Shaw® EMCON/OWT, Inc.

SUPPLEMENTAL HYDROGEOLOGIC INVESTIGATION WORKPLAN

TAYLOR LANE COMPOST SITE

MAMARONECK, NEW YORK

Prepared for

Village of Mamaroneck

July 2005

Prepared by

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Project 791158

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1 Site Map

1 INTRODUCTION

The Taylor's Lane Compost Site is located in the Village of Mamaroneck, New York. The site was a former municipal disposal site from the 1950s to early 1970s. After that, the southern portion of the site was used to compost leaves and to dispose of tree trunks and wood chips. The northeastern corner of the site has been used as a stockyard for a local plant nursery. A Remedial Investigation/Feasibility Study was performed for the site (Malcolm Pirnie, 1992). The Record of Decision (ROD) for the site ordered the primary remedy of a final cover. The closure of the Taylor's Lane Compost Site was completed in the Spring of 1997 with the completion of the final cover construction. Activities at the site are governed by the post-closure operations and maintenance procedures in the Post-Closure Operation and Maintenance Plan (O&M Plan). These activities include the quarterly sampling and analysis of three shallow/deep monitoring well couplets downgradient of the facility in Taylor Lane (Drawing 1).

Earlier this year the Weinstein residence adjacent to the site notified the Village that groundwater seeping into the basement contained what appeared to be iron staining. The concern was that the staining suggested that landfill waste water from the site was discharging into the basement. The Markowitz residence also reported increased water seepage and a problem with the discharge pipe connection from the sump pump. Iron stained groundwater was also discharging at the edge of Taylor Lane, and from the groundwater monitoring wells located in Taylor Lane.

Last year, an investigation was performed using the existing monitoring configuration (EMCON/OWT, 2004). The purpose of this investigation was to collect groundwater elevation and water quality data from the site and surrounding area to determine if the site is the source of the staining observed in the water discharging into the basements of the Weinstein and Marowitz residences. The NYSDEC also conducted a study to determine the source of the staining (NYSDEC, 2004). A result of the investigations, was a request from the NYSDEC for additional remedial steps to be taken to eliminate any potential off-site discharge of landfill impacted groundwater from the facility. To address the NYSDEC request, an understanding of the current site hydraulics must be obtained. Given that most of the monitoring wells were abandoned during capping, it will be necessary to install new monitoring wells to provide current water level data. This new data will then be analyzed and used in the evaluation and development of any appropriate additional remedial action(s). Additional data gathering as described in the work plan below will also be conducted to assist with evaluating the appropriate additional remedial action(s) that may be required. To address the problem with the monitoring wells discharging into Taylor Lane, the abandonment of the existing downgradient wells, and installation of replacements between the landfill and Taylor Lane will also be performed as part of this investigation.

If bedrock is encountered, samples will be taken using a NX or HX core barrel. Bedrock samples will be described in the field, the description recorded in a field notebook, and put in a labeled core boxes. Information obtained will include rock type, degree of fracturing, degree of weathering, evidence of water movement in fractures, and RQD.

The monitoring wells will consist of 2-inch diameter, flush joint, Schedule 40, PVC riser and 10-slot wire wrap screen. Screen lengths will be 10 feet for the shallow wells and 5 feet for the deep wells. A maximum of 6 inches of sand will be placed at the bottom of the borehole, and the PVC screen/riser will be placed in the hole atop the sand. A sand pack will be placed around the screen and to a maximum of 2 feet above the screen. A minimum 6-inch thick filter pack will then be placed on top of the sand pack. Next, a minimum 3-foot bentonite seal will be placed above the filter pack. This will be followed by a cement/bentonite grout to the surface. To protect each installation from vandalism, a steel protective casing with locking cap will be installed around each monitoring well. A surface seal will be placed around the protective casing to divert surface water runoff. The well installation detail is shown in Figure 2-1. Upon completion of the well installation, the location of each well and elevation of ground surface and top of casings will be surveyed by the Village survey crew using the benchmarks established for the site, or newly established benchmarks if the old data is not available.

After waiting a minimum of 24 hours after well installation, each monitoring well will be developed by either bailing or using a submersible pump. A minimum of 3 well volumes will be taken out of each well during development.

2.3 Staff Gauge Installations

Staff gauges will be installed on surface water bodies on-site. The purpose of the staff gauges will be to provide surface water levels on-site so that the inter-relationship between the groundwater and surface water regimes can be determined. After the installation of the staff gauges, the location of each staff gauge, and elevation of ground surface and top of staff gauge will be surveyed using the benchmarks established for the site.

2.4 Water Level Rounds

After water levels in the new monitoring wells have stabilized following development, two complete rounds of water levels will be obtained from all the monitoring wells and staff gauges on the site. This data will be used to determine the groundwater and surface water levels and flow patterns on the site. The determination of the on-site water levels and flow patterns is necessary for evaluation of various remedial action scenerios that will be considered.

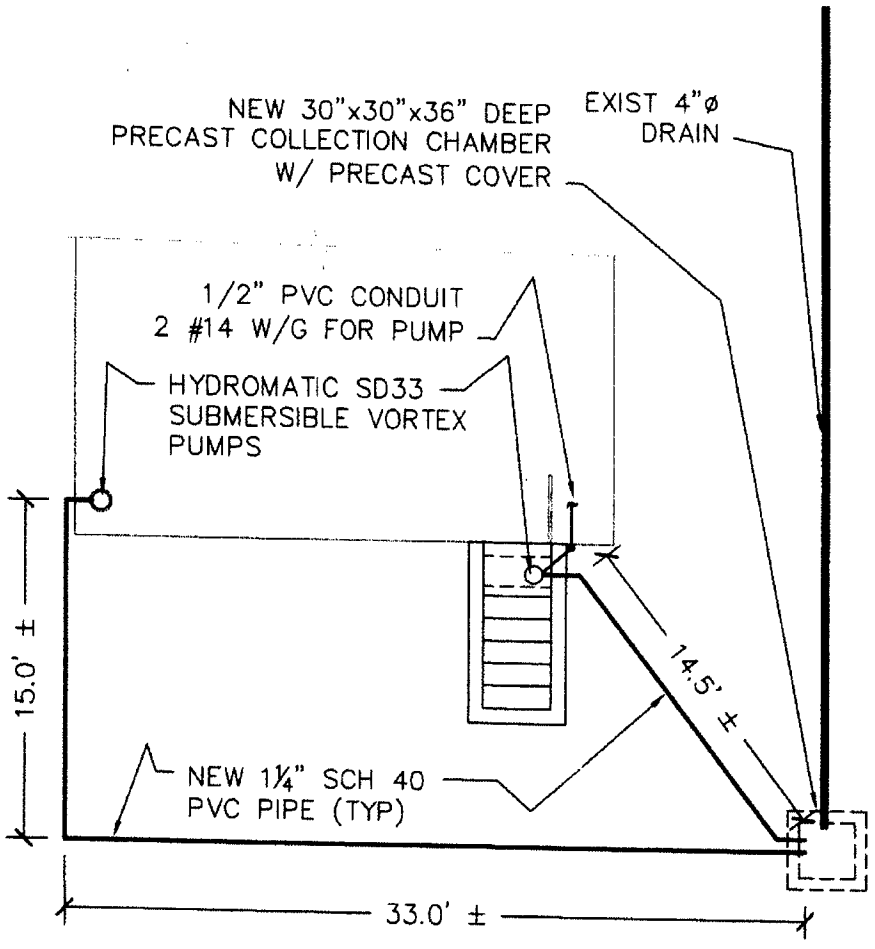
2.5 Landfill Impacted Groundwater Quality Evaluation

Several of the possible remedial action scenerios that could be implemented on site would involve the collection of waste water. Once this water is collected it must be disposed of properly. A potential disposal source for the waste water is the County sewer system that runs

along Taylor Lane. For the sewer system to accept the waste water, it must not exceed average daily concentrations for specific list of parameters (Appendix A). To obtain the average daily concentrations, samples must be taken every 4 hours for a 24 hour period. As part of this investigation, a sample of the waste water will be collected every 4 hours for a 24 hour period and analyzed for the parameters listed in Appendix A. The average of the results obtained will be compared with the limits provided in Appendix A to determine if the waste water is acceptable for disposal at the facility. If certain parameters exceed the limits, the data may be used to determine what type of on-site treatment could be used to lower those concentrations so that the water would then be acceptable for disposal in the sewer system. It was noted in a discussion with Robert Cea of the Westchester County Department of Environmental Facilities, that if the waste water is below the local limitation concentrations, it does not guarantee that it will be accepted for disposal in the sewer system.

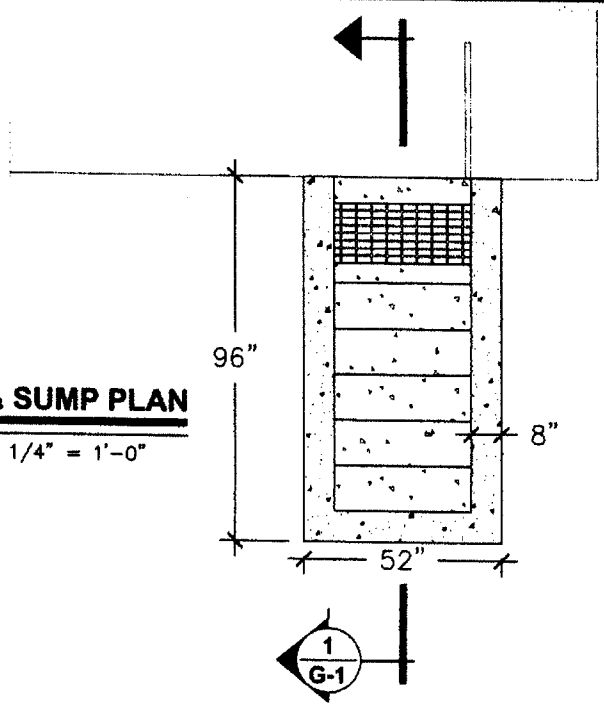
2.6 Basement Pump Upgrade

In addition to activities related to the investigation discussed above, a new basement pump will be installed in the Weinstein residence by the Town engineer. The new pump will have better capacity to pump and remove water from the basement than the existing pump.



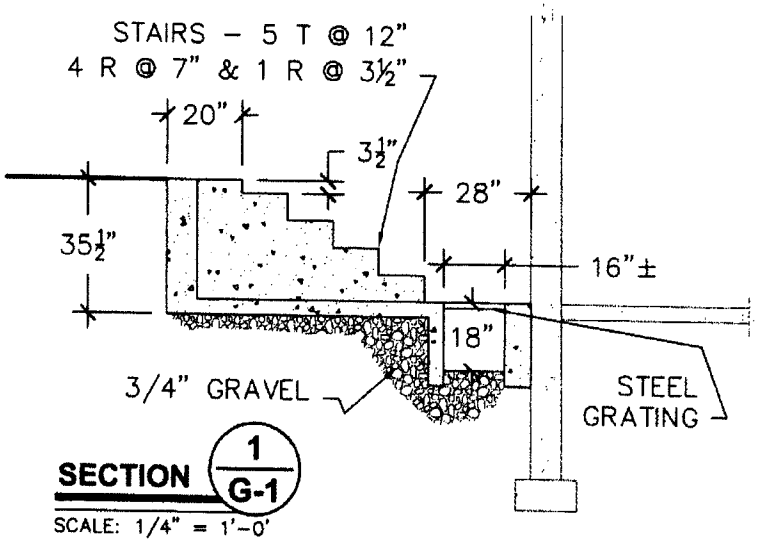
SITE & PIPING PLAN

SCALE: 1/8" = 1'-0"



STAIR & SUMP PLAN

SCALE: 1/4" = 1'-0"



SECTION 1/G-1

SCALE: 1/4" = 1'-0"

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Graphic Scale: AS INDICATED	KW Furey Engineering, P.C. engineering & construction management		VILLAGE OF MAMARONECK TAYLORS LANE SITE WEINSTEIN DRAINAGE IMPROVEMENTS **INTERIM SOLUTION** GENERAL	File Number 012.03.09 Date 7/05 KW Furey Engineering, P.C. One Virginia Street New City, NY 10956 Tel: (845) 708-0232 Fax: (845) 708-0233

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3 SUPPLEMENTAL HYDROGEOLOGIC INVESTIGATION REPORT

The results of the investigations discussed above will be assembled into a Supplemental Hydrogeologic Investigation Report. The report will summarize the work performed under each task describing both the procedures followed, and the observations made during the site investigation. Logs will be included for the new monitoring wells. All analytical data will be presented and included in the report.

The site map for this workplan (Drawing 1) will be used as the base map for this report. Included on the site map will be all existing and new monitoring wells, staff gauge locations, and other pertinent features identified during the investigation. Maps and cross sections will be prepared showing site geology/hydrogeology and groundwater flow directions. Plan view maps will be constructed to show shallow and deep groundwater flow directions. Piezometric profiles will be made from the cross sections showing the vertical directions of groundwater flow.

The report will also include a section where various remedial actions will be investigated with evaluation of potential alternative remedial actions in terms of the findings of this investigation. The conclusions section of the report will provide recommendations for future action.

4 SCHEDULE

The following schedule is presented for the performance of the tasks associated with the Supplemental Hydrogeologic Investigation at the Taylor Lane Compost Site:

July, 2005 - Submittal of Supplemental Hydrogeologic Investigation Workplan to NYSDEC

July, 2005 – Installation of new pump in Weinstein residence basement

July, 2005 - Receipt of NYSDEC approval of Supplemental Hydrogeologic Investigation Workplan

August, 2005 to September, 2005 - Performance of Supplemental Hydrogeologic Investigation and preparation of Supplemental Hydrogeologic Investigation Report.

October, 2005 - Supplemental Hydrogeologic Investigation Complete and submittal of Supplemental Hydrogeologic Investigation Report to Village of Mamaroneck.

October, 2005 - Supplemental Hydrogeologic Investigation Complete and submittal of Supplemental Hydrogeologic Investigation Report to NYSDEC.

REFERENCES

EMCON/OWT Inc., 2005, Hydrogeologic Evaluation, Taylor's Lane Compost Site, Village of Mamaroneck, New York.

Malcolm Pirnie, 1992, Mamaroneck Taylor Lane Leaf Compost Site Remedial Investigation, June 1992.

New York State Department of Environmental Conservation, 2004, Leachate Investigation at Mamaroneck Taylor Lane Leaf Compost Site, Site Number 360021.

FIGURES

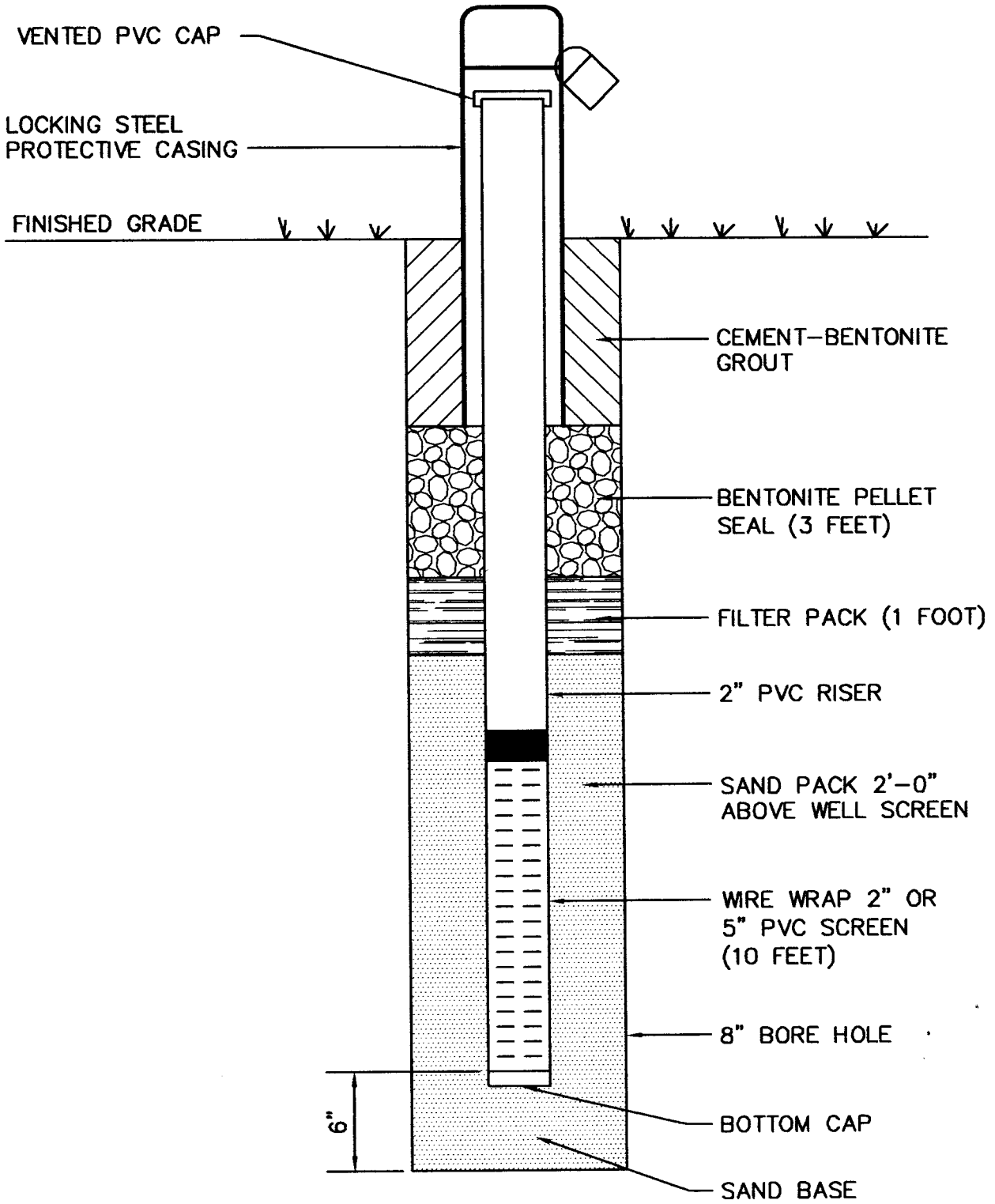

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FIGURE 2-1
VILLAGE OF MAMARONECK
TAYLOR LANE COMPOST SITE

MONITORING WELL INSTALLATION DETAIL

File: N:\Cad\Projects\Village of Mamaroneck - Taylor Lane Composite Site\Project Drawings\HAVMSF-2-1 (Monitoring Well Installation Detail).DWG Layout: Model User: dave.tice May 12, 2005 - 9:18am

1" 1/2" 0" 1"

APPENDIX A

LOCAL LIMITATIONS FOR SEWER SYSTEM

LOCAL LIMITATIONS

REGULATED POLLUTANT	AVERAGE DAILY CONCENTRATION (mg/L)
Arsenic	0.2
Barium	2.0
Cadmium	0.7
Chromium (Total)	3.0
Chromium (Hex)	2.0
Copper	2.8
Cyanide (Total)	0.8
Lead	0.4
Mercury	0.2
Nickel	2.8
Oil & Grease	100.0
Phenols	4.0
Selenium	0.2
Silver	0.8
Total Toxic Organics	2.1
Zinc	1.8