 (lect) (sigmy) PURGING DATA COLLEGE OF SHORE TUBING MATERIAL COOP PUMP EQUIPMENT MODEL & SERIAL RS. (see below) Poly Georyumo WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Fool) 0.75 = 0.02; 1' = 0.04; 1.25 = 0.06; Z = 0.16; 3' = 0.37; 4' = 0.65; 5' = 1.02; 5' = 1.47; 12' = 5.89 1 GALLON = 3,785 LITERS TOTAL VOLUME PURGED INITIAL PUMP OR TUBING DEPTH IN FRIAL PUMP OR TUBING DEPTH IN PURIGING INITIATED AT WELL SCREEN INTERVAL PURGING ENDED AT GALLONS: 34-36 35 34-36 LITERS: 10:30 DEPTH TO WATER WITH PUMP. WATER LEVEL STABLIZATION TIME INTERVAL FLOW RATE PUMP SETTINGS DEPTH TO WATER (feet) Water Level Stable VOLUME PURGED DURING (mt/min) (Yes or No) INTERVAL (mL) (min) TIME FLOW DEPTH TO TURBIDITY DISSOI VED TEMP SPECIFIC DRP COLOR DDOR RATE WATER (MTU) DXYGEN (°C) CONDUCTIVIT (mV) (describe) (describe) (milimin) (mg/L) (feet) (+/- 10%)* (4/- 0,1) 1-/- 291 Fee somer (3.5 minutes) [4/- 0.3) 35 600 5.95 cloude 9:53 425 13.86 726 1.06 71.1 none 5.94 1.37 737 67.2 10:05 425 35 392 13.87 claudi none 10:12 36' 69.2 שרב 12.98 746 425 5.93 Cloud none 1.60 745 little claids 69.3 425 36' 223 1.69 5.94 13.10 10:17 none EPA stabilization parameters from EPA/SAOIS-95/504 April 1996 SAMPLED BY (PRINT) / AFFILIATION AMPLING DATA

AMPLING SIGNATURES: | SAMPLING INITIATED AT Sovcan 10:19 10:30 PUMP OR TUBING DEPTH IN WELL ISAMO E PUMO FLOW BATE INL. per FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #S: (teet) FIFLD FILTERED (Y) FILTER SIZE ______ FIELD DECONTAMINATION: Mela IS 0 Filization Enurament Type MATERIAL CODES CG = Ouer Glass PE = Polyethylene PP = Polypropylene, S = Salicone T = Tellon O = Ok-es (Specify) WELL CONDITION CHECKLIST (circle appropriate term(s), cross out if not applicable) pe: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Wall Caps: Good / Broken / None Lock: Good / Broken / None dence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Welli? Y / N Concrete Collar, Good / Cracked / Leaking / None REMARKS: GP-10-25-035-F \$ DUP-08/010- F



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Districta	Mansfield_1 508-339	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Westin	Low Flow San	mpling	- 100		100	Holyake, MA 01040 413-540-0650
ROJECT NAI	Acoolo	107	PROJECT LC	DELY DELY	1 4 -	vic l	7	DATE 8/	0/10	SHM - 10-25
OJECT NUI	MBER-	200	WELL DIAME (inches)		DEPTH TO WATE		(leet)	воттом	PIO READI	
		13	- Lo : :		PUBGING	DATA	de la servicio	ii (Sant)	18 1 2 1 2 1 2 1 2 1 1 2 1 1 1 1 1 1 1 1	
ches))	ETER 14"	(see below)	Poly	GED.	PTYPE			PUMP EQUIPA	HENT MODEL & SERIAL IN	
	1	VOLUME: (TOTAL	WELL DEPTH - 5	STATIC DEPTH TO WA		CAPACITY		GALLONS.	Life	ERS:
	ITY (Gallora Per Fool N INTERVAL			EPTH IN FINAL PUMP					ON = 3.785 LITERS	TOTAL VOLUME PURGE GALLONS:
PTH (leet)	Lacron of the	WELL (Is	et)	WELL (feet)	46'4		0:40	1 1 1 1 1 1 1 1	[:[]	LITERS:
WATER	44-46 RLEVEL STABL	JZATION I	GEPTH TO WATER		70-4	2	0.40	1	4.11	
TIME INTER			(feat)	PUMP SETTING	\$. —	DEPTH TO W	ATER (feet)	Water Level Stable	VOLUME PURGED DUR
(min)	(mL/m	şú)					START	END	(Yes or No)	INTERVAL (mL)
_		-	-					_		
						0 1				
TIME	FLOW	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	pH	TEMP (°C)	SPECIFIC	ORP (mV)	COLOR (describe)	ODOR (describe)
3-5 minutes)*	(mL/min) (100-500 mL/min)	(feet) (+1- 0.37)*	- (e/- 10%)-	(mg/L)	(4A 0.1)*	[6/- 210]-	(pS/cm) (*/- 3%)*	(+/- 10mV)		
0:45	400	45'	871	111 ECR	6.410	18.16	618	56.7	cloudy	none
0:50	YOU	45	283	1.12	6.53	PA.CI	604	-76.4	littlecloude	
0:55	400	46'	175	1.17	6.54	13.80	623	-73.8	little cloudy	
11:00	400	45'	130	1.13	6.56	12.86	622	-74.4	little cloudy	none
			44.4							200
50 T										
				-						
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			1	a t		-		-	2.5	
-				1					-	
PA stabilizati	ion parameters from E	PN540/5-95/504 A	April 1996	J				1		
	PRINT) / AFFILIATIO	AND SELECTIVE CONTRACTOR	40	PLEMS) SIGNATURE	SAMPLING	DATA		1000	UNG INITIATED AT	SAMPLING ENDED AT
will record to	Souce		3.66	OK.				100	1:06	11:11
	ING DEPTH IN WELL		P FLOW RATE (ML		FIELD PARAMET	ER MONITORIN	G EQUIPMENT MC		Comments of the comments of th	I constant
4	15	1	100							4
LD DECON	TAMINATION (E)	N		O-FILTEREO: (Y)	N FILTERS	IIZE IIM			NOTO 13	Q "
ERIAL CODE	ES AO - Amber	Class CG - Ches C	A STATE OF THE STATE OF	iene. PP = Polypropyle					11021031	
	F 11. 10 7 10 1	(Mar	Entra Control of the	CONDITION CHE					rash de la	
2000	h Mount / Stand Rain Water Beh			ion: Good / Nee	ds Repair umb?: Y / N		Good / Broke Riser: Good			Broken / None
				ncrete Collar: Gi				Dainadeo	TNUNE	
MARKS:	(P-10.	85-0	46 -F				010	-	
				- U	B	Our	9-08	010 -	¥	
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TOJECT NAM	E.	. 0	PROJECT LOC	ATION A		+I IIII	-Protos	DATE	. Dec	WELL ID
SUECT NON	Acost-0	02	WELL DIAMET	Fost De	DEPTH TO WAT	**	(DEPTH TO		1/IO	Mm-10-15
0100100	10.		(inches)		(feet)	5.3	(loci)	40	(ppiny)	_
BING DIAME	A.49071.	THURBUS MA	ERIAL CODE	FURGE PU	PURGING	DATA	建筑等效应	PLIME FOLIEM	ENT MODEL & SERIA	S A A A A A A A A A A A A A A A A A A A
thes).	1/4	(see below)	PE			Strides				
LL VOLUM	E PURGE: 1 WELL	VOLUME (TOTA	L WELL DEPTH - ST	TATIC DEPTH TO WA	TER) X WELL	CAPACITY		GALLONS:	_	LITERS:
	TY (Gallors Per Foct		= 0.04; 1.25 = 0.06; UMP OR TUBING DE						ON = 3.785 UTERS	TOTAL VOLUME PURG GALLONS:
PTH (len!):		WELL (I		WELL (feel):					2-17	UTERS:
18/4	38-40		DEPTH TO WATER		39	- 0	2835	10	910	unens.
	1,000		(feet)	20070 200			I norminali	THE WORLD	Water Level Stabi	E TVOLUME PURGED DUR
TIME INTER	(mUm	in)		PUMP SETTING		•	START W	END	(Yes or No)	INTERVAL (mL)
2835	300	CI	m4:1	0,0-5	.0		25.30	_	N	_
		9 14								
THE 1						T. Commission	-			
TIME	FLOW	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	pH	TEMP (°C)	SPECIFIC CONDUCTIVITY	(mV)	COLOR (describe)	(describe)
3-5 minules)*	(mL/min)	(fact)	(*/- 10%)*	(*/- 10%)*	(+t- 0 1)°	(*/· 3%)*	(µ5/cm)	(++ 10mV)*		
1840	300	9526	25.35	0.63	6.19	19.09	560	-78	Clark	Pore
1845	300	6628	25.40	0.79	5.90	18.69	50	-97	8:140	Pore
620		9,427	25.45	0.31	5.89	18.63	551	-10. 3	0:14	0-
	700	7		0.0	-	The same of the same	546	-76	8.1179	none
655	700	6,476	25.35		5.86				2115	1/00
009	200	8,609	25.45	6.25	5.81	18.47	544	-37.3	51/95	Jone
302	300	7,540	25.52	0.25	5.81	17.99	543	-6.4	SIF	lone
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				-						
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							3-3-4			
-	-		-		-		-			
					-		-	-		-
PA stability at	ion parameters from	EPA/540/5-95/504	April 1996		-	ــــــــــــــــــــــــــــــــــــــ		-		
Charlette			海风的		SAMPLIN	G DATA	- 400	A. 100 in	ily agents	
-	(PRINT) / AFFILIATE	OI O	SAM	PLER(S) SIGNATURE	1	14/	/	18,400	ING INITIATED AT	SAMPLING ENDED AT
	WANTH IN WEL	hotel	MP FLOW RATE (ML)	The second second	TOTE PARAME	TER HOMITARIN	G EQUIPMENT MO	The second second	0910	10492
21)					1	7	O COOK MICH THE	DCE G DENINE		
I D DECOM	NOITAKWAT	7	FIELD	O-FILTERED Y	N FILTER	SIZE . Y. um	-		DUPLICATE	, G
Maria Account		<i></i>		oon Equipment Type		E-STORY OF THE			DUITEIGNIE	* (0)
TERIAL CODE	ES AG = Ambas	Class CG = Class		ONDITION CHE				medenblat		
me Flue	h Mount / Stan	1 Pine	General Condition	ONDITION CHE		The same of the same of	a - a street to be a second	- 1 - 1 - 1 - 1	Lock: Good	1 / Broken / None
			PVC? Y / N	And a series of the series			Riser Good			, Dioneil / Noile
			/ N Con					- Daniegeo		
MARKS						- Addition	- Trans			



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DJEET NAM	508-339	9-3200	[PROJECT LO	Vertico	M Ky	- Julia	rolos	me		413-540-0650
	ACOOL!	002		tost	Deven		lene e	8/1		SHM-10-15
OJECT NUM	BER		(loches)	ER:	(feet)	31.6	(feet)	5	The second secon	NG!
AING DIAME		TUBING MAT	DIAL CODE	PURGE PUR	PURGING	DATA	1000	OT IMP EOLIDIA	ENT MODEL & SERIAL #	ANTO CONTRACT
hes)	14	(see below)	PE	Q.	whiter/	Stuin	Las			
LL VOLUME	PURGE: I WELL	VOLUME= (TOTAL	Well Depth - S	TATIC DEPTH TO WA	TER) X WELL	CAPACITY		GALLONS		ins
LL CAPACIT). 0.75 = 0.02: 1°	MP OR TUBING OF	Z = 0.16; 3' = 0.3 PTH IN FINAL PUMP	1: 4" = 8.55; 5" OR TUBING DEF	*102 6 = 147	GINITUATED AT:		ON = 3.785 LITERS NG ENDED AT:	TOTAL VOLUME PURGE
PTH (leat):		WELL (fee		WELL (leel):	Lica		515	12.73	140	GALLONS 2. D
	LEVEL STAB		DEPTH TO WATER	WITH PUMP:	77_		012	_++	1.0	
THE INTER	re or our sale from	L.	leet)	PUMP SETTING	s		DEPTH TO W	ATER (feet)	Water Level Stable	VOLUME PURGED DUR
(min)	(mL/m		- to				START	END	(Yes or No)	INTERVAL (mL)
1012	25	0 0	MG 3 10	0-5.0	_	-	316		N	
						-				
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	рН	TEMP	SPECIFIC	ORP	COLOR	ODOR
	(mL/mln)	WATER (feet)	(UTU)	OXYGEN (mg/L)		(,c)	CONDUCTIVITY [MS/cm]	(mV)	(describe)	(describe)
5 minutes)*	(100-500 mDmin)*	(41- 0.3)	(45- 10%)*	(14 104)	(+f- 6.1)*	(0/- 3%)*	(4.3X)*	11/ 10mV)*	i and	Naci
000	250	30.6	119	0.73	6.27	19,45	585	-56.3	LOSOY	NONE
005	250	30.45	39,9	0.26	6.03	19.66	585		SUBHEY CLOS	NONE
030	250	30.48	23.6	0.22	6.00	19.24	587	-21.3	CLEAR	HONE
035	250	30.61	39.9	0.27	5.46	19.27	594	-6.0		Nove
040	250	30.70	41.3	6.45	6.00	20.69	589	-40.5	Cler	1100
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	2 2 3	N 4 1			X*	KAR	1		15	
PA SIABILIDA	on parameters from	EPA/SHVS-95/504 A	pril 1996	ernen stranspil	SAMPLING	s.harta	ar Maria	- 2020-202	Section 1852 Mileston	12.47.47.49.4
MPLED BY (PRINT) / AFFILIATIO	ON!		PLERISYSIGNATURE		111.1	25, 20210, 0.5,0.6,	SAMPL	ING INITIATED AT:	SAMPLING ENDED AT
Junus		huffee		1/	/ /	111/			045	1195
NP OR TUBE	NG DEPTHIN WEL	1. ISAMPLE PUM	P FLOW RATE (mL)	respirate)	FIELD PARAME	TERMOMITORIN	G EQUIPMENT MO	DEL & SERIAL	# \$:	
urunia	1.1		250	O-FILTERED Y	N FATER	SIZE ST IIM			Louis vano	0
	AMINATION CY		Fliva	van Equipment Type		101.5.40			DUPLICATE	, (1)
ERIAL CODE	S AG > Amber	Glass CG = Clear G			IN. S. SACONE		119-11-1-19-19-19-1	modleshiot		
ne Flue	Mount / Stan	d Pine		on: Good / Nee					Lack: Good /	Broken / None
			VC? Y / N		umb?: Y / f		Riser. Good			arener / None
A. C. L. S.				crete Coltar: G				-3360	0 00302	

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413-540-0650

ROJECTNAM	Accolor	2	PROJECT LOC		2.5	0	hotoso	DATE .	12010	SHM-10-15
OJECT NUM	IDER.	10-	WELL DIAMETE	R	DEPTH TO WATE	P 0	OEPTH TO	BOTTOM	PID REAL	OING (3
A COLUMN	26,20000	Section 1	(inches)	News Course	PURGING		(lees)	60	(opmv)	- S. T. M. 105 THE S
THING DIAME	TERVu	(see below)		PURGEPUN	TYPE /	1 - 1			ENT MODEL & SERIAL	
			WELL DEPTH - ST			Marie.		GALLONS:	10	TERS
			0.04, 125 - 0.06				12" = 5.88	1 GALLO	N = 3,765 LITERS	TOTAL VOLUME PUR
ELL SCREEN EPTH (leet):			IMP OR TUBING DEP			TH IN PURGIN	G INITIATED AT:		IG ENDED AT	GALLONS:
	58-60		59	0.000	59	1.	340	1	405	LITERS:
WATER	LEVEL STAB		EPTH TO WATER (MTH PUMP.						
TIME INTER	IVAL FLOW F	MTE		PUMP SETTING	5		DEPTH TO V	VATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DU INTERVAL (mL)
1340			my/10.	0-5	O .		542	-	1	
		С,	- Year Course							
	J									
TIME	200	I promise I	Tipp/2000	ninesi in	1	I were	DOCO PIO	000	Ani an	2222
LIME	FLOW RATE	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	рН	(°C)	SPECIFIC	ORP (mV)	COLOR (describe)	ODOR (describe)
(3-5 minules)*	(mL/min) (100-500 mL/min)*	(feet)	(+/- 10%)*	(mg/L) (*/: 10%)*	[+j- a,iy	14/ 3%(*	(9/- 200)"	(+/- 10m/y*		
1345	300	51.2	782	3.15	7.52	23.50	325	1860	aurl	None
350	300	51.8	531	4.82	8.02	22.80		164.3	CLOUDY	Rose
355	300	525	261	5.23	8,24	22.54	310	177.9	Clark	Diet
400	300	53.15	207	5.11	8.30	21.89	313	181.1	anx	Nove
100			7	27.71		DI MI		1	-	
3.17										
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		11-1-11		1						
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-		+ 0	-	-				16		
		-			-			-		
								-		-
PA slabilizati	ion parameters from	EPA/540/S-95/504 A	pril 1996			L		4		
	建设施制造规		的基础			DATA	· 在人员。	13 6	delinates.	A. Maria Br
production in the	PRINT) / AFFILIATIO	LN	SAMP	LER(S) SIGNATURE	1 /	111		1 1 1 2	HO INITIATED AT	SAMPLING ENDED AT
JCAL UMP OR TUB	ING DEPTHIN WEL	I SAMPLE PUM	P FLOW RATE (m) po	or politices 5	FIELD PARAMET	MENTORIN	IG EQUIPMENT M			1725
out.	7	and the same of the same	300	/		*				
	- 0	\N	FIELD	Carlo Carlo	N FILTERS	ize Yyum		-	DUPLICATE	* @
ATEMAL CODE		Class CG = Ocean G		on Equipment Type	ne. S = S/kone	T = Teton D =	Other (Specifie)			U
				ONDITION CHE				appocable)		
rpe: Flus	h Mount / Stand	d Pipe	General Conditio	n: Good / Nee	ds Repair	Well Caps:	Good / Brok	en / None	Lock: Good	/ Braken / None
dence of	Rain Water Bei	tween Steel & P	VC? YIN	Is Well Pl	umb?: Y / N	PVC F	Riser, Good	/ Damaged	/ None	
vendence	of Ponding Arou	and Welli? Y	/ N Cond	rete Collar: G	ood / Cracke	ed / Leakin	g / None			



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MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040 413-540-1650

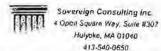
KOJECTHAM	Accol o	10.0	PROJECT LO	Severs/	hor	1		II 6 STAGE	110	SHM-10-20
DIECT NUM	BER	200	WELL DIAME	TER	CEPTH TO WATE	R		BOTTOM.		DING
market.	789	18.30	(inches)	5,90%	PURBING	DATA	Message A	1809 175tav	(topmv)	DENYS CACHER
DING DIAME	TER	TUBING MA	ERIAL CODE	PURGE PUN	IP TYPE	Ser Comment	at appreciation	PUMP EQUEPME	ENT MODEL & SERIAL	As a second
	4	(see below)			abrinda			GALLONS:	Ţu	TERS
		and the second second	Section of the State of the	37 a 1 c 0 16, 3° = 0.3			107 - 5.00	1 CAUC	N = 3.765 LITERS	TOTAL VOLUME PURG
ELL SCREEN			UMP OH TUBING DE	EPTH IN FINAL PUMP WELL (fool)		THIN PURGIN	G INITIATED AT	PURGIN	G ENDED AT	GALLONS:
PTH (leet):	10-12	Mert be	11	III I	0-12'	8	3:17	8	:45	LITERS:
	LEVEL STABL		DEPTH TO WATER	WITH PUMP:				-		-1
TIME INTER		ATE	(leat)	PUMP SETTING	S		DEPTH TO W		Water Level Stable	
(min)	(mL/m	10)	-				START	END	(Yes or No)	INTERVAL (ml.)
	-									
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	ρH	TEMP	SPECIFIC	DRP	COLOR	ODOR
	RATE (mL/min)	WATER (feet)	(NTU)	OXYGEN (mg/L)		(.c)	CONDUCTIVITY (µ5/cm)	(mV)	(describe)	(describe)
3-5 minutesy	(100-500 mL/mln)*	(4-037	(+F 10%)	(+A 10%)*	(+ 01)°	(4/- 374)*	(s/- XM)*	(+/- 10m/)*		
:54	4:25	11,	58.6	6.73	5.50	14.11	191	137.8	clear	none
:51	425	H.	6.95	6.79	5.58	14.05	133	139.0	clear	none
:31	425	III.	9.11	6.78	5.59	14.08	la3	139.4	Chear	none
							1.7	1 460		
					12.00	200		41-50		
					-					
0.5						0 xx x	400.00			
		VV	1			3		140	W	y
				3000 L						
	on parameters from E		~	anarrico a tribuna	Williams In Williams	Total Marie 1 1		- 10 - 20 D	CY 11-11-28-28	
	PRINT) / AFFILIATIO			PLER(S) SIGNATURE	SAMPLING	DATA	a. W. San V	SAMPLI	ING INITIATED AT	SAMPLING ENDED AT
	SOV	Con		ON				18	1.34	8:45
MP OR TUBI	NG DEPTH IN WELL	. SAMPLE PUT	P FLOW RATE (mL	per minuta):	FIELD PARAMET	ER MONITORIN	G EQUIPMENT MO	DEL & SERIAL #	s:	1.9.19
- 11			425	n savenen (N		-10				
LO DECONT	AMINATION (%	N		D-FILTERED (Y)	N FILTERS	ilZE jim			DUPLICATE	, (v)
TERNAL CODE	S AS = Amber	Glass CG - Cirer		lene: PP > Polypropyle	N. C. Paris		Olines (Specify)			
	- 01-2			CONDITION CHE			V - V - V			
	Mount / Stand			on: Good / Nee			Good / Broke			/ Broken / None
41.1 3. 4.	A CONTRACTOR OF THE PARTY OF TH		VC? Y / N		mb?: Y / N		tiser: Good	Damaged	/ None	
endence (or remaing Arou	no westly Y	/ IN CO	ocrete Collar: G	ood i Cracke	Team	8 / Nove			



بمر

Sovereign Consulting Inc. 9058 South Main Steel, Suite 292 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



LOWELDW Sampling
POSTING DPT FIROJECT NAME SHM-10-26 8/11/10 HECT NUMBER (feet) (leet) PURGING DATA 三十二 医原腺素 PUMP FOUIPMENT MODEL & SERIAL WS inches) 114" WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DOPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Foot): 0.75 = 0.02; 1" = 0.04; 125 = 0.08; 2" = 0.16; 3" = 0.17; 1" = 0.85; 5" = 1.02; 5" = 1.47; 12" = 5.88

WELL SCREEN INTERVAL
DEPTH (leet): WELL (leet): WELL (leet): 2 (20 - 20) 8:50 I GALLON = 3 7AS LITERS TOTAL VOLUME PURGED: PURGING ENGED AT GALLONS: LITERS DEPTH TO WATER WITH PUMP. WATER LEVEL STABLIZATION (fent) PLOW RATE VOLUME PURGED DURING TIME INTERVAL DEPTH TO WATER (feet) Water Lavel Stable PUMP SETTINGS (Yes or No) INTERVAL (mL) END (min) (mL/min) TIME TURBIDITY DISSOLVED SPECIFIC COLOR ODOR CONDUCTIVITY RATE WATER (NTU) OXYGEN (") (mV) (describe) (describe) (mL/mln) (feet) (u5/cm) C+L 0.15 14/- THI 114 10mA/V 141- 10% I++ 10%) 119 a.50 283 95.1 31, B:00 450 3,05 6.02 little clouds MONE 85.7 Char 6.04 21 52.3 2.86 12.48 none 9:04 450 84.4 12.50 275 clear 450 211 3.01 6.05 9:07 33. none * EPA stabilization parameters from EPA/S40/S-95/504. April 1996 SAMPLED BY (PRINT) / AFFILIATION: SAMPLING DATA SAMPLING ENDED AT SAMPLING INITIATED AT 9:12 Soucen 9:22 SAMPLE PUMP FLOW RATE (mt. per minute) FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL (feet) FIELD-FILTERED: FIELD DECONTAMINATION: (6) N Neta Neta 0 MATERIAL CODES AG = Amber Class CG - Clear Class. PE = Polyethylene; PF = Polypropylene. S = Sicone 1 = Tellon G > Other (Specify) WELL CONDITION CHECKLIST (circle appropriate item)(s), cross out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None idence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS: GP-10-26-0 -F 5 DWP-081110-F



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MONITORING WELL SAMPLING LOG



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ACTEC! NVV	IE.		PROJECT LO	Voluma	1104	me		DATE Q !	nllo	34 M-10-26
DIECTNUM	MER		WELL DIAME	TER	DEPTH O WAT	ER:	DEPTH TO	BOTTOM /	PID READ	124 W-10-910
and an extru		1.002	(ioches)		(feet)		(feet)	Out to the	(ppntv)	and Samuel Town
IBING DIAM	TER	TUDING MA	ERIAL CODE	PURGE PUR	IP TYPE	DATA	不少国际 20		MENT MODEL & SERIAL I	
	4"	(see below)			muse			GALLUNS	tor	ERS
		the American Consult.		STATIC DEPTH TO WA	AND A CONTRACTOR					
ell capaci ell screen				: 2'=0.18; 3'=0.3 EPTHIN FINAL PUMP	OR TUBING DEP				ON = 3.785 LITERS ING ENDED AT:	TOTAL VOLUME PURGE GALLONS:
EPTH (leel):	30-32	WELL (I	21	WELL (feet)	32'3	9	1:40	110	:04	LITERS:
	LEVEL STABI	JZATION	DEPTH TO WATER		09 01		- 10		707	
TIME INTER			(feat)	PUMP SETTING	s		DEPTH TO W	ATER (feet)	Water Level Stable	VOLUME PURGED DUR
(min)	(mL/m			1277	-	1	START	END	(Yes or No)	INTERVAL (ml.)
	_	-								-
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÷								-	-	
_										-
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	DOOR
144.5	RATE	WATER	(NTU)	OXYGEN (mg/L)		(°C)	CONDUCTIVITY	(mV)	(describe)	(describe)
3-5 minutes)*	(malmin)	(feet) (++ 0,3)*	(*A 10%)*	(*/- 10%)*	(+)- 0,17	(+/- 3K)*	(+/- 3%)"	(+/- 10mV)*		
7:45	475	31'	365	2.70	6.04	12.43	672	82.7	little cloudy	none
pu:	475	31	167	2.68	6.03	11.95	663	82.4	little cloudy	none
1:52	475	31	84.8	2.67	6.04	11.74	452	84.5	clear	none
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	deed l	A ac	×			-				
PA stubilizat	On parameters from	EPA/540/S-95/504	April 1996	A STATE OF THE STA	· managen.	v 2.50 mil 2.	- 0.055ki, 218.u	- out - 90003	Ti. 1 3 3 3 3	12-11-11-12-11-12-11-12-11-11-11-11-11-1
MPLED BY	PRINT) / AFFILIATIO	XV	SAM	PLER(S) SIGNATURE	S SAMPLING	DATA	and a second	SAMP	LING INITIATED AT	SAMPLING ENDED AT
- Carlotte	Sov Cox		(C)K				1	7:56	10:00
1.00	ING DEPTH IN WEL	SAMPLE PU	P FLOW RATE (ML	per minute)	FIELD PARAMET	ER MONITORIN	IG EQUIPMENT NO			
ei) E	31		175	- 4						
LO DECON	YAMINATION &) N	1,00	IN FILTERED (Y)	N FLTER	SIZE jun			DUPLICATE	· (6)
TERIAL CODE	ES AG = Ambei	Class CG + Clem		Salar Control of the Control	ine, S = Sikone	7 - Tollon O -	Olher (Specify)			
			WELL	CONDITION CHE	CKLIST (dide	appropriate item	(s), cross out if not a	pplicable)		
vpe: Flus	h Mount / Stand	l Pipe	General Conditi	on: Good / Nee	ds Repair	Well Caps:	Good / Broke	n / None	Lock: Good	Broken ' / None
10 PM 10 PM			VC? YIN		umb?: Y / A		Riser: Good	Damaged	/ None	
vendence EMARKS:	of Panding Arou			ncrete Collar G	ood / Cracki	ed / Leakir	g / None		-	
water to sea er.		CO-11	-96-3	-		-				

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MONITORING WELL SAMPLING LOG



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PROJECT FAMILIES PROJECT FAMI	I HAR	Mansfield, i 508-335			bezh	Low Flow Sai	mpling Dulin	TAG		(ABER	Halyake, MA 01040 413-540-0650
	ROJECT NAM	£		PROJECT LO	DEVENS	Aver		2	Shill	0	SHW-10-96
Comparison Com	DECT NUM	PACCE ARE	0 002		TER:	DEPTH TO WAT	R	(feet)	BOTTOM:		
THE PLOW DEPTH TO WHERE VEHICLES PROBLEM TO WARD DEPTH TO	Service L	AND DESCRIPTION OF THE PARTY OF	Market Co.			PURGING	DATA		uring the said		OFFICE SPACE
LINGUISTIC PRINT, VOLUME (1971) WAS LINGUIST - STATE CERTIFITY WAS LINGUIST OF THE PARTY OF TH			(see below)	PALU					PUMP EQUIP	MENT MODEL & SERVAL #	E.
Description Description				77-7-1			CAPACITY		GALLONS:	rū	ERS:
MATER_LEVEL STABLEATION DSPITI TO WATER WITH PAUR			; 0.75° = 0.02 1	+0.04; 1.25 = 0.06	2"=0.16; 3"=03	7; 4"=065; 5"					TOTAL VOLUME PURGE
## PLANS PLA			MEIT (PUMP OR TUBING DE (al):		OR TUBING DEP			0.000		
	WATER		I TAYON	CONTRACTED	1414	0-49	1	0:10		0.30	LITERS:
	2 - 1 - 1		263137574					I promised to	745 n n n	I deletes I and Classe	Tree time or topics over
RATE Control					PUMP SETTING	•					INTERVAL (mL)
NATE SAMPLE PRINT PRIN											
NATE (MATER)	_								-		-
NATE (MILTIN) (M		_	_								-
NATE (MILTIN) (M		-	_				_				+
Common C	TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	DDOR
100-50 m.tmm				(NTU)	The second second		(°C)		(mV)	(describe)	(describe)
A STANDARD PRINTED PRI	-	[100-600 ms/mm]*	141- 0.31		(*/- 10%)*			(+/- 3X)·			
A STANDARD PORT DATA A STANDARD PORT DATA A STANDARD PORT DATA A STANDARD PORT DATA BANDARD SOCIAL SOCI											
A STANDED OF PRINTING APPLICATION SAMPLING DATA S):53										
A SIAMELING parameter from EPASSASS \$500 April 1998 PLED BY PRINTY (AFFELIATION: SAMPLING DATA 10:40 10:50 DO DOCCONTANINATION: N TRUE PLUMP FLOW RATE (IIII. par minute): PRESCHERED N FREED PRINTY (FREED N FREED PRINTY (FREED N PRESCHERED N FREED PRINTY (FREED N FREED N FREED PRINTY (FREED N FREED N FREED PRINTY (FREED N FREED N FREED PRINTY (FREED											
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POR TUBING DEPTH IN WELL SAMPLE PUMP FLOW RATE (mit. per nutule): FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #8: U Sample Pump Flow Rate (mit. per nutule): FIELD PARAMETER MONITORING EQUIPMENT MODEL & SERIAL #8: DEPTH DIPLICATE: Y N FRILD CODES: AB = Aniber Gless: CG = Clear Gless: PE = Polyadrylane: PP = Polypropylane: S = Silicane: T = Tallich: O = Other (Specify) WELL CONDITION (CHECKLUS TO Apple appropriate transport of the polypropylane: S = Silicane: T = Tallich: O = Other (Specify) WELL CONDITION (CHECKLUS TO Apple appropriate transport of the polypropylane: S = Silicane: T = Tallich: O = Other (Specify) WELL CONDITION (CHECKLUS TO Apple appropriate transport of the polypropylane: S = Silicane: T = Tallich: O = Other (Specify) WELL CONDITION (CHECKLUS TO Apple appropriate transport of the polypropylane: T = Tallich: O = Other (Specify) WELL CONDITION (CHECKLUS TO Apple appropriate transport of the polypropylane: T = Tallich: O = Other (Specify)			A THE PARTY OF THE PARTY OF	SAM	PLER(S) SIGNATURE			A SECTION OF THE PARTY OF THE P	30,000		SAMPLING ENDED AT:
PRELOFIT. TERED: // N FILTER SIZE:			100000	The same of the same						A. St. M. A. C. C.	10:50
D DECONTAMINATION: (*) N FILTER SIZE:		NG DEPTH IN WELL			er minute);	HELD PARAMET	ER MONITORIN	G EQUIPMENT MOD	DEL & SERIAL #	9.	
RIAL CODES: AG = Aniber Gless; CG = Cless Gless; PE = Polyschylene; PP = Polyschylene; S = Sisteene; T = Yather; CD = Other (Specify) WELL'CONDITION GHECKUST Complete population from (2 most out a not societable) Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps; Good / Broken / None Lock: Good / Broken			1.7	FIEU	D-FILTERED: (1)	N FILTER S	IZE µm	-		in the second	
WELL CONDITION CHECKUIST (true approximation) cross of a non-sectional (true). Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken				Filtra	tion Equipment Type:	11111				DUPLICATE:	, (4)
e: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken									de le al·la la la la con	Albania Tolling Colonia	
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ndence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None		of Ponding Aro	und Welli7 Y	/ N Co	ncrete Collar:	Good / Crac		Commence of the Commence of th			
MARKS: GP-10-86-041- F	MARKS:	GP-	10-2	6-041	- E						

Sovereign Consulting Inc. 905B South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Helyoko, MA 01040 413-540-0650

	Mansfield, 508-33		1	ics heal	Posil	M -	TAC		619 (51)	Holyoka, MA 01040 413-540-0650
ROJECT NAME			1000	Dave	ns/Avev	0		BATE 8	1/10	2HW-10-96
OJECT NUM	BER: ACOO	1.002	(inches)	TER:	(feet)	R.	(feet)	воттом:	(ppmy)	NG:
A STATE OF THE PARTY OF THE PAR	a water agent th	e day il	TERIAL CODE	PURGE PU		DATA	(A.O.M.) (A.M.)		ENT MODEL & SERIAL #5	(15)的现在形式的
	Ϊμ ^u	(see below)	Poly	PORGE PO	CODUM	n		700.2200	ACM MODEL & SERVAL HIS	
IT AOTAME	PURGE: 1 WELL	VOLUME = (TOT/	IL WELL DEPTH - :	STATIC DEPTH TO W	TER) X WELL O	CAPACITY		GALLONS:	ψπ	RS
LL CAPACIT				2 = 0.16; 3" = 0.5					ON = 3.785 LITERS NG ENDED AT:	TOTAL VOLUME PURGE GALLONS:
PTH (feet):		MEIT ((set):	WELL (last):		2017	the property of the state of	-	:97	LITERS:
	SO-52 LEVEL STAB	LIZATION	DEPTH TO WATER	WITH PUMP:	50-5	1	0:55	101	.0 1	
TME INTERV			(fact)	PUMP SETTING	S	_	DEPTH TO W	ATER (feel)	Water Level Stable	VOLUME PURGED DUR
(min)	(mL/h	ain)					START	END	(Yes or No)	INTERVAL (mL)
	+	-								-
	+	-	No.					-		
	+	_								
									-	
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	(mL/min)	(Test)	(NTU)	OXYGEN (mg/L)		(°C)	CONDUCTIVITY (µ5/cm)	(mV)	(describe)	(describe)
5 minutes)*	(100-500 mL/min)*	[+F 0.3]*	(+/- 10%)*	(+/: 10%)*	(*/- 0.1)*	(>/- 5%)*	(+/- 3%)*	(x/- 10mV)*		160
: 00	3715	511	167	0.92	6.a5	13.14	484		little cloudy	none
a	375	51'	860	0.98	6.a7				ckar	none
12	375	51'	76.)	1.03	6.97	13.65	485	36.3	clear	none
							F			
					1 = 11				4	
						11.00				
					1-2-1					
- 1	Track!				Jan 1					4 4 4
	* ***									
stabilization	parameters from E	PA/540/S-95/804	April (998							
	A TOWN	2000年		LER(S) SIGNATURE	SAMPLING	DATA	建 加州的		ING INITIATED AT:	
PLEO BY (PA	RINT) / AFFILIATION	Con	SAM	(S) SISPATURES					1:15	II: 22
	G DEPTH IN WELL		MP FLOW RATE (mL p	er minute);	FIELD PARAMETE	R MONITORING	EQUIPMENT MOD	manufacture of the same of the	and the second second	11.00
5	SI .	2	575	_						
DECONTAI	MINATION: (5)		FIELD	OFILTERED Y I	FILTER SI	ZE:pm			DUPLICATE	Y (N)
NAL COOKS		Gless; CG = Clear		ine; PP = Polypropyle	na, S=Silicona,	T=Teffor; O=1	Other (Specify)			
			the state of the s	ONDITION CHE			The second secon	philatelyfetyses		100
	Mount / Stand			ion: Good / Ne	eds Repair	Well Caps	Good / Brol	en / None	Lock: Good	/ Broken / None
			PVC7 Y / N		lumb7: Y / 1		Riser: Good	/ Damage	d / None	
ndence of	Ponding Arou	ind Welli? Y	/ N Co	ncrete Collar: C	Good / Crack	ked / Leak	ing / None			
ARKS		- 1	-26-1							

Sovereign Consulting Inc. 9058 South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040 413-540-0650

ROJECT NAM	508-339 E:	2702	PROJECTION	CATION _		Riling	-Dr	DATE 1	l.a	413-540-0650 WELL ID:
ROJECT NUM	BEA:		WELL DIAME!	Deve	DENTH TO WAT	EFC	DEPTH TO	11 8 IN	IPID READI	SHM-10-26
^	C001		(Inches)		(feet)	- 9	(feet)	describe.	(ppmv)	
BING DIAME	TER	Truging M	TERIAL CODE	PURGE PU	PURGING	DATA	e du la seguinta		(ENT MODEL & SERIAL #s	
	q "	(see below)			Obinub			OALLON9:	Ti tre	RS:
COCCO MALTINE	Contract of Manager	0.0000000000000000000000000000000000000	AL WELL DEPTH - S	C-Q-CHCHCHCCC	Control of the Contro	*, 1.05, 57.5		110.00		
LL SCREEN		INITIAL	1" = 0.04; 1.25" = 0.06 PUMP OR TUBING DE	PTHIN FINAL PUM	P OR TUBING DEP		G INITIATED AT:		ON = 3.765 LITERS NG ENDED AT:	TOTAL VOLUME PURC GALLONS:
PTH (feet):	600-62	WELL ((0)	WELL (feet)	6a'ce	1 1	1:05	k	9:15	LITERS:
WATER	LEVEL STABL	IZATION	DEPTH TO WATER			-				
INE INTER			(feel)	PUMP SETTING	S		DEPTH TO W		Water Level Stable	VOLUME PURGED DU
(min)	(mL/ml	n)					START	END	(Yes or No)	INTERVAL (mL)
			*							
TIME	FLOW	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	pH	TEMP (°C)	SPECIFIC	(mV)	COLOR (describe)	ODOR (describe)
	(ml/mln)	(feet)		(mg/L)	10. 210		(uS/cm)	10.00	(corazo)	(duacine)
1:44 1:44	385	61,	610	1.00	6.43	13.18	766	1.8	Cloudy	none
1:50	885	61'	41,000	1.20	6.42	10.73	769	4.7	cloudy	nona
:54	325	61'	41,000	1.a5	6.43	12.87	773	-9.9	cloudy	none
03	325	611	376	1.49	6.45	19.74	791	-6.8	little Clouds	
203	500	(L)	310	41	10.45	1414	141	0.7)	Three Cloudy	11016
-				-				1		
-				1						
-			-						1	
-				-				-		1
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-							-			
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\rightarrow		_	-	-	-	-	-	-		
				-		-	_			
-										
-	1					-				
-					1	8				
A etablicatio	on parameters from E	DA/SAD/P OS/SDA	April 1008	V						
	COLUMN TOWN	CONTRACTOR OF	April 1990		SAMPLING	DATA	and the latest			
PLED BY (P	RINT) / AFFILIATION	J.		LERIS SIGNATURE				SAMP	ING INITIATED AT:	SAMPLING ENDED AT:
D OR THE	SOVC 4G DEPTH IN WELL		MP FLOW RATE (IIIL p	CAK_	TEICI FI DADAME	CER MONITORING	EQUIPMENT MOD		2:00	12:15
	el		325	LI MILLION,	TICLES Y PROSPEC	ZIT INOTHING	CODII INCIE INCIE	DEC S DECORDE		
		N	FIELD		N FILTERS	ilze: µm			DUPLICATE	v (9)
ERIAL COORS	-			ion Equipment Type:	one: Separate	Telan C-	Other (Species)		DOT CIONTE	Ü
	ACI = Amber (The second of the second	region for the contract of the	ONDITION CH				ripaca biti)	NY KARATAN-A	day the Company
	Mount / Stand	Control of		ion: Good / Ne			Good / Bro			/ Broken / Nov
			PVC? Y / N		Plumb?: Y /		Riser: Good			
			IN Co	ncrete Collar:		The second secon	and the second second			

Sovereign Consulting Inc. 9058 South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulung Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040 413-540-0650

ROJECT NAM	50R-3	13-3200	PROJECT LO	Ver he	1. 245	Pilips	-DPI	DATE .	F. 4	413-540-0650 WELL ID:
ROJECT NUM	BER.	-	WELL DIAM	Devens	DEPTH TO WAT	ER.	DEPTHIO	BOTTOM:	IND THO READ	2HW-10-90
	ACC	21	(inches)		(teat)		(fact)		(ppmv)	
BING DIAME	TER	TUBING M	ATERIAL CODE	PURGE PU	MP TYPE	DATA		PUMP EQUIP	AENT MODEL & SERIAL P	nation existing and e
ches):	14"	(ann below	Paly	60	dumb			100 - D	200,414,3636	
ELL VOLUME	PURGE: 1 WELL	VOLUME - (TO)	AL WELL DEPTH -	STATIC DEPTH TO W	ATER) X WELL	CAPACITY		GATTONS:	UI	ERS
ELL CAPACIT		0.75° = 0.02;	1" = 0.04; 1.25" = 0.0 PUMP OR 1UBING DI	6; 2'= 0.16; 3'= 0.	37. 4" = 0 65. 5"	= 1.02; 6'= 1.4. THIN TO DESIGN	7; 12° = 5.88		ON = 3.785 LITERS ING ENDED AT:	TOTAL VOLUME PURG GALLONS:
PTH (feet):		WELL	(feat).	WELL (foot	10.70	1		10000	: 98	LITERS:
	LEVEL STAR	N. ITATION	DEPTH TO WATER	Z WITH DUMP	10	71	5:97		.00	and.
			(feat)	PUMP SETTING	10		DEPTH TO W	arrive at	I Waterland States	IVOLUME PURGED DU
(min)	(mL/			FUMF SETTING	30		START	END	(Yes or No)	INTERVAL (mL)
	_									
	_									
mue I	Conti	Lacontro	T minorary	Latenation	1	1 7540	normend	200		
TIME	FLOW	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	pH	TEMP (°C)	SPECIFIC CONDUCTIVITY	ORP (mV)	COLOR (describe)	ODOR (describe)
-5 minutos)*	(mL/min) (100-500 mL/min)*	(feet) (+1-0.3)*	(+/- 10%)*	(mg/L)	(+6 0.1)*	1-7- 243*	(N2/cm)	(*/- 10mV)*		
₩.36	400	nı'	41,000	0.90	6.59	14.00	860	-12.6	cloudy	none
1:42	400	711	41,000	1.01	6.59	14.08	861	-26.9	cloudy	none
	400	71	1	0.95	6.58	13.96		-36.1	cloudy	
247	400	11	<1,000	0.45	0.55	15.70	800	-30.1	Livery	none
			-					-		
				1011	-					-
										-
					V.					
							0 = 11			
							1	1.400		
									-	
							-	U		
				- 2					-	
				_	-			-		
A stabilization	n parameters from	EPAISIONS SINSON	April 1998	L						1
		Contraction of	100		SAMPLING	DATA	06 TO ST 128	經過新	扩展的图象 1899 的	
PLED BY (P	RINT) / AFFILIATIO		SAM	PLER(S) SIGNATURE	S			1000	ING INITIATED AT:	SAMPLING ENDED AT
0.00 7 100	SOVC		HOELON DATE (E)	9R	Tries to page 1157	En MONTONINO	Chambles v mon		1:15	1.98
):	G DEPTH IN WELL	400	IMP FLOW RATE (ML)	or minuta)	FIELD PARAMET	EN MUNITOHUNG	EQUIPMENT MOD	IL & SERIAL III	Y	
ALLEAD.	(()			D.FILTERED. (Y)	N FILTERS	ZEμπ			Tours a	7
	UMINATION: (V)		Film	tion Equipment Type:	0.00				DUPLICATE	* (N)
THAL CODES		Glass; CG = Class			ene, S = Silicone;		Other (Specify)			
		CONTRACTOR OF THE PARTY OF THE	General Condi			T. 425 T. 7. 7.	THE RESERVE OF THE RE	10.74		/ Broken / Ma
	Mount / Stan Rain Water Be	Tak Tak	PVC? Y / N	tion: Good / Ne	Plumb?: Y /	o market with	Good / Bro		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	/ Broken / Non
		und Welli? Y		ncrete Collar:	1 T T T T T T T T T T T T T T T T T T T	with the second second		· Semage	7 130110	
endence o	I FUILWING MOU	MINE AACHEL								

Sovereign Consulting Inc. 9050 South Mein Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



国籍	Mansfield, 508-33			1200/2001	Low Elow San	mpling	TRO		1	Holyake, MA 01040 413-540-0650
ROJECT NAM			PROJECT LO	CATION DOW	LOS AVE	ro	,	DATE: 8/1	1/10	SHM-10-09
ROJECT NUM	ACCO	1.602	(inches)	TER	(feet)	P	(fint)		(ppmv)	
More to Talk		STATE OF STATE OF	Service Control of the 4.000000000000000000000000000000000000	PURGING	DATA	2.15	ni rejadi		进行发生40分别众	
BING CHAME	4"	(see below)	PON	SURGE PU	bmwi			PUMP EQUIPM	ENT MODEL & SERIAL I	*
ETT AOT ME	E PURGE: 1 WELL	VOLUME * (TOT	AL WELL DEPTH - S	STATIC DEPTH TO W	ATER) X WELL	CAPACITY		GALLONS:	in in	ERS:
LL CAPACI		1): 0.75° = 0.02,	1' = 0.04; 1.25' = 0.06 PUMP OR TUBING DE	5; 2'=0.16; 3'=0.	37: 4" = 0.65; 5"	1.02; 6'=1.4	7: 12° = 5.88		ON = 3.785 LITERS	TOTAL VOLUME PURGE GALLONS:
PTH (feel):		WELL (leet):	WELL (Tool)	1		5: a3		5:46	LITTERS:
	4-26 LEVEL STAB	LIZATION	DEPTH TO WATER	WITH PUMP:	4-9612	2		11	3 γφ	
TIME INTER			(feel)	PUMP SETTING	SS		DEPTH TO W	ATER (faet)	Water Level Stable	VOLUME PURGED DUR
(min)	(mL/n		-	(400) 5547 (00)			START	END	(Yes or No)	INTERVAL (mL)
-	-	-								-
						-		-	-	
	-	_								
					***					i -
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	Hq	TEMP	SPECIFIC	ORP	COLOR	ODOR
	(mL/min)	WATER (leel)	(NTU)	OXYGEN (mg/L)		(c)	CONDUCTIVITY (µ3/cm)	(mV)	(describe)	(describe)
5 minutes;"	(100-500 mUmin)*	(+/- 0,3')*	(+/- 104s)*	(+L 10%)*	(*/- 0.1)*	(1/- 314)	(+/- 3%)*	(4/- 10mV)*		
5:25	400	35'	52.0	1.88	7.30	15.3		18.2	Clear	none
5:30	400	25	19.6	1.34	6.54	14.84	333	42.1	clear	none
:34	400	a5'	21.6	1.33	6.46	14.80	338	47.7	Clear	norle
					2.4					
					100					
						-		-		
	100						3. 3.07	- 62		- N
					1					
A stable atte	on paremeters from I	EPA/540/S-95/504	April 1996	VATA ONLY CONTROL	· ·		okasandarokatka		NAMES OF THE OWNER OF THE OWNER.	rolland floor to collection
WPLED BY (F	RINT) / AFFILIATIO	iv:	SAM.	PLER(5) SIGNATURE	SAMPLING S	UATA		SAMPL	NG INITIATED AT:	SAMPLING ENDED AT
	SOV C	an		OK.				1 18	5:39	15:46
IP OR TUBII	NG DEPTH IN WELL	SAMPLE PU	IMP FLOW RATE (ML)	per minute).	FIELD PARAMET	ER MONITORING	EQUIPMENT MOD	EL & SERVAL #S	0	1
d	5		400	D-FILTERED/Y'S	N FILTERS	2E µm				Δ)
D DECONT	AMENATION: (*)	N		tion Equipment Type:	0 14.202				MENU	N N
ERIAL CODE	S: AG = Amber				ene: 8 = 5 licone.		Other (Specify)	A STOTION OF THE PARTY OF THE P	Zachatha in the second	iomakowa in the second
NO. Elect	Mount / Sta									/ Broken / None
	n Mount / Stan Rain Water Be		General Condi	tion: Good / Ne Is Well F	Plumb?. Y /		: Good / Bro Riser: Good			/ Broken / None
endence (of Ponding Aro	The second secon		ncrete Collar.				Demayor	, INCHIS	
MARKS:			27-0		_			A		
	91	-10.	d 1 _O	of 1. L		-up	2-0	01110	9-F	
				- u				4	-11	

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MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyoke, MA 01040 413-540-0650

ROJECT NAM	E		PROJECT LO	VESTIME DOWN	ens/Auer	iling-	211	DATE Q/	11/10	SHM-10- P
ROJECT NUM	BER A DA	-0.0	WELL DIAME		DEPTH TO WATE		DEPTH TO		PIO READI	
w80535.6	ACO		(inches)	and resident and survival	(feet)	DATASTIC	(fadi)	1.000 in 11.000	(ppmv)	
IBING DUME	TER	TURING MAT	ERIAL CODE	PURGE PU	MP TYPE:		TA BOAT BELLEVILLE	PUMP EQUIPM	ENT MODEL & SERIAL #5	er i in grande and the street in a
	4"	(see below)		A A A A A A A A A A A A A A A A A A A	-copinul	A STATE OF THE STA	-	GALLONS.	Jum	ERS.
A STATE OF THE PARTY OF THE PAR	As attended to wide	7 7 0 2 10 1 10 10 10 10 10 10 10 10 10 10 10 1	- 0.04; 1.25 - 0.06		F 46 10 5 10 10 10 10 10 10 10 10 10 10 10 10 10		7- 12" - 5 88		ON = 3.785 LITERS	TOTAL VOLUME PURG
ELL SCREEN EPTH (red):	INTERVAL	WELL (fe	UMP OR TUBING DE	PIMIN FINAL PUM	P OR TUBING DEP	HIN PURGI	G INTLATED AT:		NG ENDED AT	GALLONS:
	34-310		85	853	and the second second	- 18	5:56	1	6:27	LITERS:
	LEVEL STAB	LIZATION	DEPTH TO WATER (fisel)	WITH PUMP:						
TIME INTER	VAL FLOW F	TATE	1427	PUMP SETTING	iS		DEPTH TO W	ATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DUI
Instity	, meso						Olage	240	110001110	SALE TANK THE
				(Townson					21.70	
TIME	FLOW	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	pН	TEMP (°C)	SPECIFIC	ORP (mV)	COLOR (describe)	ODOR (describe)
"(estunien 6-6	(mUmin) (100-500 mUmin)*	(feat) (% 0.37°	[+/- 1094)*	(+/- 10%)*	(+/- 0.1)*	(+/- 3%)*	(uS/cm) (+/- 3%)*	(+/- 10mV)*		-
16:03	350	36	304	0.84	5.85	14,07	1,020	70.3	cloudy	none
4:08	350	351	165	1,00	5.86	13.75	1026	71.8	little cloud	
	350	35'	101.1	1.07	5.07	13.44		F-C-75-70-70-70-70-1	clear	none
-	1000	-0-	1.21.1		2.0	12,11	1,000	10.0	CITAL	
	-									
		-								
					1					
					-					
					-					
			-	1						
		-					-0.0			
				-	-					
		-		-	-			-		-
			* * * * * * * * * * * * * * * * * * * *	-	-	-		10 - 2	ě,	
-				-				-		
PA stabilization	on parameters from 6	PA/540/5-95/504 A	DNI 1996							
No.	ek cuaran	Service of the servic	建筑建筑		SAMPLING	DATA		in the property		
	SOV CO		SAV	LEGIS) SIGNATURE	8				HIGHNITIATED AT	SAMPUNG ENDED AT:
	NG DEPTH IN WELL		P FLOW RATE (mL p	et minute):	FIELD PARAMET	ER MONITORING	EQUIPMENT MOD	-		10.41
200 200 200 200	35	The second second second	350	Arad Al		-4 - 5 - 10 - 5 - 18 - 1				
LO DECONTA	AMMATION: (P)		FIELD	OFFILTERED (V)	N FILTER S	ZE jum			DUPLICATE	Ø 10
TERIAL COOKS				ion Equipment Type: une, PP = Polypropyl	ensi S = Silicons	T = Tellon; D =	Other (Specify)		- Indiana	40
	44. A. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		La La Caracter Contract					illication."		100000000000000000000000000000000000000
pe: Flust	Mount / Stand	1 Pipe	General Condit	ion: Good / Ne	eds Repair	Well Caps	: Good / Brol	ken / None	Lock: Good	/ Broken / None
	Rain Water Be				Plumb?: Y /	-	Riser. Good	/ Damage	d / None	
A V A	of Dandina Area	and Well? Y	/ N Co	ncrete Collar.	Good / Crac	ked / Leak	ing / None			

Soverelgn Consulting Inc. 9058 South Main Street, Suite 202 Mensfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



材料		MA 02048 9-3200		Vesting	Low Flow Sa	mpling intro	TOT		1493.61	Halyoke, MA 01040 413-540-0650
DIECTINA			PROJECT	Dev	DEPTH TO WAT	- 17			njio	SHM-10-27
DUECT NUM	ACC	201.00	(Inches)	NETER:	(See)	ER	(fest)	BOTTOM:	(opmiv)	DING:
ING DIAME	Water Style	(r. C. Triencus	ATERIAL CODE	PURGE PU		DATA		Tours Fourth	ENT MODEL & SERIAL	
	4*	(see below	Poly	6	copump)		7-07-004		
				STATIC DEPTH TO W	COLUMN TO SECUL	S. A. L. C.		GALLONS:		ERS:
L SCREEN	TY (Gallons Per Foo	INITIA	L PUMP OR TUBING	06: 2"= 0.16: 3"= 0.	P OR TUBING DEP				ON = 3.785 LITERS NG ENDED AT:	TOTAL VOLUME PURGI
PTH (faot):	44-416	WETT	(1001):	WELL ((001)	4-40	1 10	6:32	10	:40	LITERS:
WATER	LEVEL STAE		DEPTH TO WAT	ER WITH PUMP:	1 70					
ME INTER			(feet)	PUMP SETTING	S	_	DEPTH TO W		Water Level Stable	VOLUME PURGED DU
(min)	(mUr	m(n)					START	END	(Yes or No)	INTERVAL (mL)
-										-
THAE	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pН	TEMP	SPECIFIC	ORP	COLOR	ODOR
	(mL/min)	WATER (feet)	(NTU)	OXYGEN (mg/L)		(,c)	CONDUCTIVITY (u5/cm)	(mV)	(dascriba)	(describa)
5 minutes)*	(100-500 mL/min)*	(+/- 0.3)*	(*F 10%)*	(+/- 1016)*	(++ 0.1)*	(i/- 1x)*	(n/- 78)*	(+6 10mV)*	A los et	0.000
-	425	45	2000	0.57	6.49	14.30	648	-67.6	Cloudy	none
:43	425	45'	308	0.70	6.64	14.13	649	-767	croudly	none
84:0	425	45'	33 9	971	6.58	18.50	647	-93.4	cloudy	none
_		+		+	-	_				-
=			+						-	
-				4						-
-			-			-				-
							-		-	_
\rightarrow			-		-	1				-
-	-		+	-	-	-		-		-
			-		-	-				-
				+						-
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		-			-	-	-	_		
-	X1	-	+	-		-				
-	-			26		-				V
		-	-							-
A stabilizati	ion parameters from	EPA/540/3-95/50/	4 April 1998		1	1			l	-
HOPE .				MPLER(S) SIGNATURE	SAMPLING	DATA		建筑经验	因是被消费根据实	and the second
PLED BY (PRINT) / AFFILIATII	v Can	Sy	OK.	, b			100	6:5a	IG: 40
	ING DEPTH IN WEL		UMP FLOW RATE (m		FIELD PARAME	ER MONITORIN	EQUIPMENT MOD			10.40
	45		425							
D DECONT	FAMINATION:	N		ELD-FILTERED: (Y) Indion Equipment Type:	N FALTERS	SLZZE: parti			DUPLICATE:	v 🔞
ERIAL CODE	Contraction of the Contraction o	rGiass; ca=cla		hylene; PP = Polymopyt						
	h Mount / Star			dition: Good / No			Good / Bro			/ Broken / Non
			& PVC? Y / N		Plumb?: Y /		Riser: Good			- Augusti F (10)
endence	of Ponding Arc			Concrete Collar.						
MARKS:	GP-	-10-2	7-0							
			4.40	- ia						

Sovereign Consulting Inc. 905B South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suite #307 Holyake, MA 01040 413-540-0650

	Mansfield, 508-33	MA 02048 9-3200		Neclan	Low Flow San	mpling Baline	T907		BATT	Holyake, MA 01040 413-540-0650
ROJECT NUM	ACONLO	02	PROJECT LO	Deve	DEPTH TO WATE	T	ОЕРТИТО		1//O PID READI	SHM-10-27
			(inches)	of cases turnstife to	(feet)		(feet)	and a street of the	(opmv)	The State of the S
	Design (Comment)	TUBING M	TERIAL CODE	PURGE PU		DATA	District Contract		ENT MODEL & SERIAL KS	the second of the second of the second
ches):	14"	(see below)	Poly	6	conumy)			20, 216, 718, 2	
LL VOLUME	PURGE: 1 WELL	VOLUME = (TOT	AL WELL BEPTH - S	STATIC DEPTH TO W	ATER) X WELL	CAPACITY		GALLONS:	un	PRS:
		0.75'=0.02	1"=0.04; 1.25"=0.00	3, 2'=0.18, 3'=0.	37: 4"= 0.65; 5"	+ 1.02; 6° ≥ 1.4			ON = 2 785 LITERS	TOTAL VOLUME PURGE
ILL SCREEN PTH (feet):	INTERVAL	WELL	PUMP OR TUBING DE feet):	WELL (feet)	lo .		NG INTLATED AT:	11.250	NG ENDED AT:	GALLONS:
<	54-SU	0	.55	6	4-56	' 1	7:05		7.36	LITERS:
WATER	LEVEL STAB	LIZATION	DEPTH TO WATER	WITH PUMP:						
ME INTER			Illeni	PUMP SETTING	3S		DEPTH TO W		Water Level Stable	VOLUME PURGED DU
(min)	(mL/o	nin)					START	END	(Yes or No)	INTERVAL (mL)
	+						-			
	_							-		
	_									
				-		V-0-				
TAME	FLOW	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	pH4	TEMP (°C)	CONDUCTIVITY	(mV)	COLOR (describe)	ODOR (describe)
	(mL/min)	(feet)	V I Washing	(mg/L)		100	(µS/cm)	7.5	,	Laterinary
-5 ministre)*	[100-500 mt/min]*	(a)- 0.3).	(1)- 1016)"	(4/- 10%)*	(#/- 0,1)*	(1/- 3%)*	(+/- 3%)*	(+/- 10mV)*	1.4.4	2004
1:10	400	551	41,000	0.77	6.66	13.45	632	108.4		none
7:15	400	551	488	0.44	6.66	13.40	637 .	109.5	INTECTOURS	none
1:20	400	55'	294	10.95	6.65	18.28	644	INA A	little clarke	none.
-				-						
						-				
- 1										
								100		
- 1										
					1					
				+	-				-	-
					-					
1				1						
-		-	4, 9	7	-	- 2				7
_										
									1	
A substitution	n parameters from	EPN540/8-95/504	April 1996	lower to the same to	SAMPLING	Programme and the	and the same	ever de la consti	the second second to	
IPLED BY (P	RINT) / AFFILIATIO	H:	SAM	PLER(5) SIGNATURE	Section and Section 25 and a	HUATHWEISE	STATE STATE OF THE	BAMPL	ING INITIATED AT:	SAMPLING ENGED AT.
	Sou	Con		OK					7:30	17:36
	10 DEPTH IN WELL		IMP FLOW RATE (ML		FIELD PARAMET	ER MONITORIN	BEQUIPMENT MOD			1
0: /	55	- 2	400							
_	AMINATION:		FIEL	D-FILTERED.	N FILTERS	12E: µm			DUPLICATE:	· (6)
				tion Equipment Type:	A		Oil - IP - T			- 0
ERIAL CODE	the state of the s				ent: 3 = Slacons.		Other (Specify)	o college		A STATE OF THE STA
	Mount / Stan		- Control Control				Good / Bro			/ Broken / None
-			PVC7 Y / N	tion; Good / Ne	Plumb?: Y /		Riser: Good			- DIORECT / NOR
	of Ponding Arc			ncrete Collar:				, Damage	C ROID	
MARKS:					Contract of Order	HOW IN LESSON	ang i mond			
	61	- 10	- 27-08	56-F						

Sovereign Consulting Inc. 905B South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way, Suito #307 Halyake, MA 01040 413-540-0650

DIECT NAME	li .		PROJECT LOC	Della	ms/Aver	1)	11 /8 STAG	110	SHM-10-27
DJECT NUMB	AC.OO	1.002	WELL DIAMETS (niches)		DEPTH TOWATE	9.	DEPTH TO	воттом	PID READ (ppmv)	
Section Section			SALES SALES		PURGING	DATA		52 cm (4)		Marthia et alba-t
ING DIAME		(see below)	POL	PURGE PUN	POPLIMO				ENT MODEL & SERVAL A	
-		VOLUME = (TOTA	L WELL DEPTH - ST.		and the second s			GALLONS:	u	ERS:
LCAPACIT	Y (Cations Par Foo	n 0.75° ≈ 0.02;	"= 0.04; 1.25" = 0.06;	2" = 0.16; 3" = 0.2	7: 4"= 0.05; 5"	1.02; 8"= 1,4	7; 12 = 5,88		ON = 3.785 LITERS	TOTAL VOLUME PURG
TH (look):	511000	WEIT (PUMP OR TUNING DEP	WELL (Teel):		100		12.414	IG ENDED AT:	GALLONS:
	04-666		CE S		4-66		17:45	110	3:10	LITERS:
WATER ME INTERV	LEVEL STAB		(foot)	PUMP SETTING			I ocoruzou	ATER #2-10	Water Level Stable	TVOLUME PURGED DU
(min)	(mL/r			POWP SETTING	3		DEPTH TO W	END	(Yes or No)	INTERVAL (mL)
	-						-			
	+									
	_									
TIME	FLOW	DEPTH TO	TURBIOITY	DISSOLVED	pН	TEMP	SPECIFIC	ORP	COLOR	ODOR
	(mL/min)	WATER (feet)	(MTU)	(mg/L)		(°C)	(us/om)	(mV)	(editaceb)	(describe)
5 m/nutes/*	(100-500 mL/mln)*	(el. 0.7)*	(+/- 10%)*	(+/- 10%)*	{4/- 0.1}°	(+/- ax)*	(+/- 3%)*	(+/- 10mV)*	ENEXAL A	11111111111111
1:44	450	05	4,000	0.97	6.64	13.61	763	-87.5	Cloudy	none
748	450	65'	41.000		6.65			-91.3	cloudy	none
1:55	450	65'	41,000	1.10	Co.66	1237	766	-93.3	cloudy	vaus.
-	-					_				-
	-	-				-			-	-
-										
-	-									
	_						-			-
-			-							1
-	_			_						
-										-
-					-					
7								-8-1		
atabilizatio	n parameters from	EPA/540/S-95/504	April 1996							
PLED BY (F	RIMITAFFUATIO		Isaup	ER(5) SIGNATURE		DATA			NG INTIATED AT	SAMPLING ENDED AT
	Soul			SIL	20				00:8	18:10
1	IG DEPTH IN WELL	The second second	MP FLOW RATE (mL pe		FIELD PARAMETE	ER MONITORING	3 EQUIPMENT MOD			10.10
6	5		450						-	
DECONTA	WINATION: (E)	N		FILTERED: (1)	N FILTER SI	ZE µm			DUPLICATE	× •
PHAL CODES		Glass; CG = Clear	the second secon	ne PP = Polypenoyle				e my grandonia	CT CT CT CT CT CT CT CT CT CT CT CT CT C	Annual Property Control
			Canada Canada			Mark and a				Carlos Alexandre
	Mount / Stan		General Condition PVC? Y / N	A. F. S. F. F.	eds Repair	7	Riser: Good			I I Broken / Non
	of Ponding Are			crete Collar:				Domage	o / Hone	
ARKS:	GD	-10	27-068							

Sovereign Consulting Inc. 0058 South Main Street, Suite 202 Mansfield, MA 02048

508-339-3206

MONITORING WELL SAMPLING LOG

Vertical Problem - Protosparic



Sovereign Consulting Inc. If Open Sova a Way, Soile #307 Hályaka, MA 01040 #12-540-0650

THE PARTY AND INCOME.	Ac 001.00	2	DATE OF PRINCIPLE	tort	Daven s	> ~	Incoruco	X//	110	5+1m-10-75
DIECT NUM	W.H.		(inches)		(feet) SATE		(feel)	40	(ppt v)	DING:
ING DIAMET	IER.	TUBING MAT	ERIAL COOE:	PURGE PUM	PURGING I	OATA .		PUMP EQUIPM	ENT MODEL & SERIAL	#s
(3)	1/4	(see pelaw)	PE	Dlu	V-1-1	stanle	0)	GALLONS	Ti I	TERS
	02.17.0300.30.05.400		WELL DEPTH - STA		Treatment of the Contract of t				=	
SCREEN		INITIAL P	= 0.04, 1.25 = 0.00; UMP OR TUBING DEP	TH IN FINAL PUMP					ON = 3.785 LITERS NG ENDED AT	GALLONS ~
TH (feel)	38-40	WELL (les	39	WELL (feet):	9	0	920	C	07.90	LITERS:
	LEVEL STABL	IZATION	DEPTH TO WATER V	Carried Management Co. A.	/	-11	10.0		213-	
ME INTERV		RATE	(test)	PUMP SETTING	S		DEPTH TO W		Water Level Stable	
922	(mUm	un)					J7. Y	END	(Yes or No)	INTERVAL (mL)
100					-		21.1		-/-	
								7		
			- Induction of	r Carenes	r	r			201.00	
TIME	FLOW RATE (mL/min)	DEPTH TO WATER (feet)	TURBIDITY (NTU)	DISSOLVED OXYGEN (mg/L)	Ηa	TEMP*	SPECIFIC CONDUCTIVITY (u5/cm)	(mV)	COLOR (describe)	ODOR (describe)
(colorin d	[100:500 mt./min]*	10/07	Un 3	(+/- 10%)*	(+/- 0.1)*	(*/ 1x)*	(1) 300.	89.2	10.1	12
935	400	25.35	N. L.	1-11	2.78	1661	~ .		Mudy	Thre
130		-	10.0	0.18	7.46	16.27	311	814	Clear	for
935	400	23.70	47.2	1	3.79	16.01	213	57.9	Class	1164
040	000	23.40	31.9	0.43	2.48	10.01	215	231	lans	More
945	400	23.00	49.7	0.36	5.59	1280	710	20.8	Chely	noe
-		-						-	0	
						-				-
-										
-						-				· · · · · · · · · · · · · · · · · · ·
-	-	800				-		-	-	.
-						-		-		-
-				-						
-				44	-	-			-	
-	-		-			-		-		
- 50	2.	-	200	7 4	-				-	1 - 9-8
-					-	-	17			
									-	
PA stabilizati	on parameters from	EPA/540/S-05/504	April 1996			L			L	
es production	学生的	最更多。 2 5	1. 1. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	of the same of the	SAMPLING	DATA		r Francisco Cristan	制用,并不是	िम्बास अस्य सर्वेश्वरहार ए
-	PHINT) / AFFAJATI	W.N	SAMP	ER(S) SHAN TURE	1	11/1	1.		LING INITIATED AT	SAUTUNG ENDED AT
bna	Then U	huttu	SIP L'LOW HATE (mL p	Minder /	FIELD PARAMET	ERAMINIME	NG EQUIPMENT AT	DEL & SENIAL	0290	1010
10	79		400 /	/ /						
D DECONT	TAMINATION: (F)) N	FIELO	FILTERED (N FILTERS	\$1 26 jm			DAY-MATE	(P) 8
ERIAL CODE	_	e Bless - BR = Clear		on Equipment Type:	mus. 5 = Silicone.	T = Talien. 0	> Other (Specify)		MS/ms	, 0
		. 1300	WELL C					anplicable)		en indelle der
	h Mount / Stat		General Condition			The second	Good / Broke			/ Broken / None
			PVC? Y / N		lumb?: Y / N		Riser: Good	/ Damaged	/ None	
MARKS:		und Welli? Y	/ N Con	crete Collan: G	Good / Crack	ed / Leaki	ng / None			

Sovereign Consulting Inc. 9068 Scuin Main Street, Stille 202 Mansfield, MA U2048

MONITORING WELL SAMPLING LOG

Sovereign Consulting Inc. 1 Cean Squera Way Suita #307 Holyake, MA 01040 413-540-0550

ROJECT NAM	E 10 001 0		PROJECTIC	UCTLICO DICATION FOR			noon	DATE	6/20/0	S#m-10-14
ROJECT NUM	Acolo	20%	WELL DIAME (makes)	tost		3'	DEPTH TO	80110M 80	PID REA (pamy)	DING-
BING DIAME	TER	TUBING MA	TERMA CODE	PURGEPUN	PURGING			PUMP EQUIPM	ENT MODEL & SERIAL	My.
		(see below).	PG	Blu		winless		GALLONS:	(L)	TERS
		VOLUME: (101A		STATIC DEPTH (O WA					IN = 3.785 LITERS	TOTAL VOLUME PURGE
ELL SCREEN EPTH (feel):		INITIAL F	UMP OR TUBING D	EPYTHIN FINAL PUMI WELL (foot).	OR TUBING DEP	THIN PURGIN	50	PURGIN	IG ENDED AT	UTERS: 25
WATER	LEVEL STAB		DEPTH TO WATE (feet)	R WITH PUMP:						
TIME INTER (min)	VAL FLOW (mL/r	nin) (nin		PUMP SETTING			DEPTH TO W	ATER (leal) END	Water Level Stable (Yes or No)	NTERVAL (mL)
0:50	350	C	PM4:	10.0-	20		3& 3	-	N	
					10110	»				
TIME	FLOW RATE (mL/min)	DEPTH TO WATER (feet)	TURBIDITY (NTU)	DISSOLVED OXYGEN (mg/L)	рΗ	TEMP (*C)	SPECIFIC CONDUCTIVITY (us/cm)	ORP (mv)	COLOR: (describe)	ODOR (describe)
3-5 minutes)*	(100-500 mL/mln)*	(4-03r	(*) 10%)*	0.66	(4/- 0 1)*	19/- 35Q*	(*/- 3%)*	29,7	720	Our
055	350	32.9	10.58		5.97	16.38	475	20-0	Clew	The
18	350	28.7	18.4	0.35	5.86	16.27 h.23	477	17.3	Clew	Jan
	300	24.5		0.33	5.87	16.08	478	14.7	Cless	1 Oct
III	320	27.6	33.7	0.41	5.86	15.99	979	14.9	Clear	Aire
				25,7						
							V-00-			177
FPA stabilizat	ion parameters from	EPA/540/S-95/504	April 1996							11/1
AMPLED BY	(PRINT) / AFFILIAT	ION:]SA	MPLER(S) SIGNATUR	SAMPLING	DATA	t attended to	SAMPL	ING INITIATED AT	SAUPLING ENGER AT
UMP OR TUE	hen Ch	uffu 11 panopu pu	MP FLOW RATE (m)	i ser famile)	FIELD PARAME	MA MONITORI	IG EQUIPMENT MO	OOEL & SERIAL	1120	1145
	TAMINATION: (2)	-	ru	CITAFILTERED (S) Valuon Equipment Typis		SIZE + 53 (in)			DUPLICATE	() N
			WELL	CONDITION CHI Illion: Good / Ne	ECKLIST (ald	nes alendovide a			Lock: Good	/ Broken / None
				is Well P oncrete Collar: (Riser: Gooding / None	/ Damaged	/ None	

Sovereign Consulting Inc. 9699 South Main Street, Suite 202 Monstield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG

Sovereign Consulting Inc.

COLO Square Way, Since (JU)

Holyahe, MA 01040

113 540-0550

ROJECT NAME	Accol ac	374	PROJECTIO	CATION		(notos	DATE //	6/10	SHM-10-14
ROJECT NUM	BER		(biches)	TER	(legi)	6.0	(feet)	60 FO	PIO RE (ppmv)	AD NG:
inine nivile	100	Troppie as	TERRIT CARE	Invoice no	PURGING				MENT MODEL & SERIA	
IBING DIAME; IChes)	44	(see below)	PE PE	PURGE PU	Yudder 1	Shin	less	4-0-20	MENT MODEL & SERIA	1. #5
ELL VOLUME	PURGE: 1 WELL	VOLUME (TOTA	L WELL DEPTH - 5	STATIC DEPTH TO W	ATER) X WELL	CAPACITY		GALLONS: _	-	LITERS
ELL CAPACIT	Y [Gallons Per Fool) 0.75 = 0.02, 1 IIN(T/A)	= 0.04; 1.25' = 0.06	5, 2' = 0.16, 3' = 0.	37; 4'= 0 65, 5'	= 1.02, 6' = 1.41	12° = 586		ON = 3.785 LITERS NG ENUED AT:	GALLONS:
PTH (leel)		METT (L	eel)	WELL (feet)				rond.		LITERS
	8-60 LEVEL STABI	IZATION	59 DEPTH TO WATER	R WITH PLIMP	59	1	230		300	Entito
TIME INTER		4-111-11	(feet)	PUMP SETTING	20		DEPTH TO W	ATED /(ent)	Water Level Stabi	VOLUME PURGED DUR
(min)	(mL/a	nin)					START	END	(Yes or No)	INTERVAL (mL)
230	200	C	my: (00-5	:0		55-55		N	_
		_								
										* *
-	-			-					-	
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE	WATER	(NTU)	OXYGEN		(.c)	CONDUCTIVITY	(mV)	(describe)	(describa)
3-5 minutes)!	(InLimin) (100-500 mL/min)*	(M. 0.3)	(4) 10%)*	(mg/L)	(+/- (0, t))*	[#7: 3%]*	(hr. 1954 (hr. 1954	(*/- 10mV)*		
335	200	55.45	850	0.32	607	17:24	233	7.9	Sills	no
140	aw	57:35	3623	0.28	5.88	16.00	55/	4.3	Siff	Rose
245	200	55.20	704	0-13	5.85	16.53	550	4.9	side	NONE
1250	200	55.15	1573	0.16	5.86	16.47	550	30	8:16	nine
1255	200	57.05	1129	0.17	5.86	1631	533	-0.9	Siffer	lone
									"/	100
				1					-	
								100		
								1		
-					-			-		
						-				+
	-			+	-				-	++
-				-	-	+				
					-				-	-
_	-	-	_		-					4
	-	2	-	-					-	
		-	-	200		3		-		1 44 3
75 34 4 W - W	on parameters from	EDAMINE OFFICE	1							
COLUMN TO		1000 - 1100	Abili tase	and the	SAMPLING	G/ONTA	a promise ver	1000	1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	Epper 2 2 14 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
MPLEO BY (F	PRINTILAFFILIATE	N	SAM	APLER(S) SICHATUR		VM			LING INITIATED AT	SAMPLING ENDED AT
Donne	las (hutter		#	4 1	Me			300	1325
MP OR TUBE	NG DEPTHIN WEL	L SAMPLE PL	200	ber ich (no)	FIELD PARAME	TERECUITORIN	G EQUIPMENT MU	DEL & SERIAL	49	
1	0.			D FILTERED (VI	N FRIER	SIZE 441 TWA			Cocalia.	
LD DECONT		9	Four	aron Equipment Type		Die Control			GUPLICATE	× (m)
TERIAL COOF				ylene: PP - Polypropy				Tanv	, resiste	Sen de la company
S	A STATE OF THE STA									Edward St.
_	Marriet / Pr	J Dies								
pe: Flush	n Mount / Stan	The second second	General Condi				Good / Broke			1 / Broken / None
pe: Flush	Rain Water Be	lween Steel &	PVC? Y / N		Numb?: Y / I	N PVC F	Riser: Good			7 Broken / None

Sovereign Consulting Inc. 905R South Main Street Suite 202 Mainsfield MA 02048 508 739-3200

MONITORING WELL SAMPLING LOG

Sovereign Consulting Inc. 4 Open Square Way, Suine #307 Holyoke, MA 01049 4 13-540-6650

O/ECT NAME	2.07-03	3200	PROJECT LOC	VET MO	VM 1208	MIN-	motosc	DATE		413-540-6650
-Acc	201.002		- Fo	est Den		0	DEPTH TO	8/16	I I O	SHM-10-14
DJECT NUM	BUFF		WELL DIAMET (Inches)	EH	(fee) 63	.6	(leet)	70	(ppmy)	
BING DIAME	IER	Trueing MAT	ERIAL CODE	PURGE PUM	PURGING	DATA		PUMP EQUIPM	ENT MODEL & SERIAL A	11 11 10 10 10 10 10 10 10 10 10 10 10 1
hes)	1800	(see below)	7.112.2330	7-2-7-0						
			WELL DEPTH - ST		and the second			GALLONS:		ERS
LL CAPACIT		INITIAL P	= 0.04: 1 25 = 0.06; UMP OR TUBING DE				12"= 588 GINITIATED AT		IN = 3 785 LITERS.	GALLONS O
PTH (feet):	68-7	WELL (fo	69	WELL (feet):	69	119	705	1	435	LITERS.
	LEVEL STABI	LIZATION 1	DEPTH TO WATER		-1				133	
ME INTER		SATE	(teet)	PUMP SETTING	S		DEPTH TO W		Water Level Stable	VOLUME PURGED DU
(min)	gu.		2m4: 1	20 5	0		51.55	END	(Yes or No)	INTERVAL (mL)
404	200	3 10	71119 7	0.0-3/	0		01.33		~	
	1									
	372						CHC			
TIME	FLOW.	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	Hq	TEMP ('G)	SPECIFIC	ORP (mV)	COLOR (describe)	ODOR (describe)
	(nil./min)	(leal)		(mg/L)			(µS/cm)		(describe)	(oascilde)
5 minutes)*	(100-500 mL/min)*	61.2	(-/- 103/).	0.25	(4/- 01)	18.99	(1/-3%)*	-6.9	0.14	0
110	200	58.2	662		5,93	116 /11	426	-6.1	7.7	Disc
115	200	54.0	230	0.22	5.83	18.00	435	-4.2	cons	1000
120	200	-	178	0.1	5.84	17.88	442	110	(A.I)	100
1484	300	50.7	170	-	5.82	DIA CONTRACTOR	444	-8.7	cours	More
1430	900	48.5	-111	0.18	3.00	ובח	1-1-1	01 1		1/04
-		-	_	-	-	-	-	-		-
-					-		-			-
-					-	-				-
-			_	-	-				-	
-	-			-	-	-		-		-
-		-		-	-	-	-			
-	-				-	-		-		
	-			-		-				-
				-	-			-	-	
		1 - 204	T 1	1	-		-			
-			-		-		-			
-				-			-			-
A stabilizati	na naramaterá from	EPA/540/S-9/9504	And 1996							1
源-号原约	斯德斯特斯德	建筑地位	医子宫 医腹膜	の簡素なが	SAMPLING	DATA		77 "- 465" P	67-	
	PRUNT) / AFFILIATI	0 200	SAM	PLER(S) SIGNATURE	ES.			The second secon	H 35	SAMPLING ENDED AT
Janus MP UR TUB	Men HISTORIAN THE WAR	I ISAMPLE TO	MP I LOW RATE (ML	oe: minute)	IFICID PARAME	TER MONITORIN	RA ECUIPMENT M	1	1	11427
45	69		200			2	22.11		7	
	IAMINATION (F) n	- FIEL	D.FILTERED (V)	H FILTER	SIZE Y) IIM		-	DUPLICATE	· (G)
TEMAL CODE		Glass CO - Cha	The second second second second	lena; PP = Polypropyl	ens: 5 = Silicons	7 - Tetan D	Other (Specific)			
			WELL (The second secon	applicable)		A 192 1
	h Mount / Stan			on: Good / Nee			Good / Brok		Lock: Good	/ Broken / None
			PVCS Y / N		lumb?. Y / t		Riser: Good	/ Damaged	/ None	
	of Decilian Are	TYRL-neer St	/ N Cor	W W W		CALL THE RESERVE	in the bearing.			



MONITORING WELL SAMPLING LOG



ROJECT NAM	1001-001	2	PROJECT UP	1051	Deven	5	focatu to	8//7	/ gyo	JAM-10-14
OUELT NUM	DEI((viches)	EH:	(feet)	8. 7	(feet)	80	(ppmu)	vo.
BING DIAME	TER	Trubing MA	TERIAL CODE	Trunge pu	PURGING	7	11	PUMP EQUIPM	IENT MODEL & SERIAL IIS	
:hes/	44	(see briow)	PE	PURGE PU	Haddes 1	Stein	لاعا			
			WELL DEPTH - 5	2 3000 424 2 5 5 5	1900			GALLONS	· ·	RS —
LL CAPACIT			> 0.04; 1.25' = 0.06 PUMP OR TUBING DE				7: 12' = 5 88 4G INITIATED AT:	And the second second	ON + 3 785LITERS NG ENDED AT	TOTAL VOLUME PURGER GALLONS:
PTH (feet)		WELL (SE		WELL (feat).			715	1		LITERS:
	8-80	, CATION	79 DEPTH TO WATER	WITH OUND.	77	0	/ / /	- 0	745	CITERIO.
127.3.21	LEVEL STAB		(leet)	A CONTRACTOR			T-2-00-1		T 100 T 100 T	
OME INTER	(mL/n	nin)		PUMP SETTING	35		DEPTH TO W	ATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DURI INTERVAL (mL)
715	au	CP	my = 10	1.0/5.1	0		18.7	-	N	_
TIME	FLOW	рертито	TURBIDITY	DISSOLVED	PH	TEMP	SPECIFIC	ORP	COLOR	nnon
i é minumit	(niL/min)	WATER (feet)	(NTU)	OXYGEN (mg/L) (-/- 10%)	(4/- 0,1)°	(*C)	CONDUCTIVITY U.S/cm) (1/- 3811	(msV)	(describe)	(describe)
720	200	19-18	31.4	1.33	6.67	15.29	403	82.5	LLOUDY	NONE
725	200	19.90	47.8	0.78	5.94	14.86	402	75.5	aus	None
730	200		11.0	0 49	1		399	55.0	andr	
-		21.82	36.7	0	6.06	14.66		_	1 nem	NONE
6735	200	1	36. 1		6.15	14.67	396	41.8	LICAR.	TO A STATE OF THE
0746	BO	22.92	38.8	0.31	6.18	14.71	543	34.2	DIEM!	NOWE
		-		-						
				(6)						
	- 10		- 2				74			
PA stabilizati	on parameters from	EPA/540/S-95/504	April 1996							
Warry and	7.54					G DATA	in the second			16 /3/5 (See
-	L C	N	SAN	PLER(S) SISNATUR	10	11		SAMP	ONG INITIATED AT	SAMPLING ENDED AT
Jane July	MEN ()	Nother Barrette St.	MF FLOW RATE (mL	ter marie	THE PARTY	TER MONITOR	NG EQUIPMENT MC	MEL & SERIAL	175	(873
340	79	O MIT EC PS	240	1	The state of the s	CIT PONTON	Camillanda I Mil	or deliver		
	TAMINATION: () ⁿ	FIEL	D FILTERED (C)	N PILTER	SIZE. 75 jm			757muc	√O ×
TERIAL CODE		of Class GG = Clear			Awar 5 - Silicano			Carnes M.		
	The second second		7							E. A.J. D. SS. 18790.
	h Mount / Star			ion: Good / Ne		A STATE OF THE PARTY.				Broken / None
			PVC7 Y / N / N Co					Damageo	None	
EMARKS.		CHU VVEIII: I	7 14 00	Mare Course.	LING I WING	L COK	ing / Ivolie		-	***

Savereign Consulting Inc 9058 South Main Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



Sovereign Consulting Inc. 4 Open Square Way. Suite #1/17 Holyaka, MA 01040 413-540-0050

ROJECT NAM	E Mans &	. 0	PROJECT LOC	ATION Facil	Davor	11	hobisq	JALO D	13010	Silm 10-1
ROJECT YUM	ACOOL CO	Dak_	WELLDIAMET	Fort.	DEPTH TO WATE		DEPTH TO	BOTTOM	PORE	
			(inches)		PURGING		(feel)	25	(cour)	**
JAING DIANE	TER	TUBING MATE	RIAL CODE	PURCE HUM	"YF -/	Stuinte		PUMPEQUIPMI	NT MODEL & SERVA	AL RA
	E PURGE: 1 WELL	-	WELL DEPTH - ST	ATIC DEPTH TO WA			o)	GALLONS	_ 1	UTERS
ELL GAPACIT	TY (Gallons Per Fool)): 0.75 = 0.02; 1°	0.04, 1.25" = 0.05;	2'=0.16, 3'=0.3	7: 4"+0.65: 5"	102; 6 = 1.47		and the second state	N = 3.785 LITERS	TOTAL VOLUME PURGE
ELL SCREEN EPTH (See):	INTERVAL	WELL (fee		WELL (Ice)		THIN PURGIN	IG INITIATED AT	111111111111111111111111111111111111111	G ENDED AT:	GALLONS:
WATER	23-25	GARON IS	29 DEPTH TO WATER		24	/-	2 47	11	6/5	LITERS:
TIME INTER	LEVEL STABL	((eat)	PUMP SETTING	ŝ		DEPTH TO W	ATER Hom	Water Level Stab	le VOLUME PURGED DUR
(min)	(mL/m	in)	0000				START	END	(Yes or No)	INTERVAL (mL)
1545	400) (3	1014:10	0.015	.0		8.78	_	N	+ =
					-					+
TIME	FLOW	DEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	pii	TEMP (°C)	SPECIFIC CONDUCTIVITY	ORP (mV)	COLOR (describe)	ODOR (describd)
(3-5 mirulas):	(inL/min) (100-500 mL/min)*	(feet) (*6- 0.7)*	(+/- 10%)+	(mg/L)	(4/- 0.1)*	(+)- 396)*	(us/cm)	(v)- 10mV)*	(22,31,00)	,,,,,,,,,,
550	Y00	8.70	88.0	3.35	7.43	13.84	104	85-1	Clarke	Done
222	Y00	8.71	204	3.23	6.82	1328	104	822	Cheril	Rose
600	400	8.70	1199	3,18	6.34	12.94	107	96.1	Silk	Done
1605	400	8.70	965	3.17	6.29	12:74	107	98.8	Sills	Pone
1610	COY	8.75	1235	3,06	6.27	12.58	107	101.1	SIK	Done
					17				1	
								4		
		-								
			-				-	-		
	-	10.00	E Property			100			-	-
	7.				-			÷		
								-	-	
EPA slabilizat	ion parameters from	EPA/640/S-95/504 /	April 1996	L			1			1
AMPLED BY	(PRINT)/AFFILIAJI	ON	LOSI CONTRACTOR	PLERIS LO QUATURI		DATA	要は、一般の		ING INITIATED AT	SAMPLING ENDED AT
1	then O	2. Au		11	// /	11/1		7	6/5	1635
UNIT OUR THE	ING DEPTH IN WEL		P FLOW RATE (OIL)	ner finule)	FIELD PARAMET	EN MONITORIA	NG EQUIPMENT MC			17000
-	24		70D	D-FILTERED(V)	N SHTED	SIZE MY INT				05
ELO DECON	TAMINATION (V)) N		bon Enurprisent Type	O PILICES:	27. 10m			DUPLICATE	(V) H
TERIAL COD		Gues CO - Charle			eno: S = Sicoro.			27. 20. 27 ×	. Washing	Wange-town
	h Mount / Stan			on: Good / Nee	N. A. C. Williams	300 VI V V				d / States / None
200	Rain Water Be	A STATE OF THE PARTY OF THE PAR			umb?: Y i N		Good / Broke Riser: Good			d / Broken / None
	of Ponding Aro			icrete Collar: G			4.00			

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MONITORING WELL SAMPLING LOG

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	VOLUME (TOTAL W 1 0.75 = 0.92; 1" = 1 WELL (leet) AZZATION DE ATE	WELL DIAMET (INChes) RAL CODE PE LEU DEPTH - ST 1004. 125-006. POR TUBING DE PTH TO WATER	PURGE PURGE	PURGING PURGING MPTYPE MATER) X WELL 37, 4'=0.55, 5' PORTUBING DEF	SI. 3 DATA MINUS CAPACITY = 1.02 6"= 1.4 THIN PURGIT	(feet)	PURGIN	PID REAL (PRINT) ENT MODEL & SERIAL N = 378S LITERS GENDED AT:	TOTAL VOLUME PURGE
UNGE: 1 WELL (Gallons Per Foo), 1 TERVAL 3 3 - 3 S EVEL STABL L FLOWR (mL/m	VOLUME (TOTAL W 1 0.75 = 0.92; T = 1 WEIJ (lest) IZATION CE ATE (IO	(mchas) RIAL CODE P.E. DEPTH - ST 2.04; 125 = 0.05, AP OR TUBING DEP THITO WATER at)	PURGE PURGE	PURGING PURGING MP TYPE (LICLE 1) ATER) X WELL 37. 4"=0.65, 5" P ON TUBING DES	DATA STLYLES CAPACITY THIN PURGIT	(fest) (1. 12' = 5.88 (G INITIATED AT:	POMP EQUIPME GALLONS 1 GALLO PURGIN	(ppmv) ENT MODEL & SERIAL N = 3785 LITERS	TOTAL VOLUME PURG
UNGE: 1 WELL (Gallons Per Fool) TERVAL 3 - 35 EVEL STABL (mL/m 200	VOLUME (TOTAL W 1 0.75 = 0.92; T = 1 WEIJ (lest) IZATION CE ATE (IO	PE DEPTH - ST 0.04: 125 - 0.06. FOR TUBING DE 3 Y PETH TO WATER (b)	ATIC DEPTH TO W. Y = 0.16, Y = 0. PTH IN FINAL PUM WELL (teel) WITH PUMP. PUMP SETTING	MP TYPE ATER) X WELL 37, 4'=0.65, 5' P OR TUBING DEF	Studess CAPACITY = 1.02 6'= 1.4 THIN PURGIT	/; 12° = 5.88 IG INITIATED AT:	GALLONS 1 GALLO PURGIN	N=3785LITERS	TOTAL VOLUME PURG
UNGE: 1 WELL (Gallons Per Fool) TERVAL 3 - 35 EVEL STABL (mL/m 200	VOLUMES (TOTAL W 0.75 = 0.02	204. 125 = 0.06. 125 = 0.06.	ATIC DEPTH TO W. 2 = 0.16. 3' = 0.16 PTH IN FINAL PUM WELL (leal) WITH PUMP. PUMP SETTING	ATER) X WELL 37, 4"=0.65, 5" POR TUBING DEF	CAPACITY = 1.02 6'= 1.4 THIN PURGI	/; 12" = 5.88 IG INITIATED AT:	1 GALLO	N = 3785 LITERS	TOTAL VOLUME PURG
Gallons Per Fool TERVAL 3 3 - 3 5 EVEL STABL IL FLOWR (mL/m	INITIAL PUN WEIT (feet) ATE in)	34 PORTUBING DE 34 PPTH TO WATER (1)	Y = 0.16, Y = 0.1 PTH (H) FINAL PUM WELL (teel) WITH PUMP: PUMP SETTING	37, 4°≥065, 5° POR TUBING DEF	= 1.02: 6' = 1.4 THIN PURGI	IG INITIATED AT:	PURGIN	N = 3785 LITERS	TOTAL VOLUME PURG
33-35 EVEL STABL L FLOWR (ml/m	INITIAL PUN WEI I (leel) IZATION DE ((leel)	34 PTH TO WATER (81)	WITH PUMP: PUMP SETTING	SY	THIN PURGI	IG INITIATED AT:	PURGIN		
EVEL STABL	ATE (fe	et)	PUMP SETTING		10	7735			GALLONS 15
FLOWR	ATE (fe	et)	PUMP SETTING	SS			0	755	LITERS
(m1/m	in)	<u> </u>		55					Trial true augusta ava
	CA	74:10				DEPTH TO W.	END	Water Level Stabil (Yes or No)	VOLUME PURGED DUF INTERVAL (mL)
FLOW			0/50		(33/53	-	N	_
FLOW									-
FLOW						-		-	+
FLOW									
RATE	DEPTH YO WATER	TURBIDITY	DISSOLVED	pН	7EMP (°C)	SPECIFIC CONDUCTIVITY	ORP	COLOR:	DDOR:
(mL/min)	(feet)	(NTU)	(mg/L)	W. nite		(µ5/cm)	(mV)	(describe)	(describe)
								(:/4	Noe
200			1						noc
200			-						none
00	OR SE				13.01			Sill	None
			***	15		=4-	41.0)	
				-					
		_	-	_		-			-
	-		24.00		-	- 5	77.5		
	1		-		1	-		x	7 0 02
		_							
parameters from	EPA/540/S-95/504 Ap	nl 1996		1					
UNIT LU AFEN IATIO	Ann Common ISAM	DI FORSI SICNA ILID		DATA	The state of the s	ICAMO:	NC INCONTACTOR	SAMPLING ENDED AT	
1 /	1 1.	3,00	1	11	11		1	755	m9/1
DEPTH IN WEL	L SAMPLE FUMP		germane)	FIELD PARAME	TERMONITORI	NG EQUIPMENT MO	DEL & SERIAL	S.	1010
34			Su Teors ?	N ENTED	COE UV				
MINATION (Y) N	10000		ricien	SEE TT UN			MYM	, O "
							Linguis and		
		-							/ Broken / None
					1. 10.15 4.615		7		, promoti / Hone
							C-0-130-2		
	parameters from PACA PACA PACA PACA MOUNT / Standain Water Bel	parameters from EPAISADIS-99/504 Ap PAISADIS AND SAMPLE FUMP AND AND GARE CO-DIVERSITY MOUNT / Stand Pipe ain Water Between Steel & PV	Parameters from EPA/S40/S-99/504 April 1996 INTO A FELIATION SEPTH IN WELL SAMPLE FUMP FLOW RATE (mu.) SOPTH IN WELL SAMPLE FUMP FLOW RATE (mu.) AG - Andre Gase CG - Dear Gloss PE - Polygram MOUNT / Stand Pipe General Condition WEEL-C	PARTITION SAMPLE FUMP FLOW RATE (INL. SOUTHWARD) ACT Arithm Gare: CG - Divit Gloss, Pe - Polyelinylane; PP - Polyelinylane; P	parameters from EPAISATUS-96/90M April 1996 DATE OF THE PAISATUS SHOWN THE PAISATUS SAMPLING SAMPLE OF THE PAISATUS SHOWN THE PAISATUS SAMPLE OF THE PAISATUS	100 101 102 103	purameters from EPAISHUS-9050M April 1956 purameters from EPAISHUS-9050M April 1956 purameters from EPAISHUS-9050M April 1956 SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN WELL SAMPLE FLUMP FLOW RATE (m. software) SAMPLER(S) SEMATURES MEDITH IN MEDIT	100 300 101 100 101	100 100

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MONITORING WELL SAMPLING LOG



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508-339-3206 413-510-0650 SHM-10-16 Accol-on 2 WELL DIAMETER 38.85 inches) **PURGING DATA** PUMP EQUIPMENT MODEL & SERIAL #5 (week below) NE GALLONS ___ WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Galois Pei Fool): 0.75 = 0.02: 1° = 0.04: 1.25 = 0.06: 2° = 0.16: 1° = 0.37: 4° = 0.82: 5° = 1.02: 0° = 1.47: 12° = 5.88

WELL SCREEN INTERVAL INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN PURGING INITIATED AT WELL (feet): WELL (feet): VELL (feet) GALLON = 3.785 LITERS TOTAL VOLUME PURGED: PURGING ENDED AT GALLONS UTERS: 1055 53-55 DEPTH TO WATER WITH PLIMP WATER LEVEL STABLIZATION (leat) DEPTH TO WATER (feet) VOLUME PURGED DURING PUMP SETTINGS Water Level Stable TIME INTERVAL FLOW RATE 52-TmL/min) INTERVAL (mL) (Yes or No) (min) START END CPM 4: 10.015.0 39.45 1055 TIME DEPTH TO TURBIDITY DISSOLVED SPECIFIC COLOR SOOR TEMP RATE WATER (NIU) OXYGEN (°C) CONDUCTIVITY (mV) (describe) (describe) (InUmin) (100-500 mL/m (10 0 3) (mg/L)(a)/cm) [+f- 10mVy (+/- 10%)* (41- 0 1)* (1) 15) (+/- 10%) 1.90 44.3 836 17.83 401 Clouds 1100 325 40.10 7.76 11.92 325 302 7.62 400 35.2 None 40.80 105 46 33.3 325 7.49 398 More 41.8 186 110 27.4 398 1115 42.7 101.4 me EPA stabilization parameters from EPA/540/S-95/504 April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION SAMPLERIS! SIGNATURES SAMPLING MITIATED AT SAMPLING ENDED AT 1120 1145 AND LE PUMP FLOW PATE (mit per migro) 54 FILTER SIZE: 645 JUM FIELD THE TEHELD Y RELU DECONTAMINATION: (7) N DUPLICATE Fillration Equipment Type PE = Phlyothylana PP = Polypropylana S = Srikona T = Tallon Q = Qihai (Specily) "AFFINAL CODES AG = Ambui Ginss CG = Clam Ginss WELL CONDITION CHECKLIST, (chicle appropriate frem(s), cross out if not applicable). Type: Flush Mount / Sland Pipe General Condition; Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None PVC Riser: Good / Damaged / None Evidence of Rain Water Between Steel & PVC? Y / N is Well Plumb?: Y / N Evendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS:

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MONITORING WELL SAMPLING LOG



DIECT NAKE	Accol o	102	PROJECT LOC	USC "FL	*Y502411	0	otason	DATE //-	7/2010	SHM-12-1
OFCT NUM	N-A	10 &	WELL DIAMET		DEPTH TO WAT		DEPTH TO	NOTTON!	PID REA (ppiny)	DING
					PURGING	DATA	b.ess)		Intravel	Chile
BING DIAME	TER Yu	TUBING MAT	ERIAL CODE	PURGE PUR	PTYPE /C	stunler		PUMP EQUIPM	ENT MODEL & SERIAL	RC;
	PURGE: 1 WELL		WELL DEPTH - ST	TATIC DEPTH TO WA	TER) X WELL		3	GALLONS.	U	TERS
			= 0.04; 1.25° = 0.05;						ON = 3 /65 LITERS	TOTAL VOLUME PURC
LL SCREEN PTH (leet):		WELL (le	UMP OR TUBING DE II)	WELL (leet)			G INITIATED AT		IG ENDED AT:	GALLONS: 2
	3-65	(7174)	69	MICH DIANE	64	/	310		340	LITERS:
WATER	VAL FLOW		DEPTH TO WATER (out)	PUMP SETTING			DEPTH TO W	ATER (I - II	Water Level Stable	TVOLUME PURGED DU
(min)	(mL/n	nin)					START	END	(Yes or No)	INTERVAL (mL)
3/0	52	O CB	my: 10	0/5.0	>		52.70		N	_
		-				-	-			-
_										1
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	ρH	TEMP	SPECIFIC	ORP	COLOR	DODR.
	(mUmin)	WATER (feet)	(NTLI)	OXYGEN (mg/L)	le e	(°C)	CONDUCTIVITY (µ5/cm)	(mV)	(describe)	(déscribe)
-5 meules)*	(100-500 nsL/min)*	1+6-021	(44 10/4).	[=/ 10%)*	[th 0.17	1-7-190-	[4/- 3/2]»	(#/- 10mV)*	00 1	0.
3/5	250	52.7	169	2.04	6 66	16.01	407	-69.1	Chuly	More
320	250	84.66		2.67	6.61	14.94	491	-73.2	Clear	More
325	250	43.2	21.7	2.89	6.58	14.46	491	-763	Cleer	None
1310	300	2						-		*
1340	250		17 -0	0 21	1 44	14.03	491	- 701 -	11.000	1
3.70	300	38.9	17.8	2.26	6.58	-		-78.2	LLEAR	NENE
335	250	34.5	215	245	6.57	14.73	492	-78.5	Clear	Done
-						-				
					-					-
				-	-	-				-
		-				-		-		-
-	-	-	-				-			
				-		-			-	-
								-		
-					F 7. 9					-
-	- 30		- 7		10 4			-		
		-	-	-		-				
A stabilization	on parameters from	EPA/540/S-95/504 /	Ipril 1996	1	1	1				1
Marie Const	PRINT) / APPILIATI	ON-	18 Tree Process	BIS SICHATIO	SAMPLING	DATA	1575 740	Teatroi	ING INITIATED AT	learn no conce as
		6.0	- AVAII	PLER(S) SIGNATURE	11 1	111		R. 14 C. 16 C.	1340	SAMPLING ENDED AT:
	NG DEPTH IN WE	SAMPLE PUR	P FLOVE PATE (int.)	ier physite)	FIELD PARAME	ER MONITORIN	G EQUIPMENT MC	and the second section of the section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the section o		1 / 100
0:										
D DECONT	ANIMATION Y) "	1000	OFFILTERED (Y)	N FILTER	SIZE - Y)_pm			DUPLICATE	Y (N)
ERIAL CODE	s AG = ∧mbe	r Glass CG + Clear 6	Aires PE - Pohellis	ina: PP - Polymipyl	erre: 5 - Silicone:		Other (Spenis)			
										Mr. Williams
			General Condition							/ Broken / None
2200 4 20			VC? Y / N / N Con		lumb?: Y / N lond / Crack		Riser Good	Damaged	None	
MARKS		- OF TANDE		was sonar.	- DE T LOGGE		n / ITOILE			

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MONITORING WELL SAMPLING LOG Low Flow Sampling

Sovereign Consulting Inc. - Open Squan: Way Gode Man? Holyake, MA 01040

508-339-3209 413-540-6550 SAM-10-16 8/18/10 Accor or 2 PURGING DATA (leal) (text) (inches) (pgnve) TUBING MATERIAL CODE (Sur below) PURGE PUMP TYPE PUMP EQUIPMENT MODEL & SERIAL IN-Bludder / Stumbers GALLONS WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Genons Per Foot). 0.75 = 0.02: 1' = 0.04: 1.25' = 0.06: 2' = 0.16: 3' = 0.37: 4' = 0.65: 5' = 1.02: 6' = 1.47: 12' = 6.88 1 GALLON = 3 785 LITER TOTAL VOLUME PURGED: FINAL PUMP OR YUBING DEPTH IN WELL (feet) WELL SCHE...
DEPTH (feel):
73 - 75 WITH PUMP OR TUBING DEPTH IS WELL SCREEN INTERVAL URGING ENDED AT WELL (fact): 0700 0725 DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION FLOW RATE PUMP SETTINGS DEPTH TO WATER (leet) VOLUME PURGED DURING Water Level Stable (mL/min) START (Yes or No) INTERVAL (mL) (min) 250 comy-61.15 0705 10.01 5.0 DISSOLVED FLOW DEPTH TO TURBIDITY TEMP SPECIFIC COLOR ODOR RATE WATER (NTU) OXYGEN (-C) CONDUCTIVITY (mV) (describe) (describe) (mUmin) (100-500 mUm (leet) (mg/L) (u5/sm) (4/- 10%) tie a by 10mVj (3-5 minutes 252 0705 563 6.89 12.41 740 94.6 250 4.15 6.79 761 -117.6 62.10 0710 250 174 1.52 11,44 county NONE 0715 250 63. 2 07 11.30 745 171 1295 122 0.79 11.33 85 6 136 Done 0720 250 64.80 122 0.66 11.26 720 -140.3 none 250 EPA slabilization parameters from EPA/540/5-95/504 April 1996 SAMPLINGDATA AMPLING INTITATED AT 0725 0800 LE PUMP FLOW RATE (ML OF HELD PARAMETER MUNITORING ECOPMENT MODEL & SERIAL AS 250 FILTER SIZE OF Jum FIELD FILTERED FIELD DEDONTAMINATION "ATEMAL COORS CO = Clear Slass PP - Palypropylene 5 - Slock T - Tellon D - Other (Specify) WELL CONDITION CHECKLIST (chair appropriate ricin(s), stress out if not applicable) Type. Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None Evidence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N PVC Riser: Good / Damaged / None Evendence of Ponding Around Welli? Y / N Concrete Collar; Good / Cracked / Leaking / None REMARKS:



MONITORING WELL SAMPLING LOG

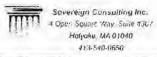


HOJECT NAMI	Acont o	02	PROJECT LC	tost	Deven		рсетито	8/P	1/2010	SHM-10-16
			(inches)		PURGING	DATA	DEPTH TO	82	(openv)	
BING DIAME	TER VALL	TUBING MAT	ERIAL CODE	PURGE PUA	AP TYPE	· 1		PUMP FOUIPM	ENT MODEL & SERVIL	15
	PURGE: 1 WELL		PE WELL DEPTH S	TATIC DEPTH TO W	closer / S	CARACITY	17	GALLONS	La	ERS
		ALCOHOL: STEEL		5. 2°= 0.16; 3° = 0.3	30.1	2017/2017	12 = 588	1 GALLO	ON = 3.785 LITERS	TOTAL VOLUME PURGE
ELL SCREEN PTH (feel):	INTERVAL	WELL (Is		PTH IN FINAL PUMP WELL (feet):		THIN PURGIN	G:NITIATED AT		G ENDED AT	GALLONS ~/. 5
- 6	83 - 85 LEVEL STAB		84 DEPTH TO WATER	WITH PUMP:	84	(2910	0	940	LITERS:
TIME INTERV	VAL FLOWE	RATE	(feet)	PUMP SETTING	ŝ		DEPTH TO W		Water Level Stable	VOLUME PURGED DUR
(7912	(mL/o		2mu io	0.0/5.	r)		48.15	END -	(Yes or No)	INTERVAL (mL)
0.714	1/30		1.1-(.10	3,07 5.	0		7073		70	
TIME	FLOW	DEPTH TO WATER	TURBIOITY (NTU)	DISSOLVED OXYGEN	ρН	TEMP (°C)	SPECIFIC CONDUCTIVITY	ORP (mV)	COLOR (describe)	ODOR (describe)
3-5 minutes)*	(whywy),	(feet)	(*/- 10%)*	(mg/L)	[0/+ Q 1)*	(v/- anj	(+/- 3%)*	(+/ 10mV)*		
7915	150	44.95	189	1.76	6.85	15.62	792	-85.5	agely	lone
290	120	41.70	70.9	2.26	6.90	15.22	829	-96.4	Clesi	The
2695	150	38.90	38.2	1.67	6.92	15,19	83 500		Clev	More
0930	150	19.933	36.15	1.11	6.94	14.91	=103.60	-1119	Cles	More
0935	150	34.7	16.6	0.90	6.95	14.92	837	704.8	Clear	More
			100	-						
A STATE OF THE PARTY OF THE PAR	on parameters from	The state of the state of		· ·	J	J		-	l	1
	PRINTITAFFILIATI			AFLER(S) SIGHATUR	100 TO 100 TO 17 TO 1	DATA	9218	SAMPL	ING INITIATED AT	SAMPLING ENDED AT
Tond	in al	ruffee	MP FLOW RATE (IIIL	11	10	ASMIONITORIA	IG EQUIPMENT MU	0	1940	1010
(e) 8			150	/ /						
	TAMINATION: CF)*	PIE	LO FILTERED: Y allon Equipment Type:	N FATER	SIZEC YS pm			DUPLICATE	(C) "
ATERIAL COOR		e Grass CG - Crear	Glass: PE = Polyeth	GONDITION CHI			38.18 1000C-134	pplicable)		15 Committee
ype: Flusi vidence of	h Mount / Slan Rain Water Be	nd Pipe stween Steel &	General Condit PVC? Y / N	lion: Good / Ne Is Well P	eds Repair lumb?: Y / I	Well Caps:	Good / Broke Riser: Good	en / None	Lock: Good	/ Broken / None
vendence :		und Wellt? Y	/ N Co	norete Collar: C	Good / Crack	ed / Leakin	ng / None			



Sovereign Consulting Inc. 5058 South Main Street, Suite 202 Mansfeld, MA 02048 506-239 3290

MONITORING WELL SAMPLING LOG



ROJECT NUMB	ALOOL C		4	+135t	Deven	5		8/19	2010	Hm-10-16
			(Irches)	E8	DEPTH TO WATE	185	(feet)	25	Pro-REAL (ppmv)	DIVG
				In course du	PURGING			la usa rasumu		
OING DIAMET chas)	Vy	(see below)	PE	PURGE PUN	adder 1	Stan	less	LOWIN ECKNINA	ENT MODEL & SPRIAL	44
ELL VOLUME	PURGE: 1 WELL	VOLUME (TOTAL	WELL DEPTH - ST	TATIC DEPTH TO WA	TER) X WELL			GALLONS	tr	TEAS
ELL CAPACITY				2" = 0.16; 3" = 03					ON = 3.785 LITERS VG ENDEO AT:	TOTAL VOLUME PURGE
EPTH (feat):		WELL (fee	91):	WELL Heel)	94	THE RESERVE AND ADDRESS.	210	100		GALLONS: Q
	93-95	(74710W)	94 DEPTH TO WATER		77	10	210	l le	235	GI(ERS).
TIME INTERV	AL FLOW R		(set)	PUMP SETTING			DEPTH TO W	MATER (mel)	Water Level Stable	VOLUME PURGED DUR
(min)	(mUm)	in)	- 13				START	END	(Yes or No)	INTERVAL (mL)
210	25	3 Clb	wa: V	20/15.0	<u>y</u>		86.85	-	N	
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	ρH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	(mUmin)	WATER (feel)	(NTU)	OXYGEN (mg/L)		(*C)	CONDUCTIVITY (#5/cm)	(mV)	(describe)	(describe)
3-5 minutes)*	(100 500 mL/min)*	(16 0.3)	(+/- 10%)*	(*/e 10%)*	[#: 017	D7 1-	14/ 3%)*	(1/: 10mV)*	10	
312	920	8-15	621	6.11	7.15	22.17	417	13.1	clark	Thre
230	320	27 28	188	4.27	7.00	1421	401	21. K	Chully	160
592	250	87.66	168	4.84	697	17.68	381	28.9	agres	Por
1936	250	86.4	180	5.06	6.99	17.45	382	21.4	Clark	Mine
(20 A)	4. 4.	100		, .	EA.					
	-13		-"				~			
EPA stabilizatio	on parameters from	EPA/540/S-95/504	April 1998	Sul Maria Walifur	SAMPLIN	COATA	Example Fig. 8	HE LATER	, data and	Developed the second
AMPLECIBY (F	PRINT) / AFFILIATI	ON 1.	SAM	PLERIS SICHATUR	A STATE OF THE PARTY OF THE PAR	11 1	,	SAMP	LING INITIATED AT	SAMPLING ENDED AT:
UMP OR TUR	Kton NG DEPTH IN WEI		AP FLOSVIRATE IME	Les finnotes).	HATTI PARENTE	est fait des	G EQUIPMENT M	DOEL & SERIAL	1235	1320
7	AMINATION (F	77.7	the second secon	CHATERED (C)	N FILTER	SIZE EYT IUN			DUPLICATE:	× (3)
ATERIAL CODES		Class; CO - Clea		tions: PP = Polypropy	lene 5 × Steone:	T=Total O	Other (Specify)		2 63/07	0
		T-10-11-11-11-11-11-11-11-11-11-11-11-11-						applicable)	Land State of Land	
ype: Flush	Mount / Stan	d Pipe	General Conditi	ion: Good / Nei Is Well P	eds Repair	Well Caps;	Good / Brok	en / None	Lock: Good	/ Broken / None
	of Ponding Aro	und Weill? Y		ncrete Collar: C				7.00		

So. 9058

Sovereign Consulting Inc. 9658 South Main Street Soile 202 Mansfield, MA 02048 508-039-0200

MONITORING WELL SAMPLINGLOG



ROJECT NAME			PROJECTION	ATION M	۸			Y JY	1000	S#m-10-11
HOJECT NUMBER	1003	202	WELL DIAMET		DEPTH TO WATE	R	(feet) 6	BOTTOM	PID READ (cpmv)	ING
					PURGING		- P 6			
IBING DIAMETER ICHES)	1/2	(see below)	PE PE	PURGE PUR	aterra	Pum	^_		MENT MODEL & SERIAL A	\$.
ELL VOLUME PL	RGE: 1 WELL	VOLUME (TOTA	IL WELL DEPTH - 51	IATIC DEPTH TO WA	TER) X WELL			GALLONS:	5 101	ers _
ELL SCREEN IN		DINITIAL	"= 0.04; 1.25" = 0.06; PUMP OR TUBING DE	PTYLIN FINAL PUMP	OR TUBING DEP	THIN PURGE	IT: 12" = 5.88 NG INITIATED AT		ON = 3.785 LITERS NG ENDED AT:	GALLONS: 10.5
EPTH (feel): WATER LE	VEL STABL	IZATION	59 DEPTH TO WATER	WELL (Ges):	59	ď	0830	c	1920	LITERS:
TIME INTERVAL (min)		ATE	(leet)	PUMP SETTING	S		DEPTH TO W	ATER (feet) END	Water Level Slable (Yes or No)	VOLUME PURGED DURIN INTERVAL (ml.)
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	CDOR
	RATE (mL/min)	WATER (kel)	(NTU)	OXYGEN (mg/L)		(.c)	CONDUCTIVITY (µ5/cm)	(mV)	(describe)	(describe)
02850 11 (Section 125)	00-500 mL/min)*	197-0.37	125	2.01	5.37	12.15	433	6.5	Charl	Nine
0900	-	~	70.5	0.85	18.41	W.17	433	5.6	Cled	Roy
10160	~		31.4	1,75	5.43	12.08	431	49	Clan	More
0915	~	-	36.1	0.79	5.44	12.16	431	3.8	Cles	More
- 60			5.5.	0.73	5,47	12.13	(3)	2.3	Cu .	7707
	4									
- 18					-		*		-	
EPA slabilization (aromejers from E	PA/540/S-95/504	April 1996	<u> </u>	4			_	<u> </u>	4
AMPLED BY IPRI	then C	harle	- 16	PLERIES SIGNATURE	1 Cc	11	NO EXPERIENT MO		ING WITHTED AT	SAMPLING ENGED AT
DATE OF TUBING	-		IMP FLOW RATE (III)	/			NG ECHIPMENT MC	DEL A SEIMAL	7.	
ELD DECONTAN			Figura	D-FILTERED Y	S- Sign		N	4	OUPLICATE	* " NA
ATERIAL CODES	AG S AMBO	Glass CG (Clea		CONDITION CHE		t = Tellon; O appropriate iron		opticable)		STORY I
	in Water Bet	ween Steel &	General Conditi	on: Good / Nes Is Well Procrete Collar: G	eds Repair lumb?: Y / N	Well Caps: PVC ed / Leaki	Good / Broke	en / None / Damaged	/	
REMARKS:	Purga	Develo	pment-	after 3	nples i	collec	ica res and	trbic	lity less	than 50 NT

Savereign Consulting Inc. 905P South Main Street, Suite 202 Monstield, MA 02049 508-339-3200

MONITORING WELL SAMPLING LOG



ROJECT NAME			FROJECTLO	Devens	. ma			EATE /ou	1 / 2010	SHM-10-12
ROJECT NUME	COOL O	172	WELL DIAMET		(loet)	1.01		5 7. 2	PID READY (ppmv)	NG T
JBING DIAMET			TERIAL CODE	launce non	PURGING I			10.00	ENT MODEL & SERIAL NO	
ches):	Yz	(see below)	P5	PURGEALIN	i term	Pump		10000		
		and the second second	L WELL DEPTH - S	Company of the second	G.CADS FOSGS			CALLONS .)luite	RS
ELL SCREEN		INITIAL	" = 0.04; 1.25 = 0.06; PUMP OR TUBING DE	PIH IN FINAL PUMP					ON = 3.785 LITERS OF ENDED AT:	TOTAL VOLUME PURGE GALLONS:
	5 - 55 LEVEL STAB	WELL (I	SY DEPTH TO WATER		54		0935	10	55	LITERS.
TIME INTERV	/AL FLOW	RATE	(faet)	PUMP SETTING	S		DEPTH TO W	ATER (feet)	Water Level Stable	VOLUME PURGED DUR
(min)	(mL/n	nin)		The R. P. Commission			START	END	(Yos or No)	INTERVAL (mL)
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	1 pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
3-5 minutas) ^a	(mL/min)	(feal) (r/- 0.3)*	(NTU)	OXYGEN (mg/L)	(+t/ 0.1)*	(*C)	CONDUCTIVITY (us/sm) (us/sm)*	(mV)	(describe)	(describe)
000	_	-	637	3.00	5.61	1676	583	25	Mark Sik	None
90		-	600	390	5.65	12.23	569	0.6	Chargs 12	Dine
210	_	-	211	2.92	5.65	11.89	570	3-0	Clark	Nove
الثره	-	~	147	3.99	5.65	11.84	5107	3.5	Cloudy	none
025		-	147	2.42	5.66	11.94	572	-474	Clark	none
032	-	-	131	3.19	565	11.910	569	-44.9	Clouds	none
040	-		79.9	332	5.65	12.07	572	-49.3	Moude	nare
1045	ate:	-	62.4	3.70	5.65	12.01	574	-46.6	Cloudy 1	none
050	11-	T	574	3.51	5.64	12.07	573	-466	reed	nun
1055	-	-	47.7	3.60	5.65	15.01	575	44.7	lieco	none
							7.61			
52				-	7	100		-		
								-		
EPA stabilizati	on parameters from	n EPA/540/S-95/504	4 April 1996	Some of	CAMOUNIA	- na=1				
AMPLED BY	reller (Chuler		MPLERIST SIGNATURE	SAMPLING	C/		SAMPL	ING INITIATED AT	SAMPLING ENDED AT
UMP OR TUB (el):	ING DEPTH IN WE	ELL SAMPLE P	UMP FLOW RATE (mt	per who (e)	TELO PARAME	EB PONITORIA	NG EOUIPMENT MO	DUELS SERIAL	A5:	
	FAMINATION: C		F/tz.	ub/En.TERED Y abon Equipment Type:	N FILTER		NA		DUPLICATE	V N NH
ATERIAL CODE	s: AG ≈ Amb	on Glass; CB : Cla		CONDITION CHE				opplicable)	Sec. 18-7-18	
vidence of		etween Steel 8	General Condi	tion: Good / Net Is Well P	eds Repair lumb?: Y / 1	Well Caps: PVC	Good / Broke Riser: Good	en / None	Lock: Good / / None	
REMARKS:	of Ponding Are		La Blian	JW15	bidit		Arcd	s the	n 50 Ni	N .

overeign Consulting Inc. 3 Smith Main Street, Smie 202 Mansfield MA 02048 508-339-3200

MONITORING WELL SAMPLINGTOG MENA

Low Flow Sampling



Sovereign Consulting Inc. 4 Open Square Way, Suila K307 Holyake, Ma 01040 413-540-6650

ROJECT NUN	MER:		WELL DIAME	Dearths.	m)	ER .	Товени по	8/2	1/10	DHM-10-13
A	(mor 02		(inches)	2	DEPTH TO WAT		(feet) Z	0.42	(pomv)	
URING DIAME	19/2	(See below)	TERRAL CRIDE POS	PURGE PO	MP TYPE	Em		PUMP EOUIFI	ENT MODE: & SERIAL	ns:
	E PURGE: 1 WELL		L WELL DEPTH - S	_	-			GALLONS	7	ITERS-
ELL CAPACI			" = 0 04; 1 25" = 0.06; PUMP OR TUBING DE						ON = 3.785 LITERS NG ENDED AT:	GALLONS 411
EPTH (leel):	50 -70	WELL (6	69	WELL (feel)	69	- CONT. 10 CONT.	130	10 1000	245	MITERS:
WATER	LEVEL STABL	IZATION	DEPTH TO WATER	WITH PUMP:				. 17.1		
TIME INTER (min)	(mL/m	ATE		PUMP SETTING	SS		DEPTH TO W	ATER (feel) END	Water Level Stable (Yes or No)	VOLUME PURGED DURI INTERVAL (mL)
4							-	-	_	-
						-				-
****			- Longraphic	1		(Carry		-8_1		
TIME	FLOW RATE (mL/min)	DEPTH TO WATER (feel)	TURBIDITY (NTU)	DISSOLVED OXYGEN (mg/L)	pH	TEMP (°C)	SPECIFIC CONDUCTIVITY (us/cm)	(mV)	COLOR (describe)	ODOR (dosoribe)
5-5 minuteut	(100-500 mL/min)*	(-J- 0.3)°	150	7-83	(41- 0.1)	10/ 30)	1000	-131.9	10.0	10
205	_	_	93.6	0.58	614	13.19	955	25.0	10. 1	Out
210	-	-	62.0	6,46	6.00	13.12	905	1500	(00)	Pini
215		~	22.8	0.32	408	12.85	845	Y59.2	Cler	An
225	-	-	24.9	0.24	5.92	12.41	459	147.46	Clear	nune
	-			-						
			-	-						
					1					
	1									
-		1000		-						4
					-		-			-
PA stabilizat	ion parameters from E	PA/540/S-95/504	April 1996	L	1					4
MPLED BY	PRINT) LAFFILLATIO	ON: O	SAM	PLER(S) SHEMATUR	SAMPLING	DATA		SAMPL	ING INITIATED AT	SAMPLING ENDED AT
Jun	withen	Chut	u	(1)	//	Ch	1		_	
IMP OR TUB (BI)	ING DEPTHIN WELL	L SAMPLE PU	MP FLOW RATE (ml.)	per mylyke)	FIELEPARAME	FER MONITORS	G EQUIPMENT MO	DEL & SERIAL	9s:	*
a a pecou	TAMINATION: (Y)) N	heu	D FILTERED Y	N PILIER	SIZE:µm	10		DUPLICATE:	Y N . 110
TEMAL CODE		Glass CG = Class		tion Equipment Type: tine PP = Polypropy	ena: 5 · Silicone	T = Tellistr O +	(Dilhar (Smecky)		DO-CICATE:	· NA
		-		CONDITION CHI	The second secon			pplicable)		
	h Mount / Stand Rain Water Bet	The state of the s	General Condition	on: Good / Ner Is Well P	eds Repair_ lumb?: Y / N		Good / Broke Riser: Good		-	/ Broken / None
vendence EMARKS:	of Periding Arou	nd Welli? Y	/ N Con	icrete Collar: 0	Good / Crack	ed / Leakir			200	
EMARKS.	Rn	275	complete	1 app	1 3	well	l wh	mes	and	
	THEIL	orbid	by de	ectel	uss	Mu	1 20	NIL		



MONITORING WELL SAMPLING LOG

Intin

Sovereign Consulting Inc. 4 Open Square Way, Sura 4307 Halyake, MA 01040 413-540-0650

ROJECT NAME			PROJECTOR	t were	s me		1000	PATE 12	119010	SAM-10-15
ROJECT NUMB	ER DO	2	(inches)	J.	(leci) O	4-82	(leet)	\$ 25	(Gamy)	DING
UBING DIAME!	ER V.		STERIAL COOF	PURGE PUR	PURGING	DATA		PUMP ÉQUIPME	NT MODEL & SERIAL	. Hs
netics):	** Yz	(see below)		-1ω	etern	nini nini		GALLONS.		(TERS)
The Parity of th	CERCURAL ACTION		AL WELL DEPTH - 51 V = 0.04: 1.25 * 0.06.	Depart of Debug.			12 = 688	3,	# = 3 785 LITERS	TOTAL VOLUME PURGED
ELL SCREEN I			PUMP OR TUBING DE		OR TUBING DEP	HIN PURGIN	G INITIATED AT	10000	G ENDED AT:	GALLONS ~38
·······································	15-55		54		54	1	300	1	435	UITERS
WATER	LEVEL STABL	IZATION	(feet)	WITH PUMP:						
TIME INTERV (min)	AL FLOW R			PUMP SETTING	SS		DEPTH TO W	ATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DURIN
-	-						~	-		~
		_						VI		
		-				-	-			
_	-									
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	980	COLDR	ODOR
	RATE (mL/mm)	WATER: (feet)	(NTU)	OXYGEN (mg/L)		(°C)	CONDUCTIVITY [µS/cm)	(mV)	(describe)	(describe)
(3.5 mirepas)**	(100-500 mLmin)*	(-1. 0.3)	(+/- 10%)*	(+1- 70%)*	(*/- 0.5)*	11/ 3%)*	11/- 350/	Jel- 10mVy		1
/335	-		9/5	1.90	5.70	62.34	505	79.7	alud	Thre
347	_=	-	816	325	5.76	12.18	504	-74.7	aug	none
555			425	0,77	5.68	12.14	507	-1244	aug	Time
705		_	256	0.67	5,67	12.30	20.8	152.8	and	Mu
410	-		269	1.00	5.69	12.02	510	-130.2	Cloudy	nene
4)0		5	237	1.77	5.70	12.01	5/3	-112.0	Cloudy'	lone
425	_	-	190	2.04	5.70	12.07	517	96.3	Cloudy	none
1430		-	209	1.01	5.69	12.13	519	99.9	ang	My
-					-					
		-	-							-
-				-		-		-		-
-			-	-	-		-			-
-				-	-	-				1
-	,	the later	34.1		-			-		
27524	300		- 2					3.7		
			-							1
EPA stabilization	on parameters from	EPA/540/S-95/50	4 April 1996					_		4
					SAMPLING	DATA		1000	TO THE PERSON NAMED IN	4.000
SAMPLED BY	PRINT) / AFFILIATE	CI D	SAN	PLER(S) SIGNATOR	1	11	11	SAMPL	ING INITIATED AT	SAMPLING ENDED AT:
PUMP OR TUB!	NG DEPTH IN WEL	SAMPLER	PUMP FLOW RATE (mt.	per immuto)	FIELD PARAME	IER MONITON	C EQUITMENT M	ODEL & SERIAL	Hs.	
(feet)			_	/		/				
FIELD DECONT	(C):NOITANIMA	N		D-FILTERED. Y aton Equipment Type	N FILTER	SIZE, µnt	120		CUPLICATE	v » MA
MATERIAL CODE	5: AG - Amber	Glass CG : Cla		HON: PP = Polypeap	nene: 3 = Silicone;	Talkon O	Cliber (Speedy)			MI
			WELL	CONDITION CH	ECKLIST (circl	appropriate Ken	(s) cross out if not	applicable)		
	Mount / Stan			ion: Good / Ne			Good / Brok			/ Broken / None
			PVC? Y / N		Plumb?: Y / I		Riser Cood	/ Damaged	/ None	
REMARKS:	of Ponding Arol	THE WEST	A 0	ncrete Collar: (- W VV \					
Pr	ging co	mplete	r pylan	ing the	re SUC	usive	stuble	reading	Sp 01-	
OH!	Tempo	a.l.	oal so	outi com	alanh al	RAL	dily reu	1	of less	the
-	- The	190	, we see	and W	The same	1	Danala	200	- 12 4	comples Coll

Sovereign Consulting Inc., 9058 South Main Street Suite 707 Mansfield, MA 02048

MONITORING WELL SAMPLING LOG



	50	8-339-3	200								413-540-0650
HOJECT NAME				PROJECTIO	CATION I PEROD	MA			DATE 12	5/10	SHM-10-14
OJECT JAME	COI. (פריר		WELL DIAME		MA- DEPTH TO WATE	21.81	(feet)	80,35	PID RE/ (ppmv)	
		~~			-	PURGING		-123-			
9NG DAMET	V ₂		(see below)	PE	PURGE PU	Dutem	Rino		and the second	ENT MODEL & SERIAL	. #s:
LL VOLUME	PURGE: 1	WELL VO	DLUME (TOTA	L WELL DEPTH - S			Committee of the Commit	7	GALLONS 9.	6	ITERS
		r Foot):		'=004, 125'=00E					1 GALLO	ON * 3.785 LITERS	TOTAL VOLUME PURGE
PTH (leat)		4	WEIL	PUMP OR TUBING DI	WELL (feet):	S ON TUBING DEP			1000	NG ENDED AT:	LITERS
	0 - 80	_	TATION.	DEPTH TO WATER	NAME A DELIVER	19	_	01100	10	0/0	LITERS
IME INTERV	LEVEL ST	OW RA		(leal)	PUMP SETTING	·e		DEPTH TO W	ATED Healt	Water Level Stable	VOLUME PURGED DUR
(min)		mL/min			PUMP SETTING			START	END	(Yes or No)	INTERVAL (ML)
		_	-							_	
			-							-	+
									-	-	-
	+	_	-					-			+
TIME	FLOW		DEPTH TO	TURBIDITY	DISSOLVED	рН	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mL/min	,	WATER (leat)	(NTU)	OXYGEN (mg/L)		(.c)	CONDUCTIVITY (µ3/cm)	(mV)	(describe)	(describe)
-5 minutes):	(100-500 mL/		(-1-03)	(+/- 10%)*	(+/- 10%)"	(+/- 0.1)*	(4/- 3%)*	(+)- 3W)*	(+/- 10mV)*	1.0	
815	_		-	384	4.69	5.87	12.35	641	-80 c	Chun	Noe
822	_		~	322	220	5.78	12.19	632	-842	Clouds	Nee
905	-		_	239	1.63	5.77	12.12	637	0.75	Clevel	Noe
915	_		-	194	1.57	5.75	12.12	637	05,7	Clus	none
925	-	-	_	142	1.69	5.75	12.23	63L	10.3	Clus	Dore
935	-		-	219	1.49	5,75	1215	636	843	Churi	Done
1945	-			178	1.32	7.76	12.20	635	111.0	Clus	Due
955	_		~	177	1.57	5.72	12.19	636	119.1	Clas	none
305	_			163	1.37	5.73	12.24	637	411.8	Class	Rue
										1	
- 11											
7											
PA stabilizatio	on parameters	Irom EP	A/540/S-95/504	April 1996		- Verninger	THE REAL PROPERTY.				
MPLEO BY (F	PROTEIN	LIATION		is SAN	PLERISI SIGNATUR	SAMPLING	DATA		SAMPL	ING INITIATED AT	SAMPLING ENDED AT
	Enat	h	Chri	Chy	//	11.	101	7		_	_
MP OR TUBI	NE DESTRU	A MELL	SAMPLE PL	IMP FLOW HATE (ML	per nuacue)	FIRED PARAME	TEH MUNITORH	IG EQUIPMENT MO	DEL & SERIAL	#8·	-1
		~		- Inn	D-FILTERED Y	N') FILTER:	CIVE IN				
TO DECONT	AMINATION	(N De	1 0-	акоп Еqиіртем Тури	N FILTER	SIZE µm	N	A	DUPLICATE.	* ONA
TERMA CODE	9 AG	Aniber G	445. CO = C/44			lene. S - Sidene		O(he (Spauly)			
62.5					CONDITION CH					100 800	A BONE THOSE
idence of				General Condi PVC? Y / N	ion: Good / Ne	eds Repair lumb?: Y / N		Good / Broke Riser: Good			/ Broken / None
			d Welli? Y		ncrete Collar: (Damaged	/ None	
EMARKS:	0								۔ ال	· - 11	0.1.61
	40	300	2 100	pleki (MAN S	omina	- rem	to dim	TEM	Py Plt1	conditions
	and		Ru biv	yes,							
			- Ina	IF Devel	Sment	- 11.		1 - 1	111		

Sovereigh Consulting Inc. 9058 South Main Street Suite 202 Mansfield, MA 02048

508-339-3200

MONITORING WELL GAMPLING LOG

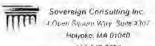
Sovereign Consulting Inc.
4 Open Square Y/ay, Suite #307
Holyoke, MA 01040
413-540-0650

MAIN TO SLOS			Skoreci doc	LAN-NA				8/2	5/10	SAM-10-16
ROJECT NUM	May c	202	(mehas)	2	PURGING		(feet)	82.0	PID REA (ppmv)	JING
UBING DIAME	The second second	TUBING MAT	FRIAL CODE	PURGE PUIA	PIVPE	DATA		PUMP EQUIPME	ENT MODEL & SERVAL	#5
			WELL DEPTH - ST		TERI X WELL	APACITY		GALLONS 2	+ 10	TERS.
		0.75 = 0.02, 1	= 0.04, 1.25 = 0.06,	2" = 0.16: 3" = 0.37	7: 4° = 0.65; 5° =	1.02; 6 = 1	17: 12 = 5 88	LGALLO	N = 3.785 LITERS	TOTAL VOLUME PURGED
VELL SCREEN EPTH (leet):		WELL (fee	UMP OR TUUING DEA	WELL (1661)			NG INITIATED AT:	M. M.Conner	G ENDED AT:	GALLONS:85
WATER	15-85 LEVEL STABL	TATION II	DEPTH TO WATER	WITH PUMP	84	/	025	1	225	LITERS:
TIME INTER			feet)	PUMP SETTINGS	\$		DEPTH TO W	ATER Heet	Water Level Stable	IVOLUME PURGED DURI
(min)	(mL/mi		_	1 01111 02111110			START	END	(Yes or No)	INTERVAL (mL)
	-	-					-		-	
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	PH	ТЕМР	SPECIFIC:	DRP	COLOR	SOCIO
	RATE (mUmin)	(feet)	(NTU)	OXYGEN (mg/L)		(,c)	COMBUCTIVITY (µS/cm)	(mV)	(describe)	(describe)
-5 minutes)*	(100-500 mL/mm)*	(+F 0.3).	(F/: 10%)*	(*A 10%)*	(*/- (0.1)*	11/- 19/1	[+/- 3%)*	(+/- 10mV)*	0.0	1
1112		_	- 113	0.77	8.05	1083	672	193.3	Clary	Mue
1125			1368	0.89	606	1018	677	449.4	Clarky	ne
135			1324	0.40	607	17.80	680	162.3	Clust	Dore
145	~		671	0.37	6.05	10.73	676	-190.1	Chang	none
155	,	_	200	0,95	6.03	10.77	676	Y60.3	aug	More
200	~	-	116	0.44	6.06	1001	678	149	Clivida	The
302		_	99.6	0.34	6.03	10.77	680	-174.0	Cloud	DH
210	-	~	93.7	75.0	6.03	10.82	657	-1613	Clark	nine
215	-	-	77.6	0.41	6.03	10.57	680	1515	chal	Port
220	~	_	64.9	0.31	6.08	14.72	684	157.1	Cluves	noise
275	_	-	44.8	0.97	607	1170	688	149.2	Chard	none
									-	
	-						1			
	ion parameters from E		April 1996		SAMPLING	DATA				
Ter.	1 Chas	hoffee	SAM	PLERIS) SUCHATURE	9.	1		SAMPL	ING INITIATED AT	SAMPLING ENDED AT
UMP OR TUB eet);	ING DEFTH IN WELL	SAMPLE PUI	HP FLOW RATE (ML)	per mule):	HELO PARAME	TER MONPOR	ING EQUIPMENT MC	DEL A SERIAL	95	
ELD DECON	TAMINATION (V))N	Cicy	D-FILTERED, Y ton Equipment Typa:	N FILTER	SIZE µII	NA		DUPLICATE	Y WA
TEMAL CODE	ES Ary = Anther	Glass, GG : Clear		CONDITION CHE			in Oper (Specify)	ion(entital		
una Elia	h Mount / Stand	Pine		ONDITION CHE	Le 20e al-		: Good / Broke	1000	Lock: Good	/ Broken / None
vidence al	Rain Water Bel	ween Steel & F	ACS A 1 M	Is Well PI	umb?: Y / N	N PVC	Riser: Good	11.8.8	A COLUMN	i pineli i Nove
Vendence REMARKS			/ N Cor						5.3	E-TA Total
-COM BOT	limi	ns con	noliki	after -	broid	40	efected	less	then.	50 NR
	(),	.0	All and a second	- Y - Z		0				



Sovereign Consulting Inc 905tt South Main Street Strife 202 Manstello, MA 020vi)

MONITORING WELL SAMPLING LOG



PROJECT NAT	tort lave	is SHL	WELL DIAMETI	Mye	- MA LOEFTH TO WATE		DEPTH TO	DATE 8/3	o//o	WEILIN SHAN-10-11
0.312 Mil	ACOO!		(menos)	ď	PURGING I	4	(ten)	led	/3 (ppmo)	
(inches)	1/4	(see below)	TERIAL CODE PE	PURGE PUM	PTYPE Blac	lde-		Cont-21	INT MODEL & SENIAL FOR PAGE 112	es- QED
WELL VOLUM	E PURGE: 1 WELL	VOLUME: (TOTA	L WELL DEPTH - ST	ATIC OPPTH TO WA	TERT X WELL C	APACITY		GALLONS		TERS
			*+ 0.04: 1:25° = 0.06.						M = 3 /85 L/IERS	TOTAL VOLUME PURG
DEPTH (feet)		WELL (PUMP OR TUBING DEF	WELL ((ee))	OR TUBING DEPT	100	The state of the s		G ENDED AT	GALLONS 3601.
			3/		51_		1020	11	90	UTERS
1000	R LEVEL STABL	- (10-210 ·	DEPTH TO WATER (
TIME INTER	RVAL FLOW RU (ml/mi)	n)		PUMP SETTING			DEPTH TO W	ATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DU INTERVAL (mL)
0-11	150	R-	10 D-5	PS1/C-4	6 PSI/T	-200	4616	90.16	У	2 1000
	1500	50								
			1							
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	рН	TEMP	SPECIFIC	ORP	COLOR	9008
	(nst/min)	WATER (lest)	(NIU)	OXYGEN (mg/L)		(,c)	CONDUCTIVITY (#5/cm)	(inV)	(describe)	(describe)
(3.5 minutes)*	(100-500 mL/min)*	(++ 0.1).	(+/- 10%)*	(1/- 10%)	(+1-01)*	((/ 38))	1 (4 19)*	(1/- 10WA),	01	100000000
1035	300/150	4016	25.1	1.45	6.10	13.55	#335A	-20.5	Clear	None
1040	3399150	40.16	30-1	6.18	6.19	13.28	423	-30.6	clear	None
1045	(SVDD)20	14.4	18.5	5.91	6.18	13.34	423	-31.9	CVEr	Nune
1048	300/150	40.16	14.8	6.88	6.17	1348	422	-32.1	Clear	None
1051	30010	40.16	10.29	1.81	5.91	13.45	423	-19.4	Clear	Mone
1054	30019	40.16	9.21	1.890	604	13:33	439	-98 2	4/ear	Mone
105)	300/100	140-16	6.28	1.48	(0.04)	13 50	191	-28-7	Clear	More
1100	300150	4016	3630	3.46	6.08	13.44	164	-32.2	Clear	hune
1103	30015	40.16	5.19	2.43	6.09	13.36	420	-33.9	Clear	Mone
1109	300150	140.16	4.67	2.39	10.09	13.57	430	-333	Clear	None
1109	3000	40:16	3.94	293	6.17	13.40		-36.5	clear	None
1113	300150	4016	3.71	1.56	10.12	13-34	400	-35-6	Clear	Mone
111/0	1 dos	44	4:47	1.68	610	13.27	419	-34.6	clear	None
1119	B00/150	40.16	4.05	1,68	6.12	13.19	419	-32.6	Clear	Mone
DE N			0.22	3 "	1	2.4	10.5	2		-
N shahilla	ation parameters from i	GA/EANS DE/EDA	April 1000							
	(PRINT)/AFFILIATIO			LER(S) SIGNATURE	SAMPLING	DATA		TCAMD!	ING INSTINCTED AT	SAMPLING ENDED AT
	Carrier I for	Con	8	rei PlA					96	1230
ENTO HOMP OR TO (leet)	mino per in hi wi	SAMOER.	JUST FEETWO HATE (INL. E				E LOF/U	THE SHAME		1 1400
FIELD DECO	NTAMINATION (C)		FIELD	OFILTERED: (S)	N PILTERS	in in	10-10	Coa	DUPLICATE	mclm h
MATERIAL CO	DES AG = Amber	Class CG - Dea		ONDITION CUE				esetado 1		. July
dence	ish Mount / Stand of Rain Water Bet	ween Steel &	General Condition	Is Well P	eds Repair lumb? Y / N	Well Caps: PVC F	Good / Brck Riser, Good	en / None	Lock Good / None	/ Broken / None
REMARKS	e of Ponding Arou	and Welli? Y	/ N Con	crete Collar: G	Good / Crack	ed / Leakin	ig / None	-		



Sovereign Consulting Inc 9050 South Wain Sireet, Suilo 202 Mansheld MA 0204!!

MONITORING WELL SAMPLING LOG



2000	508-339	-3500	- Kamakana		× 100 100 100					413-546-0850
QUECT NAME	Fort Dan	s SHL	PROJECT LOCA	AYER Ayer	MA			GATE 46/3	olia	3Hm-10-12
DECT NUMB	U-D X	100	WELL DIAMETE		teen 34	15	(Jeet) E,	7 34	PID (IEAD)	NG.
					PURGING D					
AING DIAME!	ER 1/4	(see below)	ERIAL COOF PE	PURGE PUMP	Bla	llex		Cont - 12	NT MODEL & SERIAL &	1421
LL VOLUME	PURGE: 1 WELL	VOLUME- (TOTAL	WELL DEPTH - ST.	ATIC DEPTH TO WAT	ER; x WELL C	APACITY		GALLONS 3	6	136
LL CAPACIT			= 0.04 125 = 0.00 UMP OR TUBING UEP	T'= 0.16: Y = 0.37			12 = 5.68 S INITIATED AT:		N = 3,785 LITERS G ENDED AT	TOTAL VOLUME PURGE
PTH (feet)	4447-5	The second secon		WELL (leet):	52		342	111	153	LITERS
WATER	LEVEL STABL		DEPTH TO WATER I	WITH FUMP		,,,	10		[33	
TIME INTERV			(feet)	PUMP SETTINGS			DEPTH TO W	ATER (feet)	Water Level Stable	VOLUME PURGED DUR
(min)	(mL/m	(n)	1505 R 10			150	START	END	(Yas or Na)	/SOO
10-20	150	0-	160 K 76	PST/C-40	151/1-	1/0	34.05	3405		1500
10 20	1,50	-	~ ~				3601	210/		1300
										-
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	OOOR.
1, 11	RATE (mUmin)	(lest)	(MID)	OXYGEN (mg/L)		PC)	CONDUCTIVITY (µ5/cm)	(mV)	(describe)	(describe)
2-5 minutes)*	(100-500 m(Jmin):	34.05	(-7.7)	(+/- 10%)*	5.99	ALL Latt	(4/- 184),	- 3 7 (2	Clear	N-OB
408	150		63.7	0.39	5.94	14.80	473	-37.9		None
		34.05	100	0.50					51.00	NOUS
1411	1500	34.02	53.9	142	0-13	14.69	469	-38.6	clear	None
1417	150	34.05	5a.0	0.57	10	10.000	465	-33.2	Clear	Mone
1417	150	34.05	21.4	0.57		14.97	465	-346	Clear	Ivone
M93	150	34.05	31.0	0.49	- 06	14.16	4(0)	-30 6	Clear	Mone
1426	150	34.05	96.4	0.38	5.99	14.92	460	~33.8	cleer	None
1499	150	34.05	249	0.40	5.74	14.44	459	-334	Clear	None
1435	150	3,102	17.0	4.08	6.01	14.15	460	-34.4	clear	None
1438	150	3005	14.3	3.81	5.98	14.93	160	-341	Clear	None
421	150	34.05	11.7	1-21-11	1	14.52	160	-29.7	clear	None
1444	150	34.05	9.43	3,68	6.04	14.33	460	200	clear	None
1991	150	34:05	8.03	3.51	6.03	14.48		35:3	clear	None
1450	150	34.05		3.51	6.03	14.55		-350	Clear	None
145.5	150	34.05	8.43	3.55	10.04	14.41	460	-34.9	Clear	None
			vi	2.100	70	,				
		7				_	-			
24 stabilizat	oon parameters from	EPAIRAIUS ORINA	April 1996							1
					SAMPLING	DATA				
AMPLED BY	PRINT) / AFFILIAT	11	SAM	PLER(S) SIGNATURE	1/20	A		SAMPL	ING INITIATED AT	1555
MODELLE OF THAT	MS DEPTH IN WE	IL ISAMPLE P	UNP PER WRATE IN	to moule you	FIGURE I MIANE	ALEXENDECIBIN	IS EQUIPMENT M		~	1000
leei)	52		50	1	4515	56 mp		Flocoa		
TELD DECON	TAMINATION (Y		FIEL	D-FILTERED (V)	N FILTER	3)2F	- 101		DUPLICATE	(v) N
ATERIAL COO				tion Equipment Type tions: PP = Polypapyii	no 5 = Sacone:	I - tellan O :	Olner /Specify)			
		4		CONDITION CHE			7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	applicable)		
	sh Mount / Star	_		ion: (000)/ Nee	- 1	Well Caps:		en / None	Lock Good	/ Broken / None
tence o		etween Steel & ound Well!? Y	PVC7 Y (N)	is Well Pi ncrete Collar: G	umb? Y / K	,		/ Damaged	/ None	
Andrews.										

Sovereign Consulting Inc 905B South Main Street, Suite 202 Mansheld MA 02040 508-339-3200

MONITORING WELL SAMPLING LOG

Low Flow Sampling



Sovereign Consulting Inc. 4 Open Square Web Scale # 107 Holyaka MA 01040 413-546-0656

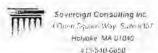
ACO NIM	01		A-100	e mA	DEPTH TO WATE		locate to	9/1/10	Inio ngad	5 HM-10-13
JEGI MIMI	Furt Devi	ins SHL	(mones) 2 1		(100) 210.	4	(lead) 7	2.83	(opmy)	
BING DIAME	TER		ATERIAL GODE	PURGE PU	PURGING	DATA			NT MODEL & SERIAL I	•
- 11	4	(see below)	1.6	Black				Cent = 120		11295 GED
ALLES CONTROL		Tre-10-0 000 0	AL WELL DEPTH - S	C-0025-10-10-10-10-10-10-10-10-10-10-10-10-10-	CCC 4 19 1 0 10 100		2. 122 - 5 0X		N = 3.785 LITERS	TOTAL VOLUME PURGE
ELL SCREEN		UNITRAC	1' = 0.04 1 25' = 0.06. PUMP OF TURING DE	PTHIN FINAL PUM	OR TUBING DEP	THIN PURG	NG INITIATED AT		G ENDED AT	GALLONS 3.5 90
PTH (leet)	1-717	WELL (oft	WELL (feet)	4700	10	05	-110	05	LITERS 3.3 40
	LEVEL STABL		DEPTH TO WATER	and the second second	001	119	-	1	00	1
TIME INTER			(firet)	PUMP SETTING	s	_	DEPTH TO W		Water Level Stable	VOLUME PURGED DUR
0-10	(mUn		Ma Trying di	· floor t cot	base		26.40	26.40	(Yes or No)	INTERVAL (mL)
10-20			10 R-20				26.40	2640	Y	200
						,				
TIME	FLOW RATE (mUmin)	WATER (feet)	TURBIDITY (NTU)	DISSOLVED OXYGEN (mg/L)	Ж	(°C)	SPECIFIC CONDUCTIVITY (µS/cm)	(n/A)	(describe)	ODOR (describe)
3-5 minuses	[100-500 mUmin]*	(46 0.3)	(16: 10%)	[+/- 10%]*	197 0.13	fev. 385.	(+/ 3K)*	(i) 10mV)*	Service .	
0a5	300	210-4	25.4	0.51	10.11	11 91	754	-58.8	Clar.	None
860	ನೆರಂ	26.4	257 -	1.64	(0.19.	14.05		-600	Clear	None
631	900	26.4	93.9	2.50	6.10	14.11	759	-58.0	Clear	Nane
038	200	26.4	22.2	2.20	(0.14	13.95	771	600	clear	None
140	200	264	a5.4	2.94	6.18	13.88		-63.5	Clear	None
1044	,200	26.4	177	3.03	6.19	13.77	773	-64.8	clear	None
1047	200	12.016	19.60	3.04	6.20	13.60	777	-663	Clear	None
040	200	12.06	18.1	2.88	6-21	1361	779	67.5	Clear	None
053	200	1.06	18.0	2.73	6.2	13.60		68.0	Clear	None
056	200	No.4	18.0	3.71	66 2)	1358	782	-685		None
到105	200	Du y	18.8	2.76	6 39	13.5	780	-68.6	Clear	None
				Ť.						7
			-		-					
		4.7.2.		10 to 10 to 10		4,-			4. ×	
	0-30	1					1		- 1	4, ,, ,,
"A stabilizat	tion parameters from	EPA/540/S-95/50	4 April 1996	18 8	SAMPLING	DATA				
AMPLEO BY	(FRINT) I AFFILIATI	ION	SAM	PLER(S) SIGNATUR				SAMPL	ING INITIATED AT	SAMPLING PNOED AT
をだ				Creut	4	CH TIME			5	1150
Cold	420 420	2.0	OML/hin	per minute)	4		icmo85 t			Purge Contrain
	ITAMINATION (Fate	D-FILTERED (V)		SNE			DUPLICATE	Y (B)
ATERIAL COD	ES AG - Amb	dr Blace CG & Cla		CONDITION CH				noolicable i		
dence o	sh Mount (Star I Rain Water Be of Ponding Arc	Iween Steel 8	General Condit	ion: Good)/ Ne	eds Repair	Well Caps	Riser Good		Lock: Good / None	Broken (None)
	of Ponding Arc	ound Wellt?	6	ncrete Collar:	Suo / Crack	ed / Leak	ing / None		2 SV-ME	(12915)



508-339-3200

MONITORING WELL SAMPLING LOG

Low Flow Sampling



PROJECT NAME PROJECTI OCATION WELLED Fat Devens SIL Ayer Ma SHM-10-15 DEPTH TO WATER DIECT MINNER WELL DIAMETER ACOCI (feet) 56.80 **PURGING DATA** PUMP EQUIPMENT MODEL & SETIAL & CONT - 1209 Rome 116 TUBING DIAMETER TUBING MATERIAL CODE Bladder PE (ane pelow) Rome 11421 GALLONS. 5,12 WELL VOLUME PURGE: 1 WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Foot): 0.75 = 0.02; 1'= 0.01; 1.25'= 0.05; 2'= 0.16; 3'= 0.07; 4'= 0.65; 5'= 1.02; 5'= 1.47; 17'= 5.88; WELL SCREEN INTERVAL [INITIAL PIJMP OR LUBING DEPTH IN [FIVAL PIJMP OR TUBING DEPTH IN [FIVAL PIJMP OR TUBING DEPTH IN] I GALLON = 1 785 LIVERS TOTAL VOLUME PURCED FURGING ENDED AT GALLONS WELL (Gee) 52 1340 1455 WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP DEPTH TO WATER (feel) VOLUME FURGED DURING TIME INTERVAL FLOW RATE PLIMP SETTINGS Water Level Stabin (Yes or No) INTERVAL (ML) (din) (mL/min) 0-20 Startal pump - had to restauce and start 1500 1950 24.70 7400 D-10 R-20 TPS1=175 CPS1=50 150 20-30 24.70 1500 TIME FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR опоя OXYGEN CONDUCTIVIT (describe) RATE (NTU) (describe) (mUmin) (feet) (mg/L) (µS/cm) (+4- 10%)* (=/ 10mV)* 11/4 331 (+1- 10%) (+) 0 1Y 621 16.45 Clees 507 56.0 417 150 24.70 16.8 0.34 none 1422 0.39 -58.9 8.11 24.70 5010 none 24 70 16.9 clocanone -60.1 57.3 Clear 24.70 44 none 18.9 503 1437 150 24.70 0.47 15.74 34.5 none 150 24.70 0.40 1021 15,40 503 -53.4 Clias none 0.33 15.45 53.3 1447 150 24.70 502 nene 11.02 503 150 -52.7 1452 nen A stabilization parameters from F.PAIS40/S-95/504 April 1996 SAMPLER(S) SIGNATURES SAMPLED BY (PRINT) / AFPILIATION SAMPLING ENDED AT: 1545 FIELD HARAMITER MODEL & SERVIL RS MORE COMMENTS CONTRACT 52 150 YS1 556 09500085 10 Flucus Lamette 20120 E ME12915 FIELD FILTERED (Y FRIER SUE CLAT FIELD DECONTAMINATION DUPLICATE 0 Filhalus Equipment Type AG - Amber Glass EG - Clear Glass PE = Payathyland PP = Polypropyland 5 = Steams, T = Tellon, D = Olina (Specify) MATERIAL COOPS WELL CONDITION CHECKLIST (circle oppropriate itera(s), cross out it not applicable) Well Caps: (Good / Broken / None Type: Flush Mount Sland Pige General Condition: Good Needs Repair Ts Well Plumb? (Y) N dence of Rain Water Between Steel & PVC? Y / N PVC Riser: Good / Damaged / None Concrete Collar: Good / Cracked / Leaking / None vendence of Ponding Around Welli? Y / (N) DUP-090110- P/4

Soveraign Consulting Inc. 9058 South Main Street Some 202 Manafeld MA 02048

MONITORING WELL SAMPLING LOG



AL A			PROJECTIO	CALIFORN A			- 1	DATE AL	V.	WELL D
DIECT NUM	1-007		WELL DIAME		Incern in water	6 00 -	d loreste to	SCHUTCHE	10 PIOREA	SHM-10-14
			(mches)	2 "	(feet) 20.5		5 Hoeri 6	2.35	(dema)	
UDING DIANE	TER		TERIAL COOK P	PURGE PUN	PURGING		_		ENT MODEL & SERIAL	
nches)	SVIAAR STORES	(see below)				cicler		GALLONS O	7 Pump	INAL GED
				TATIC DEPTH 10 WA			12 = 5.88	1 GALLO	Salvans	TOTAL VOLUME PURG
EPTH (lea)			LIMP OR TUBING DE	PITTIN FRAL PUMP WELL (feet)	OR TURING DEP	THIN PURGIN	GINITIATED AT		IG ENDED AT	GALLONS:
(02-62		72	mest (ree)	72	9	57			LITERS
WATER	LEVEL STABL		DEPTH TO WATER	WITH PUMP 20	0.47					
TIME INTERV	VAL FLOW R	ATE		PUMP SETTING			DEPTH TO W	ATER (feet) END	Water Level Stable (Yes or No)	INTERVAL (nil.)
0-20	-	^	ushing.	pumo 4	water le	vel				4000
20-30	22.			TPS1-150			20.57	20.87	Ves	1500
				7				-		
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	ρΗ	TEMP	SPECIFIC	ORP	COLOR	ROCO
	(mUmin)	(faet)	(NIA)	OXYGEN (mg/L)		(°C)	CONDUCTIVITY (µ\$/cm)	(mV)	(describe)	(describe)
3-5 risulas)*	(100-500 mU/min)*	(0/-00)	(5/- 10%)*	(16. 10%)	J4F 011	(4/- 350)*	10/ 38)*	Tel: (desd)	11 1	
1030	225	20.87	186	0.36	5.14	14.65	1069	-17.5	Cloudy	none
035	225	20.67	267	0.27	5.56	14.44	10000	-40.2	Cloudy	none
040	22.5	20.87	221	0.28	5.86	14.51	lolelo	-56.4	Cloudy	nome
04.5	225	20.57	269	0.23	10.04	1443	lales	-1010.56		none
050	225	20.87	295	0.19	6.14	14.27	iolo 9	-76.8	Cloucky	none_
1255	225	20.47	227	0.15	6.25	H.35	670	-42.7	Clouchi.	none
1100	225	80.67	207	0.20	6.29	14.37	1071	-43.1	Cloudy!	nome
1105	225	20:07	168	0.20	628	14.50	663	-84.0	Cloudy	nome
110	225	20.87	113	0.19	6.30	14.56		-83.8	Cloudy	none
115	225	20.67	72.4	0.20	10.31	14.40	46460	-43.6	Cloudy	none
1120	225	20.57	5A.5	0.18	633	14.39	647	-85.9	Clear'	none
125	225	20.67	55.5	0.17	6.35	14.42	649	-87.9	Clear	none
130	225	20.87	43.3	0.17	6.35	14,44	649	-67.9	CLEAR	none
135	225	20.87	34.4	0.18	6.35	14.46	-	-464.)	Clear	none
140	225	80.87	359	0.14	6.34	H.56		-87.6		none
195	225	20.67	34.7	0.18	6.35	14.44	643	-87.4	Clear	none
"A stabilizati	on parameters from	EPA/540/S 95/504	April 1996		SAMPLING	G DATA		-		1000 1000
AMPLED BY	PRINTIFAFFILIATI	ON II	SAM	NPLER(S) SIGNATUR				1000000	ING INITIATED AT	SAMPLING ENDED AT
	REPORTED WE	T STEATE BY	IMP FLOW PLATE (m)	per (mm/e)	FIELD PARAME	TEH MONITURIS	RG EQUIPMENT M		47	1223
72	,	235		LO FILTEREO (5	N FILTER	SIZE pri			_	
IELD DECON	TAMINATION O	N		ation Equipment Type		1			DUPLICATE	* (S)
MATERIAL CODE	S AG + Amon	Glass CG = Osa		CONDITION CHI	ECKLIST Icad			apolicablei		
dence of	h Mount / Slan Rain Water We of Ponding Aro	ween Steel &	General Condi	tion: G 6 / Ne	eds Repair lumb? Y /	Well Caps:	Ood / Brok	on / None	4.4.0	/ Broken / Non

MONITORING WELL SAMPLING LOG

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4 Open Square Way, Suite ASST-Holyoke, AIA 81040 410-540-0850

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Fort	Toll	inns St	IL	De 100	COLLECTION	3				9/2/10		SHM-10-16
Fort THEOD	SER C	600	-	Wett	DIAMETER		(feet) 8.64	P	(then) 8	D' MOTTOM	(ppmv)	
							PURGING I			7.7.		
ties) 14	IER		(see below	ATERIAL COOP		Bladde	PLAP				ENT MODEL & SERIAL A	1
	PURG	E. 1 WELL	VOLUME: (TO	1.7	TH - STATICO		TER) × WELL	CAPACITY		GALLONS	gallons lun	FRS
			0.75 = 0.02,	1°=004; 1.2	5°=0.06; 2°=0	16. 3' = 0.3	7; 4°≥0.65; 5° =	102: 6'= 1	47. 12° × 5.88	GALLO	N = 3785 LITERS	TOTAL VOLUME PURGED
PTH (Icel)				(Inni)	BING DEPTH IN	WELL (leet)	OR TUBING DEP		ING INITIATED AT	PURGI	IG ENDED AT	GALLONS:
		87		89			89,	13	58			LITTERS:
		EL STABL	Aug. 1 Aug. 1	(leat)	WATER WITH P	P SETTING	66					
O mon 7	IAL	FLOW R	iri)						DEPTH TOW START	(ATER (feet) END	Water Level Stable	VOLUME PURGED DUR! INTERVAL (mL)
2+-0		50	Re	611 do	Di's chan	gelo	- CB1 -		8.65	8.65	405 Yes	
7-9	110	275		20/1	0	3			8-65	865	Yes	
-20		275		20/10	TP	51-275	- CB1 -	180	865	865	Yes	3000
		Other										
TIME. T		r) out	Lacrette	1		0.0001.000		T 2010	SPECIFIC	ORP	COLOR	ODOR
isiwe.		PLOW RATE	DEPTH TO WATER	TURBI (NT)		SSOLVED DXYGEN	pei	TEMP (°C)	CONDUCTIVITY	(mV)	(describe)	(describe)
3-5 mimiles)*		mUmin) soa mUmin)*	(feet)	(*6.10	(N):	(mg/L)	100 0 100	66 Mir	(45/cm)	(*1. 10mv)*	**	
400	27	-	865	105	-	19	6.98	11.78	811	-317.7	CLECTOURY	None
423	****	75	8.65		-	.15	10.95	11.75		- 299. 8	chitte cloub	More
426		75	8.69			.19	6.99	11.69		.995.3	Clastie cloud	
496		75	8.68				6.99			the second of the second	1: He Clarke	
431			1 /1%			15	6.99	11.603	2	-331.4	little Chul	Nane
	27							قوا اا		-233.5		None
1434	8		8.65			110	699	Hille		-934.8	little Claro	
N37		75	8.60			16	6.98	11.40			little clary	None
1440	9	15_	8.65	78	S	17	698	11.42	784	-933.8	littleclary	None
				4		_					,	
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					- ,							
											11 11 11 11	
		-23	230	Y	-0,000	The same		17				
125		300	1111111	190	3 67	- 2	1 - N -				11.74	
											12 0000	
'A stabilizati	ion par	amelers born	EPA/540/5-95/	504 April 1996			T.	1				
AMPLEO BY	PRINT	VAREBIAY	ON:		SAMIA EDIS	SIGNATUR	SAMPLING	DATA		FALLO	LING INITIATED AT	SAMPLING ENDER AT
		Foley			100000000000000000000000000000000000000	1/1	7				145	1515
UMP OR TUB			LE SAMPLE	FUMP FLOAVE	ATT CON per CAN	Mey (FIELD PARAME	TERMUNIC	dec comment M		1,10	1012
82	1		1 2	75								
IELTI DECON		ATION: (V)	-		FIELD FILTS	_	N FRITER	SIZE	ď		DUPLICATE.	Ø 14
ATERIAL CODE		over 11. A	Glass CG o	Clear Gleos PE		PP = Polypropy	duru 5 - Silenna	T - Tullon	D = Olfier (Secoly)			
			200						env(s), cross out if not	applicable)		
	Rair	Water Re	lween Stee	General	Condition (is Well P	eds Repair Numb?: Y / G	Well Cap	Good / Brok	ten Mode	Lock: Cond	/ Broken / None
_vendence REMARKS		onding Aro	und Well?	Y 1 (1)	Concrete	Collar: (300d / Crack	ed / Lea	king / None			



Sovereign Consulting Inc 9958 South Main Street, Suite 202 Manshold MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



ROJECT NAM	Devens	ALF	I-HOVECT LOC	ATON				DATE 917	110	SHM - 10 - 04
DIECT NUM			WELL DIAMET	ER.	(let) 7-10		DEPTH TO	ROTTOM	PID REAL	
Viole Minie		Dispure 143	TERIAL CODE	PURGE PUN	PURGING L				NI MUDEL & SERIAL	
Khing Divivie	34"	(nec below)	PE		TALTIL			GEOPVERP		
ELL VOLUME	PURGE: 1 WELL	VOLUME (TOTA	L WELL DEPTH - ST	ATIC DEPTH TO WA	TER) X WELLO	APACITY		3.5	Li	TERS
ELL CAPACIT ELL SCREEN		0.75 = 0.02. 1	" = 0.04 1.25" = 0.06, PUMP OR TUBING DEF	2' = 0.16; 3' = 0.3	7: 4'=065; 5"	102, 6 = 147	12' = 5.89 C INITIATED AT	GALLO	N = 3.785 LITERS	TOTAL VOLUME PUNGED
EPTH (leel)		WELL (I		WELL (feet)		13.000		100	- 1	GALLONS CO. 5
55-1	05' LEVEL STABL	17471011	GO DEPTH TO WATER	60		13	40	114	90	I II ENA
TIME INTER	12 CD 2 LAL DE G		(feet)	PUMP SETTING			DEPTHTOW	AYED Hasts	Water Level Stable	VOLUME PURGED DURIN
(min)	(mL/ai			PUMP SETTING	3		START	END	(restor No.)	INTERVAL (mL)
15 min	390	2	250 Krpm				710	2.90		7Liters
-	+	_				-				
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	gat	TEMP	SPECIFIC	DRP	COLOR	000н
	RATE (nat/min)	WATER (feet)	(NTU)	OXYGEN (mg/L)	1	(c)	CONDUCTIVITY (µ3/cm)	(mv)	(describe)	(describe)
3.5 mirutesy	(100-200 kul/min).	(-1- 0.3).	(+1: 10%)*	(=// 10%)*	(+/- 0.1)*	(4)- 3%)*	(A): 3X()*	IN 10mer	- 100	reter to the
400	300	7.20	14.4	0.60	5.96	134a	704	23.4	Clear	None
405	350	7.30	11.10	0.49	5.97	12.43	680	27.9	Clear	None
408	320	7.20	496	0.43	5.99	19.00	671	0-41334	Clear	None
11.2	300	7.20	7.05	0,30	5.98	19:01	666	40.2	Clear	None
414	300	7.00	4.53	0.24	6.01	12.09	lololo	42.4	Clear	York
1417	320	720	5.48	0.19	6.00	11.93	6001	413.9	Clear	Hone
1490	320	7.20	3,96	lara	6.00	12.08	658	43.4	Clear	Nune
423	300	7.20	401	0.33	10.00		657	413.3	Clear	None
1426	320	7.00	11 28	0.03	5.99	12.10		43.7	Clear	None
							100			
									7	
								1 = 1		
				-	1					
-51			70					-	-	
_	100	97.0		-	-					
PA stabilizat	kon parameters from	EPA/540/S-95/504	1 April 1996		-	-				1
AMPLED BY	PRINTI/ AFFILIATIO	SIN .	ISAM	PLER(S) SIGNATUR	SAMPLING	DATA		ISAMPI	ING INITIATED AT	SAMPLING ENDED AT
Fr	-1		3,00	Erem	100			1	30	1450
HIT PO WILL	ING DEPTITATIVE	Acres of the second	OMPTION BATTON		FIELD PARAMET	THE PONTON	is equippasan in	The second secon		11700
	O O TAMINATION: (?)	N N		O-FILTERED D	N FILTER	SIZEjim			DUPLICATE	, 0
ATERIAL COO		Gass CG = Cle	w Class PE = Polyanty	ноп Ециртені Туре ное РР = Гоургору			Other (Specify)			
	- 7	**		CONDITION CH		120 120 120 120	~			0
	h Mount / Span		General Conditi		eds Repair lumb? Y / (Good / Brok Riser Good	en / None / Damaged	Lock Good / None	/ Broken / None
			(M) Con					Loningeo	1 and 6	
REMARKS										

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508-339-3200

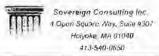
MONITORING WELL SAMPLING LOG

Squereign Consulting linc a Open Square Way Swite #307 Holyake, MA 01040 I ow Flow Sampling 413-540-0650

POLICE CAMER PROPERTY OF THE P	ROJECT HAME	ALOO	4 Devens 1		pal Westerna	ir- Transact	mut. Ay	er		7/10	SHM- 6-3
PURCINC DATA INCIDENCE TABLE FOR THE COLLEGE	DIECT NUM	The second second second	i	WELL DIAMET		DEFIN O WATE	R	DEPTHIO	69.	36 PIDREAD	ING.
CANDING CONTROL POTAN PICE	TOTAL COLLEGE			resin cone		PURGING I					- 7000
CANDING CONTROL POTAN PICE	(Just)	3/4"			G. e.	gump			GEOPU	V6	40100
11.CAMOC/FORWARD No Folion 12 of 10%	ELL VOLUME	E PURGE: I WELL	72-200-9-10-		TATIC DEPTH TO WA	ATER) x WELL C			215	Cogliuns	
THINGS PART	ELL SCREEN		ONTIAL	PUMP OR TUBING DE	PTHIN FINAL PUME	PORTURING DEPT	1.02; 6'= 1.47	7: 12" - 5.88 IG INITIATED AT	1 GALLO	M = 3.785 LITERS	TOTAL VOLUME PURGET
MATERILEVEL STABLIZATION Company Company Property Proper	EPTH (feet)		WELL (16	anti	WELL (lest):						HTERS 9/ lasse
Mark Mark			LIZATION	DEPTH TO WATER		23		15 1	1,0	113	1 in hear
10 13 13 10 14 15 10 14 15 15 15 15 15 15 15			RATE	(feet)	PUMP SETTING	is					VOLUME PURGED DUR
1765E	-			Indonad S	allines I W	- nd S	· As		1		
PATE WATER CRUTU CONCUCTION CRUTCH C	-	III IMS	30%	In I tour	striid y lane	Alle SIVE	F-5	u.r.v.s.	6 1 × 01	124	N SI DOS
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100-00 1-3 100-00 meterny 100-000 100-00 100-00 100-		1.00	The state of the s	(NTU)	7 7 7 7 7 7 7		(LC)	The second secon	(MV)	(describe)	(describe)
0.3	3-5 minutes)*	Carl No.	1st 0.37		No. of the last			(4) sx)-		2.10	
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103 135 37.00 13.5 1.78 6.31 3.35 3.34 15.8 Clear None 10.34 13.5 37.00 13.4 1.78 6.31 12.10 33.45 19.3 Clear None 10.35 12.10 10.35 12.10 10.35 1	260			1	10000	12					THE THE PERSON OF THE PERSON O
1037 105 07-006 13-4 1-70 4-31 11.93 3341 149-1 Clear None 1037 105 07-006 13-4 1-70 4-31 11.93 3341 149-1 Clear None 1037 105 07-006 13-4 1-70 4-31 11.93 3341 149-1 Clear None 1038 105 07-006 13-4 1-70 4-31 11.93 3341 149-1 Clear None 1039 105 07-006 13-4 1-70 4-4 1-70 4-4 1-70 4-4 1-70 4-70 4-70 4-70 4-70 4-70 4-70 4-70 4	for the contract of the contract of		-				1000				
**A SERVICE OF PARTICIPATION OF THE PRINT SCHOOL OF THE PRINT SCHO	1031					71			129.8		
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*A STABILIZATION PROPERTY IN WELL SAMPLE PRIMP FLOW HATE (mil. pi.; minne.) **A STABILIZATION: SAMPLING DATA SAMPLING DATA SAMPLING DATA SAMPLING PRINTINATION: SAMPLING PRINTINATION: SAMPLING PRINTINATION: SAMPLING PRINTINATION OF N FRES.D-FILTERED. N FRES	103.1	19?	37:06	15.4	1.79	(e. 2)	11.93	3391	Jakit	Clear	Mava
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DIAP OR FIGURE PLINA FLOW HATE (INC.) IN FILTER SIZE	AMPLED BY	PRINTI/AFFILIAT	DON:	ISAN	MPLERIS) SIGNATUR		DATA		SAMP	ING INITIATED AT	SAMPLING ENDED AT:
DIAP OR TUBING DEPTH IN WEIL SAMPLE PLINE FLOW HRATE (mit. pic. pulminoc.) PELO FILTER SIZE	Will have him				Erin 1	On			1 45		The state of the state of the state of
FUNDECONTAMINATION (**) N FILTER SIZE	UMP OR THE	ING DEPTH IN WE	EL SAMPLE PI			NE LI PARAMET	TERMONTORN	NG EQUIPMENT M			
Filtration Equipment Type: ATERIAL CODES AG = Aminer Class CG = Clear Class PE = Polyethylene, PP = Polyeth	65	5	19			M FILTER	euse um				-w
WELL CONDITION CHECKLIST (circle appropriate item(s), cross dull (item appropriate) ype: Flush Mount / Stand Plac General Condition. Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None idence of Rain Water Between Steel & PVC 2, Y / N Is Well Plumb?: Y / N PVC Rise. Good / Damayed / None vendence of Ponding Around Well? Y / N Concrete Collar: Good / Cracked / Leaking / None EMARKS:	IFI. N DECON	TAMINATION (Y) N				Sikt pm			DUPLICATE	€ N
ype: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None idence of Rain Water Between Steel & PVC2 Y / (I) Is Well Plumb?: Y / (IV) PVC Rise: Good / Damayed / None vendence of Ponding Around Well? Y / (IV) Concrete Collar: Good / Cracked / Leaking / None	ATERIAL CODE	ES AG = Amb	Her Glass CG • Chr		The second second second						
idence of Rain Water Between Steel & PVC2, Y / N Is Well Plumb?: Y / N PVC Rise. Good / Damayed / None. vendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None EMARKS:	- Carrie Phys.				~					needs Back	(C)
EMARKS:	idence of	Rain Water B	letween Steel &	PVCZYI O) Is Well P	Plumb? Y / (PVC	Riser Good			/ Broken / Non
			ound Welli? Y	/ (N) Co	ncrele Collar:	Sood / Crack	led / Leaki	ng / None		+	
1)07-01010-110	CMAIN		12-09C	5710- FIL	,						

Sovereign Consulting Inc. 9623 South Minn Street, Sule 202 Minnstinid, MA 02048 508-239-3200

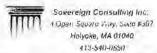
MONITORING WELL SAMPLING LOG



ROJECT NAM	ACCOL.	009	PROJECT TOO	1221	jen6			DATE 91-	7/10	SHM-10-03
OECTION	MARK		WELL DIAME IS	5"	DEPTH TO WAT (Icel)	18.21	DEPTH TO	63.90	PID REAL (SDMV)	DING
BING DIAM	6100	Trundic III	TERIAL CODE	PURGE PU	PURGING			A	ENT MODEL & SERIAL	He
nes) J	14"	(see helme)		Per	C			Fra. 71.10 vi		
			AL WELL DEPTH - ST	2000		SQ AUTO		GALLONS		TERS.
LL SCREEN	TY (Gallons Per Foo N INTERVAL	INTIAL	1' = 0.04, 1.25' = 0.06; I'UMP OR TUBING DEP	THIN FINAL PUM	POR TUBING DEP		GINITIATED AT		ON = 3.785 LITERS	GALLONS:
PTH (lent)	55-65		18.015	9' WELL (leet)	659	1	20	1	429	LITERS: 30
7.4.4	R LEVEL STAB	0.7.7.00	(feet)							
IME IN EF	RVAL FLOW (mL/r			PUMP SETTING	is.		DEPTH TO W START	ATER (leat) END	Water Level Stable (Yes or No)	VOLUME PURGED DURIN
0-10										6 L
0-a	0 40	2 0-	350 rpm, Sp	eed Cor	itrol 75	70	18.81			44
	-	-		_						
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RATE (mUmin)	WATER: (feel)	(NTU)	OXYGEN (mg/L)		(.C)	GONDUCTIVITY (p5/em)	(mV)	(describe)	(describe)
3-5 minutes)*	(100-500 mUmin)*	10/- 031	(W-105)*	(1/- 10%)*	(iv. u.i)	(-/- 3%)*	001-	()/- 10mV)*	21000	100/0
1:45	400	18.21	0.56	0.65	6.07	12.66	886	-90.7	checur	none
:50	400	18.31	3.37	0.40	5.45	1253	689	-243.7	clear	none
:55	400	18.21	0.59	1.44	5.94	12.54		-230,9		none
	400	18.21	0.26	1.57	5.90	12.30		-2633	-	none
05	400	1821	1.04	154	5.91	12.41	842	-265.1	Clear	none
1610	400	1821	0.62	1.37	5.93	1248	180	-252.9	Clear	nene
215	400	1821	082.	1.21	5.94	1244	441	-252.46	Clero	none
20	400	14.21	0.73	0.92	5.95	12.41	860	-2594	Claca	nance
23	400	19.21	0.84031	0.84	5.94	12.45	881	-258.9	Clear	nane
2:26	400	14.21	0.64	0.47	5,94	12.45	188	-258.3	Clear	nine
_										
										+
_						1				
EPA stabilizal	fion parameters from	EPA/540/S-95/50	April 1995							
AMPLED BY	(PHINT) I AFFILIATI	OW	SAMP	LER(S) SIGNATUR	SAMPLING	DATA		SAMPL	ING INITIATED AT	SAMPLING ENDED AT
5	ov Can	cmH +3	SAR	CMH,	DAR /	Julan	Herr	- 12	130	1450
	HING DEPTH IN WE	LE SAMPLE P	UMP FLOW PATE (OL P	or orongel		TER MONTORIN	G COUIPMENT MO	DOEL & SERIAL	Vs.	
	59'		400 FIELD	FILTERED 6	N FATER	SIZE:uin				- 4
ELD DECON	TAMINATION C) 11	1000	on Equipment Type:	34040				OUPLICATE	y Ø_
ATERIAL COD	ES: AO - Amb	er Olass. CG = Cler		ONDITION CHI		- A - A - A - A - A - A - A - A - A - A	Other (Specify)	Contract V		
tunni Eli-	ch Mount 10	G pile		ONDITION CH			_		Lander Card	/ Broken Alad
	sh Mount / Stan f Rain Water Be		General Condition PVC7 Y / (N)		lumb?: Y /		Good / Broke	/ Damaged	A SV F F	/ Broken None
Propose a 18	of Ponding Arc	elected		crete Collar:	7.		_	. Samaged	V. Marie	
REMARKS			9	_						

Sovereign Consulting Inc. 905E South Ham Street, State 202 Manstiela, MA 02048

MONITORING WELL SAMPLING LOG



	ROUBLIT NAM	AC DO	1.000	PROJECTIO	Deve Deve	ns			DATE 91-	1110	54m-10-09
	ROJECT NUM		17.75			(feel)	3	DEPTH TO	BOTTOM	PID READ	ING
THE VOLUME PURCE: WELL VOLUME (TOTA) WELL CEPTH 10 WATER (OPTH TO WATER) X WELL CAPACITY WELL CAPACITY (DEBNOE PURCE) 278 - 0.02 1 28 - 0.02 2 0 0.02 2 0.0					1:0	PURGING		1,,-,			
Time Provided Pr	UBING DIAME	alu"			PURGE PUM	PTYPE			PUMP EQUIPM	ENT MODEL & SERIAL I	5
PRINCE PROPERTY PRINCE PROPERTY PRINCE PROPERTY PARKED BETTER PARKED	ELL VOLUM	E PURGE: 1 WELL	VOLUME: (TOTAL	WELL DEPTH - 5	STATIC DEPTH TO WA	TER) X WELL	CAPACITY		GALLONS	Lit	FRS
WATER LEVEL STABLIZATION COPPN TO WATER WITH FUNDS PLAND SETTINGS PLAND SETTINGS COPPN TO WATER WITH FUNDS PLAND SETTINGS PLAND SETTING											
### WATER LEVEL STABILIZATION CORPH TO WATER WITH PUMP 9.35 CORP CORP COLCAR Colc		171-67		E) Fat		1					Tenno
TIME NIENVAL ((min)) O-10 10-20 375 O-350 HPM Speed (embe) SOZ 9.55 9.55 V 5 L TIME PLOW RATE ((min)) RATE ((min)) ((min	WATER	TIEVEL STARI	IZATION		SWITH PUMP O	500	/	1.76		Sa	41
0-10 0-10 10-20 375 0-350 hpm speed Central (50% 9.55 9.55 V 5 L 11ME FLOW RATE (HID) DEPTH TO TURBUTY DISSOLVED OXYGEN (FG) (HID) CONSULTIVITY (HID)	10,000				1.	35		DEPTHTOW	ATER (legt)	Water Level Stable	VOLUME PURGED DURIN
TIME FLOW DEPTH TO TURBUITY DISSOLVED DISS	(min)	(mL/m			7.50. 75.070						INTERVAL (mL)
TIME FLOW RATE (MINIT) DESTINITO WATER (MINIT) DESCRIPED OFFICE (MINIT) DESCRIPED OFFICE (MINIT) DESCRIPED (MINIT) DESCR				r. a 000		Acab o	1.7	910	Qer	V	
RATE WATER WATER (NTU) CONTOCK (NTU) (NT	10-2	0 3/3	0.3	SO WYII	speed (mtol c	50/0	1.00	7.25		56
RATER WATER (NTU) CONTOCK (NTU) (N										-	
RATER WATER (NTU) CONTOCK (NTU) (N											-
10.74 3.75 9.55 1a.4 4.48 6.19 12.92 10.60 10.40 10.60 10.40 10.60 10.40 10.60 10.40 10.60 10.40 10.60 10.40 10.60 10.40 10.60 10.40 10.60 10.40 10.60 10.40 10.60 10.40 10.60 10.40 10.60 10.60 10.40 10.40	TIME.	227.0	- 100 to			рН	10.74	The second second second			
10:14 375 9.55 12.4 4.48 6.19 12.92 10.75 -1201 clear none 10:19 375 9.55 39.69 3.14 (e.11 11.52 10.107 -1442 cloudy none 10:24 3.75 9.55 171 2.26 6.12 11.44 10.65 -1.24.6 cloudy none 10:24 3.75 9.55 31.9 2.81 6.11 11.49 10.66 -1.73.7 clear none 10:25 3.75 9.55 31.9 2.81 6.11 11.49 10.66 -1.73.7 clear none 10:25 3.75 9.55 3.60 2.98 6.15 12.01 10.78 -259.6 clear none 11:05 3.75 9.55 2.38 4.74 6.14 11.88 10.78 -2928 clear none 11:05 3.75 9.55 1.29 4.49 6.16 11.88 10.78 250.4 Clear none 11:05 3.75 9.55 0.26 5.13 6.18 12.13 10.79 -171.7 clear none 11:20 3.75 9.55 0.26 5.13 6.18 12.13 10.79 -171.7 clear none 11:25 3.75 9.55 1.66 2.57 6.14 12.13 10.81 -127.6 clear none 11:35 3.75 9.55 0.44 6.35 6.17 12.16 10.78 -183.5 clear none 11:35 3.75 9.55 1.66 2.57 6.14 12.13 10.81 -127.6 clear none 11:30 3.75 9.55 1.45 0.92 6.19 12.07 10.79 -185.6 Clear none 11:35 3.75 9.55 1.45 0.92 6.19 12.07 10.79 -185.6 Clear none		(mL/min)	(feet)		(mg/L)		(,c)	(u5/cm)		(describe)	(describe)
10:9 375 9.55 3989 3.16 (e.11 11.52 1/10-7 -1442 cloudy name 10:24 275 9.55 171 2.26 (e.12 11.64 1065 -174.6 Cloudy name 10:24 375 9.55 31.9 2.81 (e.11 11.49 1066 -173.7 Clear name 10:25 375 9.55 31.9 2.81 (e.11 11.49 1066 -173.7 Clear name 10:25 375 9.55 2.38 4.74 (e.14 11.88 10.78 -2.90\$ clear name 11:05 375 9.55 2.38 4.74 (e.14 11.88 10.78 -2.90\$ clear name 11:05 375 9.55 0.26 4.49 (e.16 11.88 10.78 250.4 Clear name 11:05 3.75 9.55 0.26 5.13 (e.18 12.13 10.79 -171.7 clear name 11:20 3.75 9.55 0.26 5.13 (e.18 12.13 10.79 -171.7 clear name 11:25 3.75 9.55 0.26 5.13 (e.18 12.13 10.79 -171.7 clear name 11:25 3.75 9.55 0.26 5.13 (e.18 12.13 10.81 -127.6 clear name 11:35 3.75 9.55 0.84 1.66 2.57 (e.14 12.04 10.80 -123.9 Clear name 11:35 3.75 9.55 0.84 1.66 2.57 (e.14 12.04 10.80 -123.9 Clear name 11:35 3.75 9.55 1.45 0.92 (e.19 12.07 10.79 -185.6 Clear name 11:35 3.75 9.55 1.32 8.53 (e.29 12.07 10.79 -185.6 Clear name 11:35 3.75 9.55 1.32 8.53 (e.29 12.07 10.79 -185.6 Clear name 11:35 3.75 9.55 1.32 8.53 (e.29 12.07 10.79 -185.6 Clear name 11:35 3.75 9.55 1.32 8.53 (e.29 12.07 10.79 -185.6 Clear name	V 3 V 1				-		-			~100 ×	IO m O.C
1024 275 9.55 171 2.26 6.12 11.64 1065 -1746 Cloudy name 1029 375 9.55 31.9 2.81 6.11 11.49 1066 -173.7 Clear name 1029 375 9.55 3.60 2.98 6.15 12.01 1078 -259.6 Clear name 11:05 375 9.55 2.38 4.74 6.14 11.88 1078 -2908 Clear name 11:05 375 9.55 1.29 4.49 6.16 11.91 1079 1409 Clear name 11:10 375 9.55 0.64 4.12 6.16 11.91 1079 1409 Clear name 11:20 375 9.55 0.26 5.13 6.18 12.13 1079 -171.7 Clear name 11:20 375 9.55 2.44 6.35 6.17 12.16 1074 -1835 Clear name 11:20 375 9.55 1.60 2.57 6.14 12.13 1081 -127.6 Clear name 11:30 375 9.55 0.564 1.666 2.57 6.14 12.13 1081 -127.6 Clear name 11:30 375 9.55 1.45 0.92 6.19 12.07 1079 -155.6 Clear name 11:30 375 9.55 1.45 0.92 6.19 12.07 1079 -155.6 Clear name			-		-		10.70		-		100000
1039 375 9.55 31.9 3.81 6.11 11.49 1066 -173.7 Clear none Pomp Tomen At to clean slow book cell 10:55 375 9.55 3.60 2.98 6.15 12.01 1078 -259.6 clear none 11:06 375 9.55 2.38 4.74 6.14 11.88 1078 -290.8 clear none 11:05 375 9.55 1.29 4.49 6.16 11.88 1078 250.4 Clear none 11:10 375 9.55 0.64 4.12 6.16 11.91 1079 140.9 Clear none 11:10 375 9.55 0.26 5.13 6.18 12.13 1079 -171.7 clear none 11:20 375 9.55 2.44 6.35 6.17 12.16 1078 -1835 Clear none 11:35 375 9.55 1.66 2.57 6.14 12.13 1081 -127.6 clear none 11:30 375 9.55 0.84 1.66 6.14 12.04 1080 -123.9 Clear none 11:35 375 9.55 1.45 0.92 6.19 12.07 1079 -185.6 Clear none 11:35 375 9.55 1.45 0.92 6.19 12.07 1079 -185.6 Clear none		4 4				-	11.52		Assessment of the State of the		THE PERSON NAMED IN
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11:30 375 955 0.84 1.66 614 12.04 1040 -123.9 Clear name 11:35 375 955 1.45 0.92 6.19 12.07 1079 -15.6 Clear name 11:40 375 9.55 1.32 8.53 6.22 12.05 1080 2058 clear name	1:20	-		2.44					-183.5		none
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	11:35					6.19					none
11:45 375 955 1.37 3-61 (0.19 12.10 1079 -2330 Clear none	11:40	375		1,32	8.53	6.20	12,05	1080	-205.8	clear	none
	1:45	375	9.55	1.37	3-601	10.19	12.10	1079	-233.0	Clear	none
	EPA stabiliza	lian parameters from	EPA/540/S-95/504	April 1996		SAMPLING	DATA			-	
* EPA stabilization parameters from EPA/54US-95/5IN April 1996 SAMPLING DATA	SAMPLED BY			11 1 54		S - A	1 1	11 1	SAMP		SAMPLING ENDED AT:
SAMPLED BY (PRINT) / AFFILIATION SAMPLER(S) SIGNATURES A 1 1 0 SAMPLED BY (PRINT) / AFFILIATION SAMPLING ENDED AT:	S. Harris S.	Section of the second	1000	Hooch			Men	HONE	フレ	11:33	18:11
SAMPLING DATA SAMPLED BY (PRINT) I AFFILIATION SAMPLER'S) SIGNATURES SOUCCON COUNTY House County, JAN (July) House 11:53 12:11		SINSEPTH IN WE	The second second		Ches unutre)	FIELD PARAME	TEN MONIYORI	AG ECHIPHENT ET	JUST & SERIAL	15	
SAMPLING DATA SAMPLED BY (PRINT) I AFFILIATION SAMPLEY SIGNATURES SOUCCON COUNTY HOSE CANH, JAP JULY HOLD 11:53 12:11 PLANT OR TUBING DEPTH IN SVELL SAMPLE FUND PARAMETER MONITORING EXTREMENT RODGE IS SERIAL IS	DEL D'ALCO				ED FILTERED A	N FILTER	SIZE:jum			primarine	× ~1
SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION: SOUCCON COUNTY HOUSE CONTROL OF THE PRINT OF T	5. 4									DUPLICATE	0
SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION: SAMPLER(S) SIGNATURES SAMPLER(S) SIGNATURES SAMPLER(S) SIGNATURES SAMPLER(S) SIGNATURES SAMPLER(S) SIGNATURES SAMPLER(S) SIGNATURES (PARTY OF TUBING EXPERT HIS VELL SAMPLER FLOW PATE (INL. por minute) FIELD PARAMETER MONYORING EXHIPMENT BY DELETED (S. N. FILTER SIZE:	MATERIAL GOO	IES. AG = Ambe	Glass, CO - Clea						applicable)		
SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION: SAMPLER(S) SIGNATURES SAMPLER(S) SIGNATURES SAMPLER(S) SIGNATURES SAMPLER(S) SIGNATURES SAMPLER(S) SIGNATURES SAMPLER(S) SIGNATURES (11.53 12.11) PUMP OR TUBING DEFTH IN EVELL SAMPLER COLUMN FLOVE RATE (III. por mining) FIELD PARAMETER MONYORING ECHIPMENT MODEL & SERIAL AS FIELD DECONTAMINATION: (7) N FIELD DECONTAMINATION: (7) N FIELD DECONTAMINATION: (8) N FIELD DECONTAMINATION: (9) N FIELD DECONTAMINATION: (9) N FIELD DECONTAMINATION: (9) N FIELD DECONTAMINATION: (10.00) FIELD DECONTAMINATION: (10.0	Type: Flu:	sh Mount /Stan	d Pipe					>=		Lock: Good	Broken / Nona
SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION: SOUC CON COUNTY HOUSE CONTINUES AND HOUSE SIGNATURES FULL DECONTAMINATION: FIELD DECONTAMINATION: FIELD DECONTAMINATION: FIELD DECONTAMINATION: FIELD PRINTING CONTINUES FIELD CONTINUES FIELD PRINTING CONTINUES FIELD CONTINUES FIEL	THE ST.							00		1000	\odot
SAMPLING DATA SAMPLED BY (PRINT) I AFFILIATION: SOUCCON COUNTY HOW THE COUNTY FLOW RATE (III, per minule) PLINIP OR TUBING DEPTH IN SVELL SAMPLE COUNTY FLOW RATE (III, per minule) FIELD PARAMETER MONIFORING ECTIPMENT ROUDEL'S SERIAL RY FIELD DECONTAMINATION: N FILTER SIZE: JUN DIPLICATE Y R MATERIAL CODES. AG = Andew Glasz: PE = Payerlysine. PE = Payerlysine. WELL CONDITION CHECKLIST (circle appropriate dam(s), cross out if not applicable) Type: Flush Mount (Stand Pipe) General Condition: Good / Needs Repair Well Caps: Good / Broken / None Lock: Good / Broken / None		4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	und Well? Y	10	oncrete Collar C		_	771			

Sovereign Consulting Inc. 9050 South Man Street, Suite 202 Mansfield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG



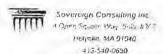
ACTO ROJECT NUM	1.002 1.002	_	MELL DINNE	Deven	DEPTH TO WATE	R. 11	(CEPTILTO		PUTAFAL	SHM-10-USA
			(inches)	1.5	PURGING		((eel)	(00)	(apmo)	
BING DIAME	TER	(ine below)	POLY (PE	PURGE I'UI	IP TYPE			PUMP EQUIPMS	ENT MODEL & SERIAL	ti.
ELL VOLUM	E PURGE: 1 WEL	L VOLUMB- (TOT	AL WELL DEPTH - S	TATIC DEPTH TO W	TER) X WELL	APACITY		GALLONS	151	ERS
			1"=004, 125"=0.06						N = 3.785 LITERS	TOTAL VOLUME PURGE
ELL SCREEN EPTH (Inci)	CONT. TO THE PARTY OF THE PARTY	Programme Company of the	PUMP OR TURING DE	WELL (Inel)	1	170 July 18 40 40	GINITIATED AT:		D'S9	GALLONS:
50 -C	LEVEL STAR	UZATION	DEPTH TO WATER	WATER PLANE	55	7.0	2.70	1 '	0.01	WITERS 4
TIME INTER	0.00101.000	0.000	(feet)	PUMP SETTING	(0.14		DEPTH TO W	ATER (feet)	Water Level Stable	VOLUME PURGED DUR
(min)	(mL)			TOME GETTING			START	END	(Yes or No)	INTERVAL (mL)
0-10	1 (03)			S SMIT AND A		1	20	24	200	1.4
0-20	0 100	0.0	OU BPM, 1	100% Sp	en Car	HD)	26.14	26.14	1es	12
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	ρΗ	TEMP	SPECIFIC	URP	CCLOR	9008
3-9 minutes)'	RATE (mL/min) (100-500 mL/min)*	WATER (feet) (v/- 0.3)*	(NTU)	(mg/L) (+r: 10%)	(*/- B1)*	(*C)	GONDUCTIVITY (µ5/cm) (+/- 3%)*	(mV)	(describe)	(describe)
0:30	100	26.14	146	5.20	501	19.04	201	11.7	Clear	none
0.33	100	2014	143	447	15.01	18.94	202	2.1	Clear	none
0:36	100	210.14	11.8	4.11	5.06	19.419	199	-11.9	Clear	none
1:39	100	2614	18-2	3.82	5.15	19.603	1960	-14.3	Clear	none
2:42	100	26.14	18.6	3.58	5.20	19.65	202	-20-0	clear	none
0.45	100	26.14	9.60	3.35	5.22	19.87	203	-15.9	Clear	nine
548	100	2(a14)	13.2	3.30	520	2010	202	-26.4	Clear	nare
0'51	100	26.14	9.66	3.20	5.27	20.17	202	-26.3	Clear	neme
554	100	21014	8.75	3.10	5.26	20.30	198	-23.2	Clear	none
257	100	20.14	8.92	3.20	527	20.20	200	-24.0	Cleci	none
Lool	1									
					1					11
		4								
		ED AMAGIN ASIA	A Turistical							
IFA BIADWA	on parameters from	EPADAUS 95/504			SAMPLING	DATA	71.17. I			
AMPLED BY	PRINTI/AFFILIAT	ION	SAM	PLERIY SIGNATUR		17		111111111111111111111111111111111111111	ING INITIATED AT	SAMPLING ENDED AT
UMP OR TUE	n 1-1000t	IL SAMPLEP	MP FLOW RATE (INC.	ne (minute)	FIELD PARAMET	ER MONUTORIN	IG EQUIPMENT MC	and the second of	(O O	12:03
ELD DECON	TAMINATION (Y) N	FIEL	D-SILTERED (Y)	N FILTER	SIZE: µm			DUPLICATE	~ (N)
TERIAL COS		_		tion Equipment Type	one: S = Sicone:	T = Tallan : C =	Other (Specify)			
				CONDITION CHI			200 - 120 - 120	opplication)		
vidence o	The second secon	atween Steel &	PVC? Y/M	_	lumb?: (V) N	PVC	Goody/ Broke			/ Broken (Nona)
venuence	of Ponding Are	ound Well? Y	(N) Co	ncrete Collar: &	sood D Crack	ed / Leakir	g / None			



508-339-3200

MONITORING WELL SAMPLING LOG

Low Flow Sampling



ATOY MA PROJECT WAME VICIO (I) 09-08-10 AC 001 - 003 SHM-10-DEPTH TO BOTTOM DEPTH TO WATER PERFACE W 4.78 heer 31-72 **PURGING DATA** TUDING DIAMETER PLMP EQUIPMENT MODEL & SERVAL HS LIBING MATERIAL CODE SNHIOL inches) (sea below) PE Geopump WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY 4.01 WELL CAPACITY (Gallons Per Fool). 0.75 = 0.02. 1' = 0.04. 1.25' = 0.06. 2' = 0.16. 3' = 0.37: 4' = 0.65 5' = 1.02. 6' = 1.47: 12' = 5.86 I GALLON = 3.785 LITTLE WELL SCREEN INTERVAL DEPTH (Ger): WELL (Ger): WEL TOTAL VOLUME PURGED. GALLONS 5 WELL (lect): 67' 67' ME45 1004 6a - 7a DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION (feet) TIME INTERVAL FLOW RATE VOLUME PURGED DURING PUMP SETTINGS DEPTH TO WATER (feet) Water Level Stable INTERVAL (mL) (min) (mL/min) START END (Yes or No! ~ 155 Rpm 4.81 Yes 320 4.81 15min TIME TURBIDITY DISSOLVED FLOW DEPTH TO pH SPECIFIC WATER OXYGEN CONDUCTIVITY RATE (NTU) ('C) (mV) (describe) (describn) (mg/L) (mL/mln) (feet) (us/cm) 101- 541 (16 tomy) 1100-500 mL/mi 1-1- 0 37 1-/- 10% 14/ 104) (3-5 minutes) 955 4.8 298 28.4 3 20 0.50 6.41 13.17 0.50 clear None 5.96 10.97 95B 320 4.81 0.85 0.41 298 53.3 clear None 12.85 21001 4.81 0.24 297 530 320 0.55 Clear Mone 298 4.81 12.78 23.0 320 0.47 0.99 6.17 Clear 1004 None 299 1007 320 0.19 12.69 4.81 6.47 6.23 15.5 cloar None 4.8 0.00 0.17 12.69 299 15.1 Clear lolo 300 6.27 None 10.70 299 13.3 4.81 0.29 0.14 6.09 Clear 1013 300 None B. 71 4-81 0.13 11.8 Clear 1016 300 0.99 6.09 299 None 12.69 299 4.81 1019 320 0.13 6.30 11.4 Clear 0.16 Mone loal 320 481 0.15 12.68 0-12 6.31 Clear Mone 299 50 A stabilization parameters from EPA/540/S-95/50/i April 1996 SAMPLING DATA SAMPLERIS) SIGNATURE SAMPLED BY IPRINTITAFFILIATION. SAMPLING INSTINTED AT SAMPLING ENDED AT Ea 1030 Enin Foles 1105 (feet) 67' YSI INFINCOZ + 095100085 Turby Hy 26858 FIELD FILTERED (Y) @ myms DUPLICATE FIELD DECONTAMINATION (V) N Filtration Equipment Type MATERIAL CODES AG - Amber Glass CG - Cleur Glass PE Payethylene; PP Paypropylene \$ = \$licong: T = Tellun. Q = Other (Specify) WELL CONDITION CHECKLIST (circle appropriate them(s), cross out if not applicable) General Condition: Good/ Needs Repair Type: Flush Mount / Stand Poe Well Caps: 600 / Broken / None Lack: Good / Broken / Mone idence of Rain Water Between Steel & PVC? Y / 6 Is Well Plumb?: Y / D PVC Riser: Good / Damaged / None Evendence of Ponding Around Well!? Y / (N) Concrete Collar: 600 / Cracked / Leaking / None REMARKS: MSIMSD

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MONITORING WELL SAMPLING LOG



ROJECT NAM	ACROL-DC	2	Insarcu ro	Fort 1	Deven:	5			8.10	SHM-10-06
CHECT NUM	MBER		(inches)	1.5"	(feet) 20	.36	(feet)	BOTTOM,	PO REAL (ppmy)	MS
agus DIANA	YED	Incore us	IERIAL COOE	PURGE PUN	PURGING	DATA		THE IND COURSE	ENT MODEL & SERIAL	
has).	3/4	(ner below)	RE	RE	Pol				EN MODEL & SERVICE	15.
LL VOLUM	E PURGE: 1 WELL	VOLUME (TOTA	L WELL DEPTH - S	TATIC DEPTH TO WA	TER) X WELL	CAPACITY		GALLONS	fu	ERS
III CCOLCE	CIMPEDIAN	Diggreen C		7'=0.10, 3'=0.3					N = 3 785 LITERS	TOTAL VOLUME PURG
PTH (leet):	70-80	WELL (I		WELL (feet)				17-000	329	0.44.0
	LEVEL STABI		DEPTH TO WATER	WITH DIMP	13	1	2:32	- 1	2«/	LITERS: 21
TIME INTER		201750	(lect)	PUMP SETTING	0.55		DEPTH TO W	ATER Hant	Water Level Stable	VOLUME PURGED DUE
(min)	(mL/m			FUMP 3211NG	•		START	END	(Yes or No)	INTERVAL (mL)
0-5	-	_				Y 1				21
5-15	425	0-0	ou firm,	6570 Sp	ecd con	1 /121	20.55	20.55	Yes	34
										-
_		-	_							
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	Hq	TEMP	SPECIFIC	ORP	COLOR	ODOR
	RAYE (mL/min)	WATER	(DTM)	OXYGEN (mg/L)		(.c.)	CONDUCTIVITY	(reV)	(describe)	(describe)
(3-5 minutes)*	(100-500 mL/min)*	(feet) (#/- 0.31)*	(+/- 10%)*	(Mg/L) (M- 10%)*	(4) 0 1F	(+/- 310)*	(Ir2/cm)	(*/- 10mV)*		
2:48	425	20.55	6.32	666	6.01	1134	781	74.0	Clear	nine
2:53	425	20.55	4.97	5.11	6.02	11.36	786	-76.4	Clear	none
258	925	20.55	2.90	3.85	6.05	11.74	786	-73.8	clear	none
9:53				700000				17.00		-
3:03	405	20.55	2.24	3.62	610	11.79	785	-73.3	clear	none
307	425	20.55	2.24	3.86	611	11.62	780	-71.0	Clear	none
312	425	20.55	3.35	3.34	611	11.82	786	-68.9	CLEAR	none
317	425	20.55	4.84	3.00	6.15	11.107	789	67.5	Clear	nene
322	425	20.55	3-94	3.01	71-0	11.67	791	-106.2	Clear	none
127	425	20.55	372	2.53	6.16	1159	763	-64.3	Clear	
30 × 1	700	40.55	3015	N. 43	0.10	1101	14.0	(04:5	Clear	nan
									-	
	-		-		-				-	+
					-	_	1		-	
-			-	-		-			- "	
-				-						
Co marity	lon paremeters from	S CLAIR LONG DELEGA	And 1000							V-
A SINDINESS	out peramotes irosh	C. NO. OB. SON			SAMPLING	DATA	721		-	
AMPLED BY	(PRINT) / AFFILIATE	1 1	SAA	PLERISTSIGNATURE		1 NA	-	SAMPL	ING INITIATED AT:	SAMPLING ENDED AT
Casi	m Haso	1)	MP FLOW RATE (ML	Party	17	UIL	e course as a	13	30	1335
ump or fur	ING DEPTH A WEI		125	(egminute)	PIELD PAHAME	IER MUNITORIN	G EQUIPMENT MC	DEL & SERIAL	1 5.	
/1	********* **			DIFILTERED (Y)	N FILTER	S/ZTµm	-		District Co.	
) N		sion Equipment Type					DUPLICATE	Ø N
ATERIAL COD	ES: AG = Ambe	Glass CG = Class		CONDITION CHE				/Alteraliza		
voe: Flor	sh Mount /(Stan	d Pioe		ion: Good / Nes			Good / Broke		Lock: Good	/ Broken / North
27 - 2	Rain Water Be			_	umb?: (Ŷ)		Riser: Good		_	/ Broken / North
Jelin Comme	of Ponding Are			norele Collar: (G		1-1	and the same of th	- Simayeu		
EMARKS			0	-						

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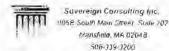
MONITORING WELL SAMPLING LOG Low Flow Sampling

IIII

Sovereign Consulting Inc a Open Source Way, Suco #107 Holyaka, MA.01040 413-540-0650

ROJECTIOCATION Ayen mA Acoot 000 5 km -10-10 DEPTH TO WATER DEPTHTO 11.40 (feet) PURGING DATA TUBING DIAMETER TUBING MATERIAL CODE PURGE PUMP PLANP EQUIPMENT MODEL & SERIAL BY Geopump (see below) PE SN 101 WELL VOLUME PURGE. I WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) IX WELL CAPACITY WELL GAPACHY (GABOOS PER FON): 075 = 002, 17 = 0.04, 125 = 0.06, 27 = 0.16, 37 = 0.37, 47 = 0.65, 57 = 1.02, 67 = 1.47, 127 = 5.88

WELL SCREEN INTERVAL INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN PUMP OR 1 GALLON = 3 785 LITERS TOTAL VOLUME PURGED FINAL PLIMP OR TUBING DEPTH IN WELL (feet) PURGING ENDED AT GALLONS: 4 60 DEPTH (feet): WELL (feet): 58-68 LITERS 63 1145 1222 WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP TIME INTERVAL FLOW RATE VOLUME PURGED DURING PUMP SETTINGS DEPTH TO WATER (feet) Water Level Slable (Yes or No) INTERVAL (mL) (min) 15 300 175 rpm Yes 11.41 1901 11.41 DISSOLVED FLOW DEPTH TO TURBIDITY TEMP SPECIFIC COLOR ODOR RATE WALER (NTU) OXYGEN (°C) CONDUCTIVITY trivi (describe) (describe) (mL/may) (mg/L) tuS/cod (leel) (1/ 190* (*/- 10mV)* (17. 10%)* (to 0 1) (100-500 mt/min) (4)- 02) 1-4 10%F 11/- 383 300 60.0 83.3 1203 11.41 1.33 613 6.58 13.36 Clear None 11.41 1206 300 0.46 13.21 615 73.8 6,57 Clear None 1209 300 11.41 0.38 13.29 615 70.0 6.57 clear None 300 11.41 laia 1.39 m 25 6.56 13.17 615 66.8 ciear None 1215 11.41 0.80 300 0.00 6.56 13.05 615 64.6 clear None 11.4 0.89 0.17 6.56 13.15 618 63.0 clear 1918 300 None 0.71 300 11.41 clear 0.16 6.55 13.13 63 3 1991 (017 HOOR 444 +224 PA stabilization parameters from EPA/540/S-95/504 April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFILIATION SAMPLER(S) SIGNATURE SAMPLING INITIATED AT AMPLING ENGED AT 1330 ien 1930 MAZPLE INJMP TO GOVER DOLD CAPACITE MONTORING EQUIPMENT MODELS SEEMED 300 631 75110710CO2 + 097100085 Turb 26850 FIELD FILTERED (V) Filtration Equipment Type HELD DECONTAMINATION (Y) N DUPLICATE 0 MATERIAL CODES AG - Ander Class CG = Clear Glass PP = Polypropylene: S = Shome: Y = Tulton: O = Other (Specify) WELL CONDITION CHECKLIST (cycle appropriate item(s), cross out if not applicable) Well Caps: Good / Broken / None Type: Flush Mount / Stand Pipe General Condition Good / Needs Repair Lock: Good / Broken / Gand idence of Rain Water Between Steel & PVC? Y / (N) Is Well Plumb?: Y / (N) PVC Riser (1) Damaged / None Concrete Collar: 600 / Cracked / Leaking / 600 evendence of Ponding Around Well? (Y) / N REMARKS



MONITORING WELL SAMPLING LOG Low Flow Sampling

IIII

Sovereign Consulting Inc. « Cpc a Square Way. Jame VID? Holyake MA 01040

PROJECT NAME ROJECTLOCATION WILLID 9/9/10 Accol on 2 Jeventust SHM-10-CLEA WELL DIAMETE en 25.47 1.5 89.90 (epmv) inches! TUBING MATERIAL CODE PE **PURGING DATA** TUBING DIAMETER TUMP EQUIPMENT MODEL & SERIAL WS artes) GALLONS WELL VOLUME PURGE: I WELL VOLUME: ITOTAL WELL DEPTH - STATIC DEPTH TO WATER! X WELL CAPACITY WELL CAPACITY (Gallons Pol Foot) 0.75 = 0.02, 1 = 0.04, 1.25 = 0.06, 2 = 0.16, 3 = 0.31, 5 = 0.05, 5 = 1.02, 6 = 1.01, 12 = 5.88

WELL SCREEN INTERVAL | INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN PURGING INITIATED AT WELL (leet)

WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL (leet) | WELL 1 GALLON = 3 MASSUERS TOTAL VOLUME PURGED DEPTH (lea) 80 - 90 PURGING ENDED AT GALLONS LITERS (43 85 9 42 DEPTH TO WATER WITH PUMP 35.0 WATER LEVEL STABLIZATION PUMP SETTINGS VOLUME PURGED DURING TIME INTERVAL FLOWRATE DEPTH TO WATER (feet) Water Level Stable (Yes or Na) INTERVAL IMLI (mUmin) (min) 0-10 475 35.9 359 YES 34 10-15 0-600 pm, 100% speed control THAE FLOW DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC ORP COLOR ODOR RATE WATER CONDUCTIVITY (NTU) OXYGEN ('C) ImVI. (describe) (describe) (rollmin) (feel) (mg/L) (615/cm) 1-7- 10%)* 14/ 741 147- 10mVY (100-500 mt /r (+/- 10%) t+4. 0.1V (-/- na) 10:03 475 5.99 5,54 36.9 135 11.12 43.0 cloudy none 264 5.37 cloud 10:08 475 35.9 100.7 4.15 10.93 269 68.5 neyre 10:13 475 81.4 2.80 35.9 10.63 154.9 cloudi 5.56 272 none 146 475 359 77.1 10:18 2.5a 5,59 10.80 283 2265 cloud none 2.58 cloude 10:23 475 35.9 70.1 5.62 10.65 3PB 244. none 35.9 2.39 475 1449 66 4 5.66 10.79 315 Cloude 10:00 none 475 P. 35 10.76 10:33 60.2 5,70 cloude 317 1389 none 2.61 10:36 475 35.9 48.7 2.60 5.82 10.84 341 -131.4 Cloudy none 35.9 475 44.9 2.04 5,71 10,71 clouds 10:39 344 116.6 146 none 10:42 475 35.9 41.7 5,91 10:71 350 9 ,00 126,3 Cloude none 10:46 475 44.7 10.66 -1220 35.9 3.49 5,90 355 cloud none 10:51 41.3 5,73 10.70 350 475 35.9 -97.6 clouds 3,42 none 10:56 475 35,9 5.73 10.68 cloude none 41004 1.20 360 -1202 -129.0 43.2 376 475 35.9 0.96 5.74 10.77 Cheste None 11:01 37.6 10.79 397 1529 35.9 0.860 11:00 475 5.77 claudy 46 nare 50,3 35.9 nare 1/2// 475 0.99 5.78 10.77 353 -144.4 cloude 11:16 475 5.98 10:70 cloude 35.9 0.84 303 1629 none 35.9 10:73 43.7 0.86 5.95 413 169.0 clouds none 16:11 475 EPA stabilization parameters from EPA/540/S-95/501 April 1990 SAMPLING DATA APLED BY (PRINT) / AFFILIATION SAMPLER(S) SIGNATURES SAMPLING INITIATED AT AMPLING ENDED AT PUMP DR TUBING DITTH IN WELL SAMPLE PUMP FLUW BATE (mL per minute) FIELD PARAMETER MUNITORING EQUIPMENT MODEL & SERIAL IIIS FIELD-FILTERED: Y FILTER SIZE JIM FIELD DECONTAMINATION Y N DUPLICATE Filtration Equipment Type MATERIAL CODES AG = Amber Gless CG = Clear Glass PE : Polyethylene: PP : Polyetopylene: \$ * Sicono T : Felium G : Other (Snerity) WELL CONDITION CHECKLIST (carde appropriate item(s), cross out if not applicable) Type: Flush Mount / Stand Pipe General Condition: Good / Needs Repair Well Caps: Good / Broken / None Good / Broken / None PVC Riser: Good / Damaged / None dence of Rain Water Between Steel & PVC? Y / N Is Well Plumb?: Y / N vendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS: Used Chuck while w/ Rump and Manual pumping P109 2



MONITORING WELL SAMPLING LOG

Holyake, MA U1040

Low Flow Sampling

Sovereign Consulting Inc. 4 Open Square Way Suite #307 413-540-0650

OUECT NUM	AC 001	.002	WELL DIAMET	POVI	DEVENS	a:	DEPTH TO	DATE 9/9	/10	5+M-10-00
100000000			(inches) /	.5	(leet) 35	.67	(feet)	39.94	(pgn:v)	
JAING DIAME	TER	TUBING MA (see below)	PE	PURGE PU	PURGING	DATA		Coen OL	ENT MODEL A SERVAL R	10423
ELL VOLUME	PURGE. 1 WELL	VOLUMB: ITOTA	I. WELL DEPTH - S'	TATIC DEPTH TO W	ATER) X WELL	APACITY		GALLONS!	UTE	HS.
) 075=002; 1	= 0.04; 1.25; = 0.08						ON = 3.785 LITERS	TOTAL VOLUME PURGE
ELL SCREEN EPTH (leet):		WELL (A	PUMP OR TUBING DE BES	PTH IN FINAL PUM WELL (leet)	Section 1			100	GENORO AT	GALLONS:
	80-90)	65		85	(7:42	1.1	42	LITERS: (03
WATER	LEVEL STABI	IZATION	DEPTH TO WATER (feet)	WITH PUMP	35.9					
TIME INTER (min)	VAL FLOW F		-	PUMP SETTING	38		DEPTH TO W.	ATER (feet) END	Water Level Stable (Yes or No)	VOLUME PURGED DUR INTERVAL (mL)
Print.	, inch						31731		1,555,105	
	-					-				
TIME	FLOW	OEPTH TO WATER	TURBIDITY (NTU)	DISSOLVED	рН	TEMP (°C)	SPECIFIC CONDUCTIVITY	(mV)	COLOR (describe)	ODDR (describe)
	(mL/min)	(leet)	7	(mg/L)			(µ5/cm)	F. 17. DE.		444
F20	475	35.9	49.2	60.63	5.76	10.81	344	-158.8	cloudy	none
1:31	475	35.4	54.9	1.09	6.04	10.70	360	-159.3	Clardy	1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
	475	35.9	43.5	0.58	5.75	10.73		-47.7	cioudy	none
1:36				0.39	5.94	10.65	383			none
1341	475	35.4	40.6	0.59	5,94	10.03	431	-157,3	cloudy	none
			9							
			-				-			-
					-					
								1		
								II E		
1										-
							1			
EPA slabiliza	lion parameters from	EPA/540/S-95/504	April 1996		SAMPLING	DATA				
SAMPLED BY	(PHINT) / AFFILIAT	ioni	SAI	APLARIS) SIGNATUR		1/1		SAMP	LING INITIATED AT	SAMPLING ENDED AT
cm	14			PUMA	n. 17	1111	-	11/	45	12 00
PUMP OR TUI feat)	RING DEPTH IN WE		UMPFLOWRATE UNIV	per musite)	FIELD PARIME	TER MOUNT ORW	IG EQUIPMENT MO	DEL & SERIAL	#S	
	45	0.7		D-FILTERED (Y)	N FILTER	SIZE gm		_	I. and the second	
	TAMINATION (abon-Equipment Type	_				QUPLICATE	(y) "
MATERIAL COD	IES AG - Amb	ul (Hass - DG = Cle)	The Committee of the	CONDITION CH			Other (Specify)	and sables		
Tues Cha	ab Marian 106a	The man					711		Leak Cook	Declare 1463
	sh Mount / Star		PVC? Y / (N)	lion: Good/ No		*	Riser: Good	/ Damaged	Lock: Good I / None	Broken (None
	of Ponding Arc		-	ncrete Collar:				- Comayeo	1 DAUE	
	5						-			

Sovereign Consulting Inc. 305B South Main Street, Suite 202 Mansfreid, MA 02048

ROJEC" NAME

508 339-3200

MONITORING WELL SAMPLING LOG

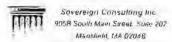
Sovereign Consulting Inc Open Square Play Suite #307 Holyoke MA 01040 113-510-0650

Low Flow Sampling

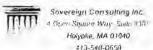
ROJECT LOCATION

SHON-10-7 9/9/10 Acoo1-003 WELL DIAMETER Devinos, ma SEPTH TOWATER (lee) 50.03 **PURGING DATA** OED 3354 TUBING DIAMETER (inches) Yyr (see below) PE Gregoring Bladdon GED 3.5 WELL VOLUME PURGE: 1 WELL VOLUME (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY WELL CAPACITY (Gallons Per Fool): 0.75 = 0.02, 1'=0.04, 1.25' = 0.06, 7' = 0.16, 3' = 0.07, 4' = 0.66, 5' = 1.02, 6' = 1.47, 12' = 5.69

WELL SCREEN INTERVAL. [INITIAL PUMP OR TUBING DEPTH IN FINAL PUMP OR TUBING DEP TOTAL VOLUME PURGED LIGALLON = 3 TAS LITERS GALLONS 3.5 PURGING ENDED AT 0953 40-50 1055 DEPTH TO WATER WITH PUMP WATER LEVEL STABLIZATION FLOW RATE TIME INTERVAL PUMP SETTINGS DEPTH TO WATER (feet) Water Level Stable INTERVAL (mt) START (Yes or No) (mL/min) D-10 R-20 TPS1 - 96 CPS1 -30 28.00 18.05 0-10 dlo 2,000 01 28.05 28.05 10-20 210 Yes 4,000 ml DEPTH TO TURBIDITY DISSOLVED TEMP SPECIFIC DRP COLOR ODOR (NTU) OKYGEN CONDUCTIVIT RATE WATER (desenbe) (describe) (mL/mln) (feet) (mg/L) (us/em) (+/ 10%) (-/- 0 1)° 10mvr NJ- 357" 2.30 1018 28.05 37.0 647 1.4 cloud mone 210 28.7 640 liff cloud 28.85 12.35 1085 1031 alia 1.20 10.51 NAND 28.05 22.0 640 102.9 Hilt cloud YEOL alo 1.13 12.34 NAGE liff clook al-B 12.27 alo 28.05 1.01 63B 103.9 None 210 6.53 12.37 637 1030 28.05 19.60 097 -103.9 None 28.05 23.4 13.32 636 104.4 1:11-11our 1034 6.76 NOR 210 -104-5 a8.05 19.4 12.39 635 103B alo 0.603 6.54 In H cloudy MORE loy. 9 With cloudy MORE 28:05 21.3 0.604 12.34 636 1041 9 10 -105.4 Clear 210 28.05 15.8 0.47 6.54 12.38 635 Non 2 1044 a8 05 705.4 clear 6.54 12.40 635 1047 alu 17.1 0.43 None 6.54 12.39 016 0.43 635 1050 28.05 15. 105.6 Clear None A stabilization parameters from EPA/640/5-95/504 April 1996 SAMPLING DATA Eci 14 SAMPLED BY (PRINT) / AFFILIATION SAMPLING INITIATED AT SAMPLING ENDED AT Evin Foloy 113 1100 THE OF THE PROPERTY OF STREET ISLD PARAMETER MONITORING EDUPMENT MODEL & SERIAL IS SAMPLE PUMP FLOW RATE leetl. 45 210 YS101810085 + 10 F10 CO2 Turb mElagis FIELD FILTBRED (V)
Filliabon Equipment Type: FIELD DECONTAMINATION (V) N DUPLICATE ms/ms ib MATERIAL CODES AG - William Class: CG - Dear Glass PE - Palyabylane PF - Palypropylane 5 : Sicone, T - Tallon: O - Other (Specify) WELL CONDITION CHECKLIST (circle appropriate items), pross our it not applicable) Type: Flush Mount / Sand Pre General Condition. Good / Needs Repair Well Caps: 8000 / Broken / None Lack: Good / Broken / Kole idence of Rain Water Between Steel & PVC? Y / (N) Is Well Plumb?: Y / W PVC Riser: (60) i Damaged / None vendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None REMARKS msimsD



MONITORING WELL SAMPLING LOG



MECT NUM	Accel a	יתיא5	(inches)	2"	DEPTH TO WA E	26.7	5 DEPTITEO	A CARLES CO.	FJ POREAG	ISHM-10-13
UBING DIAME			TERIAL COOS	PURGE PUN	PURGING I	DATA		Turvin contravi	ENT MODEL & SERIAL	No.
inches)	14"	(Seri below)	PE	PURGE PUN	Blan	icles		cent-	11960 7L	mp-10383
WELL VOLUM	E PURGE: 1 WELL	VOLUME (TOTA	WELL DEPTH - ST	ATIC DEPTH TO WA				IGALLONS	u	TERS
MELL CAPACI			= 0.04; 175° = 0.06.						M = 1785 LITERS	TOTAL VOLUME PURGED GALLONS
DEPTHICALL		WELL (fe	(د لالا ح	WELL (feet)			9:50	27 17 18 18	11:10	
	- 76 7 F	UZATION	DEPTH TO WATER		20	_	7. 30		11.10	LITERS: 18
TIME INTER		W - 11 11 11 1	(feel)	PUMP SETTING	2.75 s		DEPTH TO W	ATER (feel)	Water Lavel Stable	VOLUME PURGED DURI
(min)	22		- 1	-0	5 (00)		START	END C	(Yes or No)	2 L
	44	5 0.1	0 4.20	4101:3		1-50	20.75	du 75	105	- 4
				-,						
TIME	FLOW	DEPTH TO	TURBIOITY	DISSOLVED	рH	TEMP	SPECIFIC	ORP	COLOR	ODOR
9	RATE (inL/min)	WATER (leel)	(NTU)	OXYGEN (mg/L)		(*C)	CONDUCTIVITY (#5/cm)	(mV)	(describe)	(describe)
(3-5 minutes)	(100-500 mL/min)	(+/- 03)	(+2: 10%)*	(a) (0%)*	(1/- 01)-	(A/- 376)*	(h) 240,	Len. TomVY	-	
10:10	225	26.75	32.4	1.64	6.27	12.31	155	1.52.6	Clear	none
10:15	225	26.75	24.3	0,69	6.25	12.30	75 7	34.5	Clear	nang
1020	225	2675	23.60	5.34	6.24	12.40	704	-55 U	Cuci	none
10:25	225	2675	21.9	0.34	6.26	13.97	764	-55.1	Clear	ning
10:30	225	24.75	20.5	0.24	0.25	12.40	704	-550	Cum	nine
10 35	225	24.75	11.5	0.20	6.25	12,47	769	-553	ELICAT	none
10:40	200	26.75	17.4	0.20	10.20	12.47	774	-53.4	CLICAT	nume
10 45	Rec	24.75	14.3	0.13	6.24	12.44	7755	-52.3	ELAT	rine
10.50	200	24.75	17.9	0.14	6.25	12.45	184	-24.4	l'leis	por
10 55	300	86.75	14.9	0.14	6.28	12.44	735	-44.7	FLEEV	Rene
10.00	200	26.75	12.4	0.13	(0.27	12.47	7.57	-53. W	Clew	nene
11.05	200	20.75	12.60	0.14	6,28	12.49	780	-53-5	Cuir	nous
11:10	200		12.0	012	0.27	12.48	743	-52.5	fier	none
										per
	- 44	V. 60-14	1 2			·		7;	1.5	
"PA stabiliza	lion parameters from	EPA/540/5-95/504	April 1996					1		
SAMPLED BY	(PRINT)/AFFILIAT	ICN	SAM	PLER(S) SIGNATUR	SAMPLING	DATA		SAMPI	UNG INITIATED AT	SAMPLING ENDED AT
Caro	1.1	1.1		11-1	's m	14	1/	1	11.13	1202
PUMP OR TU	UG		JUG- PLOVY MATE LOST	(community)	VS1 60	10336-4	M SOUH WASHING		of vive 24	ii -
1208 AT 18	FFAMILIATION () n	Files	DER TERED (Y)	. Inline	0.45			DUPLICATE	O "
MATERIAL COL	AD = Amb	er Glass CG o Clea		CONDITION CH	ECKLIST (circle			applicable)		
dence o		elween Steel &	General Condition	on Cood / Ne Is Well F	eds Repair Numb? Y	Well Caps (Good Brok	en / None	(-	/ Broken / None
dence o	of Rain Water Bo e of Ponding Arc S.	elween Steel &	NGS AIR	-	Numb? 😯 N	PVC	Riser Good		(-	/ Broken / None

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508-339-3200

MONITORING WELL SAMPLING LOG

HIII

Sovereiga Consulting the 4 Open Sousce (Nov. Suite 1707 Holyake, MA 01040 413-540-0650

IRING DIAME	100	Troubet: was	TERIAL CODE	PURGE PUM	PURGING		Heen B		ENT MODEL & SERIAL A	
ches)	150	(see below)	PE	Riad	ler				3) Pumplial	
			LWELLDEPTH - 5							
ELL SCREEN		WHITING	20.04 1.25 = 0.06 20MP OR TUBING DE	PIH IN FINAL PUMP	OR TUBING DEP		GINITIATED AT:		N = 3.785 LITERS G ENDED AT:	GALLONS ~ 469
	LEVEL STAB		DEPTH TO WATER	WELL (feet)	79	10	13	113	15	UTENS
TIME INTER		RATE	(leet)	PUMP SETTING:	1.203	-1	DEPTH TO W		Water Level Stable	VOLUME PURGED DURIN
0-20r	mia NA		O, D1 10 ,T	X1.95 CS	x1.50		21.03	a1.03	Yes or No)	4500
9 901	ALL ALS	, S. W.	e, p- 10 11	121-12-121	3170		u1 - J	31.03	163	1000
							*-	13-52		
TIME	FLOW	DEPTHTO	TURBIDITY	DISSOLVED	pH	TEMP	SPECIFIC	ORP	COLOR	DOOR
	RATE (mUmin)	(feet)	(NTU)	(mg/L)	V	(°C)	COMBUCTIVITY (v5/cm)	[mV]	(describe)	(describe)
3-5 minutes)*	22.5	31.07	(4) 10%)	1,40	6.33	11.86	692	-31,9	of n	200
035		21.03	608	1.08		11.82	688	-31.9	Cloudes	none
040	205	21.03		0.44	6.28	11.78	689	-38,4	Couds	Mini
050	325	21.03	81	0.40	6.33	11.87	689	-37.5	cloudy	20.500
055	225	31.03	68.8	0.41	6.34	12.00	691	-35.5	cloudy	None
Hou	225	21.03	60.0	6.39	6 34	14.97	690	-39.4	Cloudy	Nene
1105	395	21.03	43.7	0.35	6.35	12.00	693	-39.3	clariu	None
110	292	21.03	37 9	0.36	6-34	12.00		-385	1. Haladin	None
115	235	91:03	38.2	0.35	W 35	12-01	691	-38.7	little clan	None
190	286	21.03	34.5	0,36	6.35	11.99	693	A	hittleckund	None
										-
		-			-	-			-	-
			-							
	8				3	-	000		4.5 -8	-
		-								
PA slabiliza	tion parameters from	EPA/540/S-95/504	April 1996	1300	1	-	1	L		1
LIGHTO DV	(PRINTI/AFFILIAT	uca)	Içii	MFLERIS) SIGNATUR	SAMPLING	DATA	17-50	Isaum	ING INITIATED AT	SAMPLING ENDED AT
EV	n Foley	Isa Co		Cem fal	29	TER MONT DE	ig pouifuent m	na	15	1303
ecty	72'	aas	melmin		451 (10 FO	7moi) T	ws (7N23	(041110)		
Service of	TAMINATION ()	N	f FIE	DFLTERED O	N FILTER	SIZE jim			DUPLICATE	1 ms/msD
ATERIAL COO	ES AG # Aint	wii Glana CG x Clea	and the second second	CONDITION CHI	ECKLIST torde		- Other (Specify) I(S), spores out it nex	approable)		
	sh Mount / Sta		General Condi	tion: Good/ Ne	I VANTE A	Well Caps:	Good / Brok			i ilinken i Node

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REMARKS:

MONITORING WELL SAMPLING LOG

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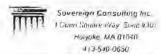
9058 Smith Main Street Suite 202 Mansheld, MA 02048 Low Flow Sampling 508-339-3200 \$13-540-0650 PROJECT NAME ROJECTICICATION 10-19-10 SHM-10-1 PID READ DEPTH TO WATER (feet) WEGT NUMBER WELL DIAMETER Ac out 21 40.83 mches) (text) (ppmv) PURGING DATA TUBING MATERIAL CODE (see below) TUBING DIAMETER UMP EQUIPMENT MODEL & SERVAL AS PURGE PUMP adde Pump (10383 Cont (2196) WELL VOLUME PURGE: 1 WELL VOLUME: (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) K WELL CAPACITY WELL CAPACITY (Gallons Per Font): 0.75 × 0.02. 1' × 0.04; 1.25' = 1105. 2' = 0.16: 3' = 0.37; 4' = 0.65; 5' = 1.02; 6' = 1.47; 12' = 5.88

WELL SCREEN WITERVAL INITIAL PUMP OF TUBING DEPTH IN FINAL PUMP OR TUBING DEPTH IN PURGING INITIATED AT I GALLON = 3 785 LITERS TOTAL VOLUME PURGED WELL SCREEN INTERVAL
DEPTH (Ideal): 52-62 GALLONS 3. 3. 5 9 6 PURGING ENDED AT WELL (tool) WELL (leet) 5 1900 WATER LEVEL STABLIZATION DEPTH TO WATER WITH PUMP PLIMP SETLINGS Water Level Stable VOLUME PURGED DURING TIME INTERVAL FLOW RATE DEPTH TO WATER (feel) D -PS1/IT-PSU START (Yes or No) INTERVAL (mL) (min) 0-10 4088 R-10 A-5 asile-50 40.80 res ~1500 400 TIME SPECIFIC FLOW DEPTH TO TURBIDITY DISSOLVED TEMP DRP COLOR DOOR RATE WATER INTU OXYGEN CONDUCTIVITY (InV) (describe) (describe) PCI (mL/min) (mg/L) (µ5/cm) (foet) (+/- Q,1)* 69: 390* (+/- 10mV)* (+/- 10%)* (3.5 minutes) (100-500 mL/m I++ DYY (*f. 10%) Tof- 1911 40.88 38.3 416 400 0.82 5.20 11.66 406 418 40.88 0.41 -4a 5 6,40 40.80 10.29 400 0.44 38 MIS -41.3 1425 11100 Thous 10.88 -43. 0,4 416 11.50 1430 400 nine 1435 Clean 400 46. 88 6.00 0.46 11.54 415 41.1 non Clar 4,97 39.1 40 80 11.57 414 1438 047 24 406 40.88 4.29 4,4 1441 400 0,46 6,28 11. 51 70 8 Cla ne Clean 623 40.86 4.28 -42.1 non 1444 4662 6.41 -64 PA stabilization parameters from EPA/540/S-95/504 April 1996 SAMPLING DATA SAMPLED BY (PRINT) / AFFAJATION SAMPLING INITIATED AT AMPLING ENDED AT En 1 Pia 1455 ELD PARAMETER KINNI CHIKKEETTIIPMENT MODEL & SERIAL IIS HUME OR THIRTIS DECTROR AS SAMPLE PLAND FLOW HAT (feet) YS(10FO7mol) Yound FIELD FILTERED FIELD DECONTAMINATION DUPLICATE (3) **Елизира Егрария** MATERIAL CODES CG - Clear Blass Pit = Polygrapylene; 5 - Silicone; 1 + Tallon, Q + Other (Specify) AG : Ambel Glass WELL CONDITION CHECKLIST (circle appropriate item(s), cross and if not applicable) Type Flush Mount / Stand Pipe General Condition: Good / Needs Repair Weil Caps: Good / Broken / None Good / Broken / None Is Well Plumb?: Y / N PVC Riser Good / Damaged / None tence of Rain Water Between Steel & PVC? Y / N evendence of Ponding Around Welli? Y / N Concrete Collar: Good / Cracked / Leaking / None



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MONITORING WELL SAMPLING LOG



PLOW RATE (mL/min)	TUDING MATE SEE BEIOW) MB (TOTAL 1: SE 0.02: 1'= WITTAL PU WELL (Ich	PE WELL DEPTH - ST 0.04, 125"= 0.06, MP OR TUBING DEP	PUNGE PUNGE PUNGE PUNGE PUNGE SETTINGS	TER) X WELL C TER) X WELL C THE TOTAL STEEL APACITY LOZ: 6°= LA) THIN PURGIN	: 1₹°=58#	76-80 PUMP EQUIPME GALLONS 1 GALLO PURGIN	PIC MEADU (EMRN) ENT MODEL & SEMAL &S (LITE N = 3.78SLITERS GENDED AT		
PLOW RATE (mL/min)	See below) MB (TOTAL 1 S = 0.00: 1' = DUITIAL PU WELL (See) TOON D TOON D D-10	PE WELL DEPTH - ST. 0.04. 125 = 0.06. MP OR TUBING DEP) 5 & EPTH TO WATER Y DEE!)	ALIC DEPTH TO WAR Z = 0.16. 3' = 0.30 THIN FINAL PUMP WELL (len) S WITH PUMP PUMP SETTINGS	PURGING I	DATA SAPACITY 1.02: 6° 1.49 THIN PURGIN	: 12° = 588 GINITIA KED AT	GALLONS 1 GALLO PURGIN	N = 3 705 LITERS GENDED AT	TOTAL VOLUME PURG
PLOW RATE (mL/min)	See below) MB (TOTAL 1 S = 0.00: 1' = DUITIAL PU WELL (See) TOON D TOON D D-10	PE WELL DEPTH - ST. 0.04. 125 = 0.06. MP OR TUBING DEP) 5 & EPTH TO WATER Y DEE!)	ALIC DEPTH TO WAR Z = 0.16. 3' = 0.30 THIN FINAL PUMP WELL (len) S WITH PUMP PUMP SETTINGS	TER) X WELL C TER) X WELL C THE TOTAL STEEL 102: 6° = 1.40 H W PLIRGIN	: 12° = 588 GINITIA KED AT	GALLONS 1 GALLO PURGIN	N = 3 705 LITERS GENDED AT	TOTAL VOLUME PURG	
FLOW RATE (mL/min)	D-10,	OM, 125'=006 MP OR TUBING OFF) 5 A EPTH TO WATER V	T=0.16, T=0.37 TH IN IFINAL PUMP WELL (feet) MITH PUMP PUMP SETTINGS	3. 4°=0.66; 5°=	102: 6° = 1.40 H W PLIRGIN	GINITIATEDAT	1 GALLO PURGIN	N = 3 785 LITERS G ENDED AT	TOTAL VOLUME PURG
FLOW RATE (mL/min)	D-10	MP OR TURING DEP) 5) EPTH TO WATER V	WELL (lest) S WITH PUMP PUMP SETTINGS	OR TURNING DEPT	PURGIN	GINITIATEDAT	PURGIN	G ENDED AT	GALLONS 4.5
FLOW PLOW DE RATE (mL/min)	D-10,	52 EPTH TO WATER V	MTH PUMP PUMP SETTINGS			940	10	50	LITERS 9.3
FLOW PLOW DE RATE (mL/min)	D-10,	EPTH TO WATER V	MTH PUMP PUMP SETTINGS			710	110	J-	
(mUmin) 200 200 FLOW DE RATE (mUmin)	D-10,				-				
FLOW DE RATE (mUmin)		, R·do, T R·do, T	- 100, C-			DEPTH TO W.		Water Level Stable	VOLUME PURGED DU
FLOW DE RATE (mUmin)		R-20, I	-100,0-		25.03 462000	START	25:05	THE NO	INTERVAL (GL)
FLDW DE RATE (mL/min)		.K-00; 1		30	and contra	25.25	92.92	Yes	2000
RATE V (mUmin)	PIHTO I		100,00	3	_	anian.	W2.02	100	4,000
RATE V (mUmin)	PTHTO						mire -		
RATE V (mUmin)	PTHTO								
(mL/min)		TURSIDITY	DISSOLVED	ρН	TEMP	SPECIFIC	CRP	COLOR	ODOR
0-500 mL/min)* [1	(feet)	(UTM)	(mg/L)		(*C)	CONDUCTIVITY [J#S/em]	(inV)	(describe)	(describe)
	0.007	(+/- 10%)*	(4) 10%)*	140- 011-	11/ 393*	(+\/- 3\x).	(+7: 10mvy	ci I	Nu
		87.9	0.89	6.17	12.19	516	-19.5	Cloudy	None
		867	1.28	6.18	12 19	511	-19.0	Cloudy	None
-		(2)	0.85	6-19		511	-33.5	Cloudy	None
			0.58	(6.18)	12.04	511	-a3.3	cloudy	None
									None
									Pone
		-							None
							-136		None
on as	: 15	60:3			19.09	511	-14	Clary	None
			6,30			SIU	-1111	Clavily	None
300 a	5,25	59.5	0.36	5,94	11.95	510	-10,9	coursey	None
								/ 1	
					1				
	***			V 100 V			1		
remoters from EPA/S	40XS-95/504 A	přil 1996	A 100 X	CAMBLING	DATA				To ,
TITAFFILIATION:		SAMP	TER(S) SIGNATURE		DAIA		SAMPL	NG INTINTED AT	SAMPLING ENDED AT
maken	thelle	Soules	Mu	lus	-				11.50
DEETH IN WELL	Sample Plan		in ormate)						
الم الم	-		FRIFRED. /Y			57MG1	Lam		NC 236-1
NATION (V) N		The second secon		19/62				DUPLICATE	* (N)
AG & Amtier Glyss	CG + Clear G						- market		
num ican					AV TABLE	~		Lasti Cal	Oreton Villa
				~	The state of the s	00			Broken / None
			-				- Lamaged	The fa	
			nected						
200	BOO 35 DO 36 DO 36 DO 36 DO 36 DO 36 DO 36 DO 36 DO 36 DO 36 DO 37 DO 36 DO 36 DO 37	BO 35-35 DO	SAMPLE PLAN POLON PALE POLY PALE POLY PALE POLY PROPERTY OF THE POLY PALE PALE PALE PALE PALE PALE PALE PALE	THATFILLATION: SAMPLER(S) SIGNATURE PLANT FOR PLANT PLANT PATE (ALL PROTECTION PER Propagal AG & America Glass CG + Clean Class Signature Part Propagal Well CONDITION CHE Water Between Study & PVC? Y / (N) Is Well Propagating Around Welli? (V) / N Concrete Collar: (G	SAMPLING SAMPLER SAMPLER SAMPLING SAMPLING SAMPLING SAMPLER	BO 35.35 O.5 G.48 G.14 11.81 DO 35.35 GOLO G.49 G.13 11.79 DO 35.35 GOLO G.45 G.08 11.88 DO 35.35 GOLO G.30 G.49 G.03 11.98 DO 35.35 GO.3 G.38 5.98 13.00 DO 35.35 GO.3 G.38 5.98 13.00 DO 35.35 GO.3 G.38 5.99 13.00 DO 35.35 S.1 G.30 S.95 13.00 DO 35.35 S.1 G.30 S.94 11.95 SAMPLING DATA SAMPLER(S) SIGNATURES SAMPLER MORNITORIA SAMPLER(S) SIGNATURES SAMPLER(S) SIGNATURES SAMPLING DATA SAMPLER(S) SIGNATURES SAMPLER MORNITORIA SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SAMPLER SAMPLER MORNITORIA SA	SAMPLING DATA SAMPLING DAT	AS AMPLING DATA SAMPLER SUCCESSION SAMPLING DATA SAMPLER SUCCESSION SAMPLER SUCCE	SAMPLING DATA SAMPLEND DATA SAMPLE

Sovereign Consulting Inc. 9058 South Main Steet, Suite 202 Mondield, MA 02048 508-339-3200

MONITORING WELL SAMPLING LOG

Sovereign Consulting Inc. 4 Gpsq Square View Smith #107 Holyake, MA 01040 410-540-0650

PROJECT NAME			PAQUECT LUI	PROJECT LUCATION), a	WELL ID	
				WELL DIAMETER DEPTH TO WATER DEPTH TO WATER (1991)				(C8)	PID READ	13+1m-10-16	
	CO01-		prices; 5		PURGING D		lowi	0.7.	(1000-4)		
TUBING MATERIAL COD			PE	CODE PURGE PUMP TYPE				Cat - 2196 Pemp 1017			
ELL VOLUM		L VOLUME= (TOT/	AL WELL DEPTH - ST			CAPACITY		GALLONS	lui lui	IERS .	
		n) 0.75 = 0.02	1"=0.04. 1.75" = 0.06,	L = 0 10' 3' = 0 3	7, 4 = 0.65; 5 =	1 02, 6' = 1.41	12" = 5 08		N = 3785LITERS	TOTAL VOLUME PURGED	
FOTH Hamil		(On tolling the					FURGING ENDED AT:		GALLONS:		
WATER	77-87 RLEVEL STAB	UZATION	DEPIH TO WATER	WITH PLIMP	8a '		340		133	UTERS 10,5	
TIME INTER	The second		(feat)	PUMP SETTINGS	e e		DEPTH TO W	VATER (least)	Water Level Stable	[VOLUME PURGED DURI	
(min)	(mL/n	nin)		1750700000			START	END	(Yes or No)	INTERVAL (mt.)	
0-10	320	D~	10,2-20,7	-80,C-	(eQ		8-aa	8.32	res	3,500 ml	
TIME	FLOW RATE (mUnin)	DEPTH TO WATER (feet)	TURBIDITY (NTU)	DISSOLVED QXYGEN (mg/L)	PH	TEMP (°C)	SPECIFIC CONDUCTIVITY (us/cm)	(WV)	COLOR (describe)	ODOR (describe)	
(3-5 minutes)*	(100-500 mL/min)*	(4/- 03)	1.7.(1	(-/- 10%)	(r. a))*	1-7- 191-	(1/ 38)	(v- ramb)	-1 A	7	
350	3.50	8.32	134	1.01	6.69	11.05	806	-104.0	cloudy	Nore.	
355	a50	8.99	98	0.75	6.66	10.78	804		cloudy	None	
1400	350	8.99	93.1	10.1	6.75	10.78		-115.9		None	
1405	920	8.99	64.5	0.80	6.90		1 45	-121.5	clouly	None	
410	350	8.99	60-6	0.47	6.79	10.76		1948	Cloudy!	None	
1490	920	8.99	39.2	0.41	6.78	1071	798	-1279	clashy	None	
1425	920	8 99	34.0	035	6.81	1069	790	-139.8	Cloudy	None	
1430	250	8.33	340	0.33	6.78		1	-1297	Cloudy	Nene	
1435	250	8.99	346	0.34	16.77	10.63		-1292	clarde	None	
		1						134,13	7		
			-10	100				- 3			
14-6	200	*	× 1		13-0		1500	R			
EPA sisbitzo	otion parameters from	n EPA/540/5-95/504	4 April 1996		C C C C C C C C C C C C C C C C C C C	Till own		•			
PLED BY	(PRINT) / AFFILIAT	ION	SAN	MPLERIS) SIGNATURE	1/1	DATA	SAMPLING INITIATED AT			SAMPLING ENDED AT	
leaty.	Sy CS		ASO TEST	(CO.FICTERED (F)	MSI SS	_	THO I		Dulyer WI		
TELD DECOM	NIAMINATION: (2)	N Glass GG = Clay	Fillia an Glass. Pt : Morrelly	ration Equipment Type nyene PP * Polypioph	Inline	C.Y.F.	a Clinur (Specify)		DUPLICATE	· •	
dence o	of Rain Water Bo	etween Steel &	General Condit	CONDITION CHE Is Well Pl oncrete Collar.	eds Repair Numb? ()	Well Caps	Good/ Brok Riser: Good	ken / None	-	Proken / None:	
REMARKS											



Savereign Consulting Inc.
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MONITORING WELL SAMPLING LOG



				oL_	PURGING !	ATA	3. (tom: .5				
BING DIAME	74	(see below)		ELL DEPTH - STATIS DEPTH TO WATER) X WELL CAPACITY				CONT = 1053 Pump = 19383			
	TY (Galloris Pel Fee			Z = 0.16 3'= 0.3					ON = 3.785 LITERS	TOTAL VOLUME PURG	
VELL SCREEN INTERVAL (INTIN			(out)			9:40	1000	S ENDED AT	LITERS 20		
WATER	LEVEL STAB		DEPTH TO WATER	WITH PUMP:							
TIME INTERVAL FLOW RATE (min) (mL/min)		SATE	PUMP SETTINGS					DEPTH TO WATER (lent) Water Level Stable START END (Yes or Not			
10 40			5 B-10	0 TRS1-80 CRS1-6			34.73	34.73	yes	44	
TIME	FLOW	DEPTH TO	TURBIDITY	DISSOLVED	рн	TEMP	SPECIFIC	ORP	COLOR	0000	
-S minutes/*	RATE (mUmin) (100 500 mUmin)*	(ac 0.5)	(NTU)	OXYGEN (mg/L)	(4/- Q 1)*	(.C.)	CONDUCTIVITY (1/2/cm)	(mV)	(describe)	(describe)	
50	400	34.73	21.4	119	5.93	11.110	436	11.9	Clear	none	
55	400	34.7.3	15.0	0.71	5.73	11.02	434	1.8	Clear	none	
00	400	34.73	9.38	0.95	5.416	10.95		22.9	Clear	nune	
0:05	400	34.73	7.23	0.95	5.59	11.00	432	9.5	Clear	none	
10	400	34.73	5.33	0.79	5.85	10.94		-5. %	Clear	none	
10:10		34.73	3.53	0.48	5.92	110.91	433	-10.56	Clear	nume	
0.80	400	34.73	3.52	0.33	5.90	1085	433	-10.6	Clear	none	
25	400	34.73	247	0.35	5.92	10.90	433	-13-1	Clear	none	
:30	400	34.73	1.00	0.32	5.43	10.92	432	-14.5	Clear	none.	
								E2319		187	
	0		1000						7.00	-	
A slabilizat	ion parameters from	EPA/540/S-95/504	April 1996	1	-			L		1	
			leave	bi essesi esessa visibe	SAMPLING	DATA		Tourse	UNG INITIATED AT	Maria de la companya	
Ca	TOWN -	tardt	MATERIA DIN RATE (INL	Pauly	n	Hau	Section ME EST MIC	- 1	0:35	ISAMPLING ENDED AT	
- 10 i	52	LE JAMES CE A	400	/	Lamette 20,				10FO7mo	d	
O DECON	TAMINATION C) N		O FILTERED (V)	n filters	SIZE: JUTI	5		QUPLICATE	Ø N	
EFOAL COO	ES AG - Arno	er Glost CO - Cita		CONDITION CHE		T = Tation O =	The state of the s	moderable l			
dence of		stween Steel &	General Condition	on Good / Nee		Well Caps:	-	in / None	Lock: Cook	Broken / None	
MARKS	of Ponding Are	ound Welli? (Y) / N Co	ncrete Collar: (G	ood) / Cracke	ed / Leakin	g / None				