Shaw Environmental, Inc.

92 North Avenue
New Rochelle, NY 10801
Tel: 914-633-9324

May 12, 2009

Mr. Richard Slingerland
Village Manager
Village of Mamaroneck
Village Hall
123 Mamaroneck Avenue
Mamaroneck, New York 10543

RE: Phase I Pump Test Results
Taylor's Lane Compost Site
Village of Mamaroneck, New York

Dear Mr. Slingerland:

Shaw Environmental and Infrastructure Engineering of N.Y., P.C. (Shaw) is submitting this Phase I Pump Test Report (Report) to the Village of Mamaroneck (Village) for the collection and analysis of hydrogeologic data in support of the leachate mitigation project at the Taylor's Lane Compost Site (Site). The Site location is shown on **Figure 1**.

Currently, leachate seeps have been visually observed on the properties adjacent to the Taylor's Lane Compost Site. It is believed that a high groundwater table that resides within the refuse is contributing to the leachate outbreaks. To mitigate the leachate seeps, aquifer pumping tests were conducted in November 2008 to determine the groundwater regime and flow characteristics. Observations and groundwater elevation measurements were made over a period of a week at two new wells installed adjacent to the Markowitz residence (MW-4S and MW-4D, see **Figure 2**). Based on discussions with the New York State Department of Environmental Conservation (NYSDEC) and the Village, a second pump test was recommended to collect additional data for a future gravity drain system to collect and remove leachate from the compost facility. This letter report summarizes the findings and recommendations associated with Phase I of this supplemental pump test study.

Monitoring Well MW-4M Installation

In preparation for conducting an additional pump test at the Taylor's Lane Compost Site, monitoring well MW-4M was installed in the vicinity of monitoring wells MW-4S and MW-4D, but approximately 50 feet west and within the landfill refuse (**Figure 2**). On April 27, 2009, Aquifer Drilling and Testing, Inc (ADT) of New Hyde Park, New York utilized a track-mounted hollow stem auger rig to install a 6-inch diameter polyvinyl chloride (PVC) well under the supervision of a Shaw geologist.

The track-mounted drill rig was used to advance 8-inch inside diameter hollow stem augers down to the bottom of the fill material, approximately 21 ft bgs. Split spoon samples were collected continuously to log the subsurface material. A photoionization detector (PID) was used to screen the subsurface materials and to monitor the borehole while it is advanced to 20 ft bgs. The Shaw geologist logged the subsurface materials and recorded the PID readings. The boring log for MW-4M is presented in Appendix A. Once the borehole reached 21 ft bgs, the monitoring well was installed at 20 ft bgs within the 8-inch hollow stem augers. The well was constructed with 15 ft of 0.02-inch slot sized screen. Sand backfill was placed around the well screen to approximately two feet above the top of the well screen. A one-foot thick layer of bentonite chips was placed above the top of the sand backfill. A protective steel protective casing was set in concrete on top of the boot installed around the 6-inch PVC casing.

Boot Installation

Prior to advancing the borehole with the hollow stem augers, ADT hand dug through the cover soils to the top of the liner. A two to three inch cut was made through the 40 mil polyethylene flexible membrane liner to confirm that liner was not confining the groundwater (i.e., no groundwater began to seep up through the cut in the liner). Upon completion of the well installation, ADT added sufficient bentonite seal so that it extended slightly above the liner to prevent any gases escaping up through the liner material until the boot was installed.

On April 30, 2009, Atlantic Lining Co., Inc of Lawrenceville, New Jersey installed a liner boot around the well. After installing the boot, the integrity of the seal was confirmed with a vacuum box test (ASTM D-4437) of the seal between the skirt and the liner, and a mechanical point stressing text (ASTM D-4437) of the seal between the skirt and the well casing. The boot seal passed both tests.

Phase I Pumping Tests

The Phase I pump tests were conducted at the previous test location of groundwater monitoring well MW-14M. On May 4, 2009, Zion Environmental, LLC (Zion) set up equipment to pump MW-14M (2-inch diameter PVC well) using a 1-inch suction line. Starting on May 4, 2009, Zion conducted 8-hour pump test for three consecutive days (May 4th through May 6th). During the three 8 hour pump tests, groundwater elevation measurements were collected three times throughout the day, to the nearest 0.10 foot. Measurements were collected once before the pumping system started up, once at four hours into the test, and once just before the pumping system was shut down. Groundwater elevation measurements were collected at MW-14S, MW-14D, MW-4S, MW-4D, and MW-4M (**Figure 2**). Attempts were made to measure the depth to water in gas vents GV-4, GV-6, and GV-7, but all three vents were dry. On May 7, 2009, a 24-hour continuous pumping test was initiated. During the 24 hour continuous pumping test, water level measurements were collected every four hours. In addition to measuring groundwater elevations in the monitoring wells, the length of time between operating cycles of the external sump pump at the Weinstein residence were monitored and recorded at the beginning and end of each 8 hour, and the 24 hour continuous pumping test. The pumping rate was monitored and recorded throughout each pump test, as well as total volumes pumped. In addition to recording monitoring well water levels and pumping rates during all of the pumping tests, Zion also

measured and recorded daily rainfall. Groundwater generated during all pump test activities was discharged to the sewer manhole on Taylor's Lane, consistent with the previous pump test in November 2008. The Westchester County Department of Environmental Facilities (DEF) had been contacted prior to initiation of the pump test to ensure that water discharge procedures meet their requirements.

Phase I Pumping Test Results

Phase I pumping test data collected by Zion during the pumping tests are presented in Appendix B. The pumping rate during the test generally ranged between 32 and 33 gallons per minute (gpm), and the overall average was approximately 32.5 gpm. There was measurable precipitation everyday during pumping. The largest amount of precipitation was on Wednesday, May 6th with 1.04 inches of measured precipitation. The greatest change in water level during each test was measured in MW-14S, located approximately 5 feet from the pumping well, and with similar screen intervals. The water level change in MW-14S was generally 3.0 feet. Monitoring well MW-14D generally had a drop in water level of just over 0.5 feet. Water level changes in monitoring wells MW-4S, MW-4M, and MW-4D were all generally about 0.1 feet. It is likely that the precipitation had an impact on the monitoring well water levels. As an example, the water level in MW-4M rose 0.03 feet during the first four hours of the 24 hour continuous test, when it should have dropped. Without water level measurements in a monitoring well not impacted by the pumping (i.e., only impacted by precipitation), it is not possible to specifically account for the precipitation in water levels (i.e., subtract out any rise in water level that would have been due to the precipitation). However, the heavy rainfall during the Phase I pump test provided for a worst case scenario, which will be useful during the leachate mitigation design phase of this project. A plot of the groundwater elevations measured in the monitoring wells during the 24 hour pumping test is shown on **Figure 3**. A plot of the groundwater elevations measured in the monitoring wells during the November 2008 24 hour pumping test is shown on **Figure 4**. While the starting groundwater elevations are slightly different between the two plots, the amount of water level change between the two events is very similar.

In general, the length of time between operating cycles of the external sump pump at the Weinstein residence either stayed the same or slightly increased during the Phase I Pump Test. Again, these measurements were likely affected by the heavy and consistent rainfall throughout the week. In addition, the significant distance between well MW-14M and the Weinstein residence also played a role in marginal changes observed.

Phase I Pumping Test Analysis

Analysis of the pumping test data was completed using version 3.5 of AQTESOLV, a software package for the analysis of pumping test data for a variety of aquifer conditions using multiple methods of analysis. Data from the 24 hour pumping test was input into AQTESOLV to determine the aquifer hydraulic properties of transmissivity and storativity. The Cooper-Jacob method for an unconfined aquifer was used to perform the analysis. The resulting plot for each monitoring well is presented in Appendix C. The transmissivity values range between 38.1 square centimeters per second (cm^2/sec) and 83.6 cm^2/sec. Based on an average aquifer thickness of 65 feet (1,981 centimeters [cm]), the hydraulic conductivity (permeability) of the

aquifer ranges between 1.9 to 4.2 x 10^{-2} centimeters per second (cm/sec). A hydraulic conductivity of 4 x 10^{-2} cm/sec is the same as 113 feet per day. This shows that the aquifer is very permeable and able to yield large quantities of water. Unconfined aquifers with high permeability typically yield a "cone of depression" around a pumping well that extends out a large distance, but is relatively shallow (i.e., very little drawdown away from the pumping well).

Recommendations

Since the aquifer is permeable, and there was very little response in the three monitoring wells in the vicinity of the Markowitz residence, Shaw recommends that the Phase II pumping tests be implemented. Shaw further recommends the following:

- The new well MW-4M has a 6-inch diameter and therefore can accommodate larger suction pipes. Zion will use a minimum of 2-inch suction pipe inside of monitoring well MW-4M to increase the discharge rate to the maximum that the equipment can pump;
- Zion will again measure the length of time between operating cycles of the external sump pump at the Weinstein residence during the Phase II Pump Test;
- Also due to the larger well diameter well MW-4M, Zion will measure the water level in the pumping well during the tests; and
- Measure the water level in a monitoring well MW-13 during the tests in an effort to establish the impact of precipitation during the tests. There is a possibility that MW-13 will also be impacted by the pumping, but this effort may be useful in performing an thorough analysis of the Phase II pumping tests.

By conducting the pump tests closer to the Markowitz residence, and pumping at a higher discharge rate, a comprehensive analysis of the method and means for the mitigation of the leachate problem can be made.

Please feel free to contact me if you should have any questions.

Sincerely,

Shaw Environmental and Infrastructure Engineering of N.Y., P.C.

Michael R. Sherwood
Client Program Manager

Curtis Kraemer, PG
Senior Hydrogeologist

Attachments: Figure 1
Figure 2
Figure 3
Figure 4

Appendix A – MW-4M Boring Log
Appendix B – Pump Test data
Appendix C – Pump Test Analysis

FIGURES

N

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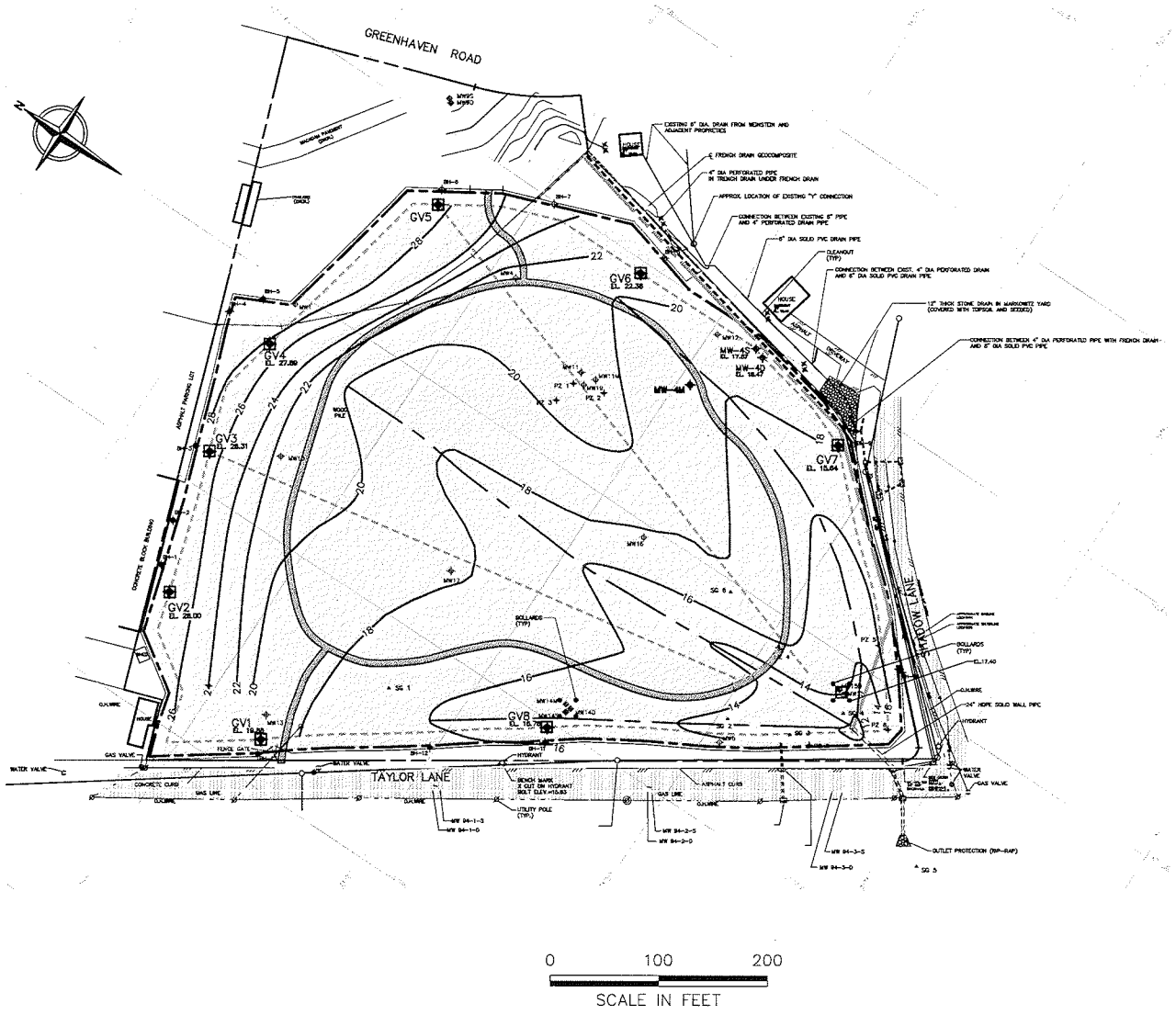
FIGURE 1
SITE LOCATION

TAYLOR'S LANE COMPOST SITE

VILLAGE OF MAMARONECK, NEW YORK



LEGEND

○ SMH	=	SANITARY SEWER MANHOLE
▭ CB	=	CATCH BASIN
□ FI	=	FLAT GRATE
RCP	=	REINFORCED CONCRETE PIPE
ACP	=	ASBESTOS CEMENT PIPE
CMP	=	CORRUGATED METAL PIPE
VCP	=	VITRIFIED CLAY PIPE
SP	=	STEEL PIPE
MW-1	=	MONITORING WELL
	=	STONE WALL
	=	VEGETATIVE DEBRIS PILE
⌀	=	UTILITY POLE
	=	PROPERTY LINE
	=	PERFORATED DRAINAGE PIPE
	=	DRAINAGE SWALE
	=	TRIANGULAR DRAINAGE CHANNEL
	=	GAS VENTING PIPE
	=	CONTOUR
	=	LIMIT OF FINAL COVER
	=	GAS VENT
	=	NEW MONITRORING WELL (TYP)
	=	MONITRORING WELL ABANDONED (TYP)
	=	BAR HOLE PUNCH (TYP)
	=	FENCE AROUNG GAS/MONITORING WELL (TYP)
	=	FINAL COVER AREA
	=	WALK TRAIL
	=	PIEZOMETERS
	=	FENCE

KW Furey Engineering, P.C.
engineering & construction management
One Virginia Street
New City, New York 10956
Phone: 845-708-0232
Fax: 845-708-0233

Project Title

VILLAGE OF MAMARONECK
TAYLORS LANE
INACTIVE HAZARDOUS WASTE SITE

LEACHATE MITIGATION

GENERAL

Drawing Title

SITE PLAN

KEITH W. FUREY, P.E.

Date	Revisions	MD

Graphic Scale
AS INDICATED

Project No. 012.05.09
Date 11/06
Drawing By KJ-KF
Checked By KJ-KF

FIGURE 2

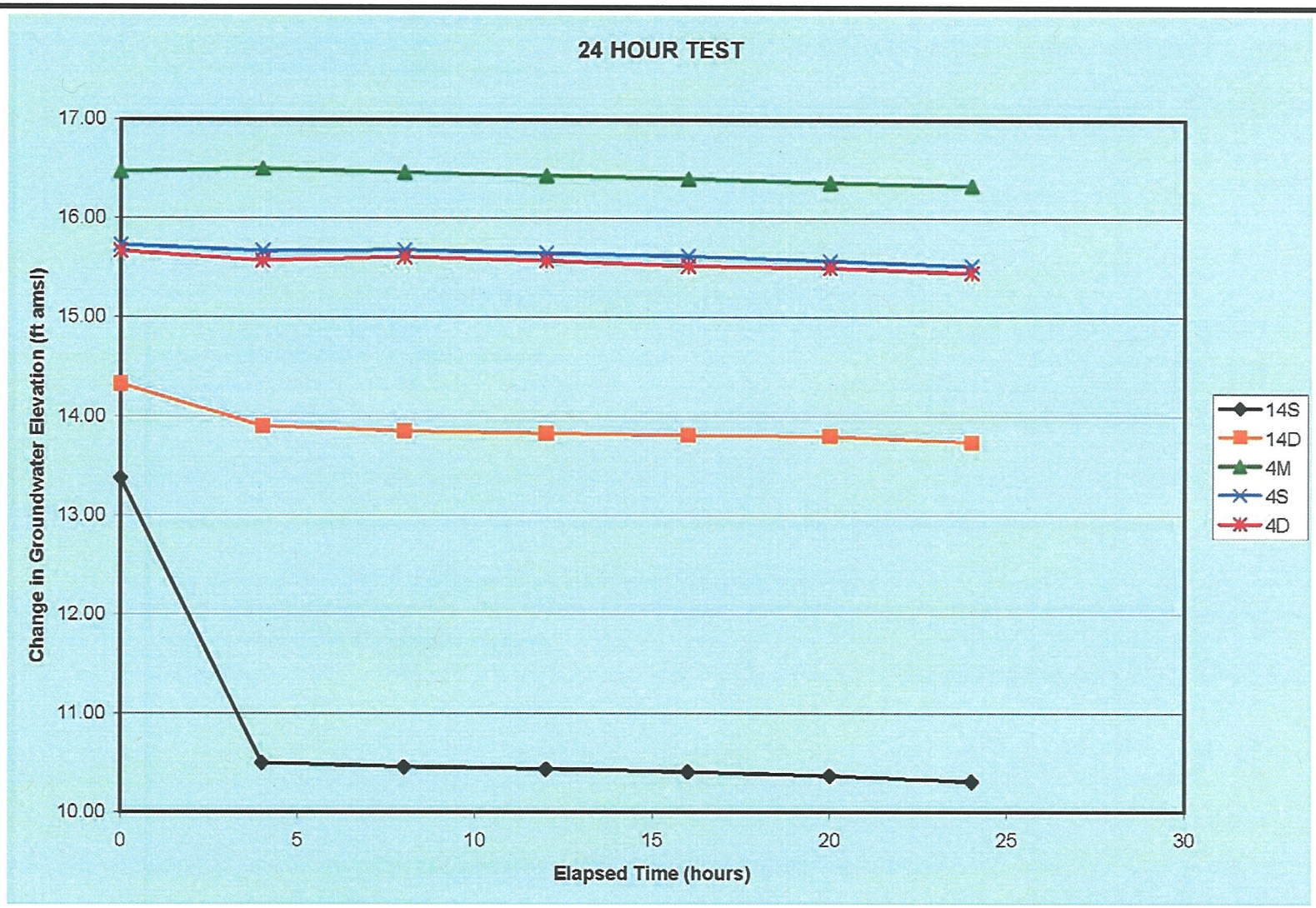


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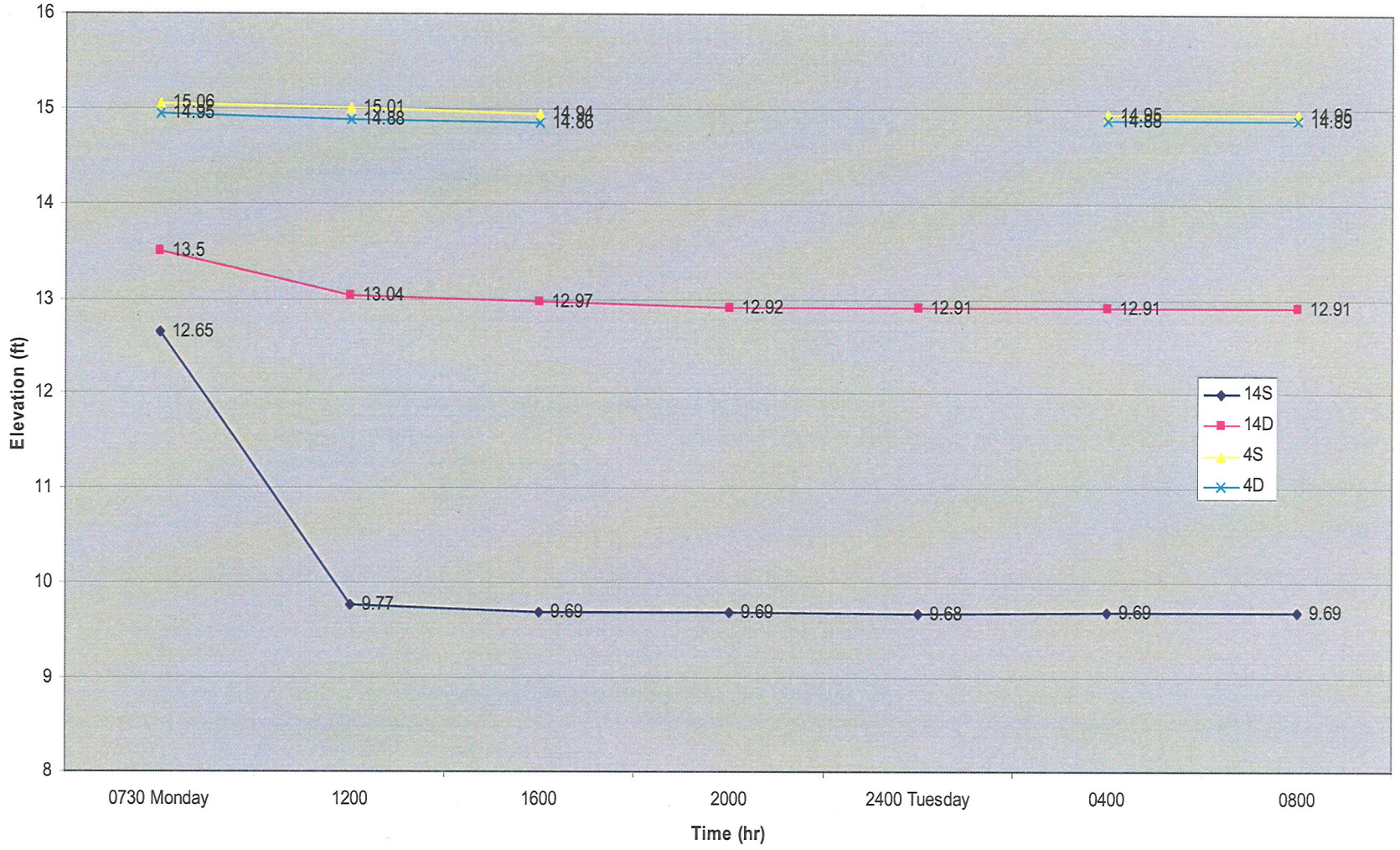
FIGURE 3

PHASE I PUMP TEST
GROUNDWATER ELEVATION CHANGES
DURING 24-HOUR PUMP TEST



Shaw Shaw Environmental, Inc.

FIGURE 4

NOVEMBER 2008 PUMP TEST
GROUNDWATER ELEVATION CHANGES
DURING 24-HOUR PUMP TEST

APPENDIX A
MW-4M BORING LOG

Shaw Environmental & Infrastructure, Inc.

Shaw The Shaw Group Inc.™

101-1 Colin Drive
Holbrook, New York 11741
Phone: (631) 472 4000
Fax: (631) 472 4077

MONITORING WELL LOG

PROJECT NUMBER: 133191 | **TAYLOR'S LANE - COMPOST SITE, MAMARONECK, NY**

MONITORING WELL - MW - 4M

UTILITY CLEARANCE (0' - 5')
DATE: **04.27.2009**
GEOLOGIST: **Sanjay Sharma**
DRILLING METHOD: **8" ID (Ø) Hollow Stem Auger**

DATE STARTED: **04.27.2009** | DATE COMPLETED: **04.27.2009**
GROUNDWATER LEVEL: **4.0 Ft bgs** | TOTAL WELL DEPTH: **20.0 Ft (6" Ø)** | **WELL SCREEN SLOT SIZE: 0.030** | **SAND SIZE: # 1**
WEATHER: **82°F, Clear, Sunny, ENE -Wind**
PAGE: **1of 1**

DEPTH (ft)	BLOW COUNTS	RECOVERY (%)	DEPTH (ft)	DESCRIPTION	USCS SYMBOL	SAMPLE DEPTH (Ft)	PID DATA (ppm)	REMARKS	WELL CONSTRUCTION (6" Ø)
	HAND CLEARANCE		0.0 - 0.5	PEAT - Vegetation (Grasses)					BENTONITE
			0.5 - 2.5	Dark brown to black M-C SAND, more PEBBLES, GRAVEL, and rocks & bricks. Hard, compact, and dry soil. **LINER at 2.5'**					LINER at 2½' bgs
5.0			2.5 - 5.0	FILL - Black SILTY SAND. Debris - glass pieces, rubber, plastics. Dry up to 3.0' bgs, moist up to 4.0'bgs and then wet.					SAND ABOVE WELL SCREEN ▼ 4.0Ft
	2/2/3/5	50	5-7	FILL - M-F SAND and debris as before. Asphaltic (?) material Wet	FILL				SAND
	5/8/3/2	30	7-9	Same as before, more GRAVEL Wet					
10.0	3/4/5/3	50	9-11	FILL - Light brown M-C SAND and debris as before. Wet		NO SAMPLE	0.0	NO ODOR NO GASES	
	4/5/5/7	40	11-13	Light brown F-C SAND, little fine GRAVEL and few PEBBLES Wet	SP				
15.0	4/5/10/11	50	13-15	Greenish gray F-M SAND, more fine GRAVEL and mica flakes Wet					
	5/7/6/5	100	15-16.5	Same as before					
			16.5-17	Light brown to gray SILTY SAND. Wet	SM				
	6/7/7/10	80	17-18	Black Asphaltic (?) material. Wet	FILL				
			18-19	Yellowish brown M-C SAND. Wet	SP				
20.0	6/7/8/7	50	19-21	Black Asphaltic (?) material, glass debris. Wet	FILL				
21.0									Well Bottom at 20 Ft

RISER PIPE (6"Ø)
WELL SCREEN (6" Ø)
WELL COVER & STICK UP PIPE

NOTES:

Drilling Contractor: **ADT**
Drilling Equipment: **Track Mounted Hollow Stem Auger (CME) - 8" Inner Dia. Augers**
Driller: **Greg, Chris, and Frank**

Continuous Split spoon sampling from 5' -21' bgs

▼ Groundwater Level intercepted during hand digging.
bgs = Below ground surface

APPENDIX B
PUMP TEST DATA

Monday, May 04, 2009

Daily Rainfall: 0.04 in.

ID	Well Survey Info	TPVC	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation
		TIME : 1030			TIME : 1430		TIME : 1830		TIME :	
14M	16.80		3.71	13.09	N/A	N/A	5.10	11.70		16.80
14S	16.52	3.37	3.29	13.15	6.32	10.20	6.44	10.08		16.52
14D	16.75	2.26	2.66	14.09	3.16	13.59	3.25	13.50		16.75
4M	20.49	3.42	4.20	16.29	4.26	16.23	4.35	16.14		20.49
4S	17.57	1.68	2.06	15.51	2.19	15.38	3.23	14.34		17.57
4D	18.47	2.29	3.06	15.41	3.17	15.30	3.23	15.24		18.47

Weinsteins sump pump - Morning: **6 min**
Weinsteins sump pump - Evening: **12 min**

NOTE: MW-14S TPVC IS 0.08 HIGHER THAN THE TOC. TPVC READINGS ARE USED IN THE TOC SLOT FOR GROUND WATER ELEVATIONS.

* NO READINGS WERE TAKEN ON MW-14M WHILE PUMPING.

READ @:	1030	START
FLO RATE:	32.73	GPM
TOTAL (2):	0	PURGED

READ @:	1430	STOP
FLO RATE:	32.03	GPM
TOTAL (2):	7682.9	PURGED

READ @:	1830	STOP
FLO RATE:	32.03	GPM
TOTAL (2):	8127.9	PURGED

Tuesday, May 05, 2009

Daily Rainfall: 0.27 in.

ID	Well Survey Info	TPVC	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation
		TIME : 0710			TIME : 1110		TIME : 1510		TIME :	
14M	16.80		3.77	13.03	N/A	N/A	5.30	11.50		16.80
14S	16.52	3.44	3.36	13.08	6.37	10.15	6.46	10.06		16.52
14D	16.75	2.32	2.72	14.03	3.22	13.53	3.30	13.45		16.75
4M	20.49	3.48	4.26	16.23	4.35	16.14	4.38	16.11		20.49
4S	17.57	1.73	2.11	15.46	2.24	15.33	2.26	15.31		17.57
4D	18.47	2.42	3.12	15.35	3.22	15.25	3.26	15.21		18.47

Weinsteins sump pump - Morning: **6 min**
Weinsteins sump pump - Evening: **9 min**

NOTE: MW-14S TPVC IS 0.08 HIGHER THAN THE TOC. TPVC READINGS ARE USED IN THE TOC SLOT FOR GROUND WATER ELEVATIONS.

* NO READINGS WERE TAKEN ON MW-14M WHILE PUMPING.

READ @:	0710	START
FLO RATE:	33.55	GPM
TOTAL (2):	0	PURGED

READ @:	1110	STOP
FLO RATE:	32.38	GPM
TOTAL (2):	7713.8	PURGED

READ @:	1510	STOP
FLO RATE:	32.15	GPM
TOTAL (2):	7563.8	PURGED

Wednesday, May 06, 2009

Daily Rainfall: 1.04 in.

ID	Well Survey Info	TPVC	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation
		TIME : 0700			TIME : 1100		TIME : 1500		TIME :	
14M	16.80		3.72	13.08	N/A	N/A	5.10	11.70		16.80
14S	16.52	3.40	3.32	13.12	6.33	10.19	6.38	10.14		16.52
14D	16.75	2.29	2.69	14.06	3.21	13.54	3.25	13.50		16.75
4M	20.49	3.46	4.24	16.25	4.33	16.16	4.37	16.12		20.49
4S	17.57	1.60	1.90	15.67	2.21	15.36	2.23	15.34		17.57
4D	18.47	2.27	3.04	15.43	3.18	15.29	3.21	15.26		18.47

Weinsteins sump pump - Morning: **8 min**
Weinsteins sump pump - Evening: **8 min**

NOTE: MW-14S TPVC IS 0.08 HIGHER THAN THE TOC. TPVC READINGS ARE USED IN THE TOC SLOT FOR GROUND WATER ELEVATIONS.

* NO READINGS WERE TAKEN ON MW-14M WHILE PUMPING.

READ @:	0700	START
FLO RATE:	33.55	GPM
TOTAL (2):	0	PURGED

READ @:	1100	STOP
FLO RATE:	32.27	GPM
TOTAL (2):	8485.3	PURGED

READ @:	1500	STOP
FLO RATE:	33.05	GPM
TOTAL (2):	6763.7	PURGED

Thursday, May 07, 2009

Daily Rainfall: 0.23 in.

ID	Well Survey Info	TPVC	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation
		TIME : 0800			TIME : 1200		TIME : 1600		TIME : 2000	
14M	16.80		3.45	13.35	N/A	N/A	N/A	N/A	N/A	N/A
14S	16.52	3.14	3.06	13.38	6.02	10.50	6.06	10.46	6.08	10.44
14D	16.75	2.02	2.42	14.33	2.85	13.90	2.90	13.85	2.92	13.83
4M	20.49	3.23	4.02	16.47	3.99	16.50	4.03	16.46	4.06	16.43
4S	17.57	1.46	1.84	15.73	1.90	15.67	1.89	15.68	1.92	15.65
4D	18.47	2.03	2.80	15.67	2.90	15.57	2.86	15.61	2.90	15.57

Weinsteins sump pump - Morning: **4 min**
Weinsteins sump pump - Evening: **6 min**

NOTE: MW-14S TPVC IS 0.08 HIGHER THAN THE TOC. TPVC READINGS ARE USED IN THE TOC SLOT FOR GROUND WATER ELEVATIONS.

* NO READINGS WERE TAKEN ON MW-14M WHILE PUMPING.

READ @:	0800	START	READ @:	1200	STOP
FLO RATE:	33.67	GPM	FLO RATE:	32.38	GPM
TOTAL (2):	0	PURGED	TOTAL (2):	8695.5	PURGED

READ @:	1600	STOP	READ @:	2000	STOP
FLO RATE:	32.85	GPM	FLO RATE:	32.62	GPM
TOTAL (2):	7582.0	PURGED	TOTAL (2):	7640.0	PURGED

Friday, May 08, 2009

Daily Rainfall: 0.30 in.

ID	Well Survey Info	TPVC	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation
		TIME : 0000 Midnight			TIME : 0400		TIME : 0800		TIME :	
14M	16.80	N/A	N/A	N/A	N/A	N/A		16.80		16.80
14S	16.52	6.11	6.03	10.41	6.15	10.37	6.21	10.31		16.52
14D	16.75	2.54	2.94	13.81	2.95	13.80	3.01	13.74		16.75
4M	20.49	3.31	4.09	16.4	4.13	16.36	4.16	16.33		20.49
4S	17.57	1.57	1.95	15.62	2.00	15.57	2.05	15.52		17.57
4D	18.47	2.18	2.95	15.52	2.97	15.50	3.02	15.45		18.47

Weinsteins sump pump - Morning: **5 min**
Weinsteins sump pump - Evening: **5 min**

NOTE: MW-14S TPVC IS 0.08 HIGHER THAN THE TOC. TPVC READINGS ARE USED IN THE TOC SLOT FOR GROUND WATER ELEVATIONS.

* NO READINGS WERE TAKEN ON MW-14M WHILE PUMPING.

READ @:	0000	START
FLO RATE:	32.4	GPM
TOTAL (2):	0	PURGED

READ @:	0400	STOP
FLO RATE:	32.5	GPM
TOTAL (2):	7640.0	PURGED

READ @:	0800	STOP
FLO RATE:	32.5	GPM
TOTAL (2):	7352.0	PURGED

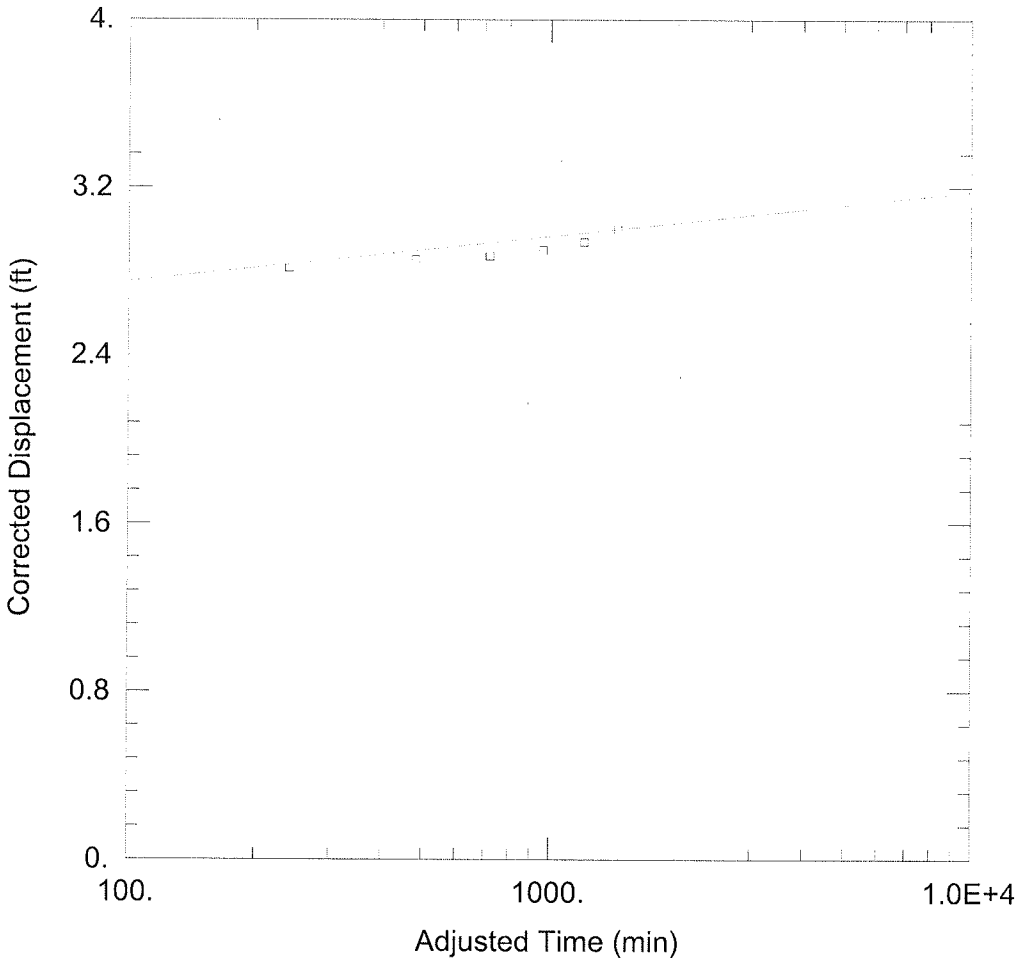
TOTAL PURGED FOR EVENT

May 4, 2009 through May 8, 2009

DAY	DAILY TOTAL	HOURS OF PURGING
MONDAY	15810.8	8
TUESDAY	15277.6	8
WEDNESDAY	15249.0	8
THURSDAY - **(24h)**	23917.5	16
FRIDAY	14992.0	8
TOTAL PURGED	85246.9	48

APPENDIX C
PUMP TEST ANALYSIS

MW-14S
24 Hour Pump Test Analysis



WELL TEST ANALYSIS

Data Set: G:\A-Curt\Taylor's Lane\Phase I Pump Test\MW-14S.aqt
Date: 05/11/09 Time: 21:53:53

PROJECT INFORMATION

Company: Shaw environmental, Inc.
Client: Taylor's Lane Compost Site
Location: Mamaroneck, New York
Test Well: MW-14M
Test Date: May 7 - 8, 2009

AQUIFER DATA

Saturated Thickness: 65. ft
Anisotropy Ratio (Kz/Kr): 1.

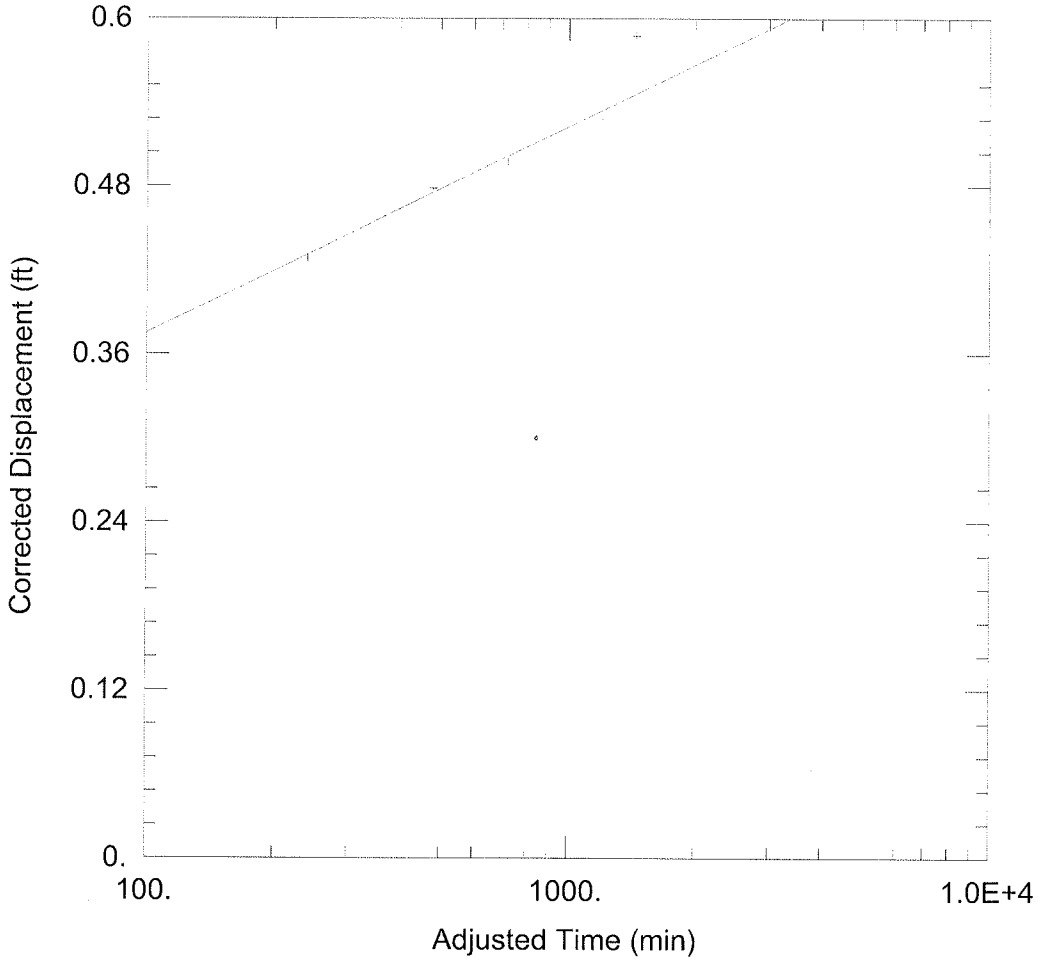
WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
MW-14M	0	0	MW-14S	5	5

SOLUTION

Aquifer Model: Unconfined
Solution Method: Cooper-Jacob
T = 57.4 cm^2/sec
S = 2.547E-12

MW-14D
24 Hour Pump Test Analysis



WELL TEST ANALYSIS

Data Set: G:\A-Curt\Taylor's Lane\Phase I Pump Test\MW-14D - only.aqt
Date: 05/11/09 Time: 21:55:57

PROJECT INFORMATION

Company: Shaw environmental, Inc.
Client: Taylor's Lane Compost Site
Location: Mamaroneck, New York
Test Well: MW-14M
Test Date: May 7 - 8, 2009

AQUIFER DATA

Saturated Thickness: 65. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

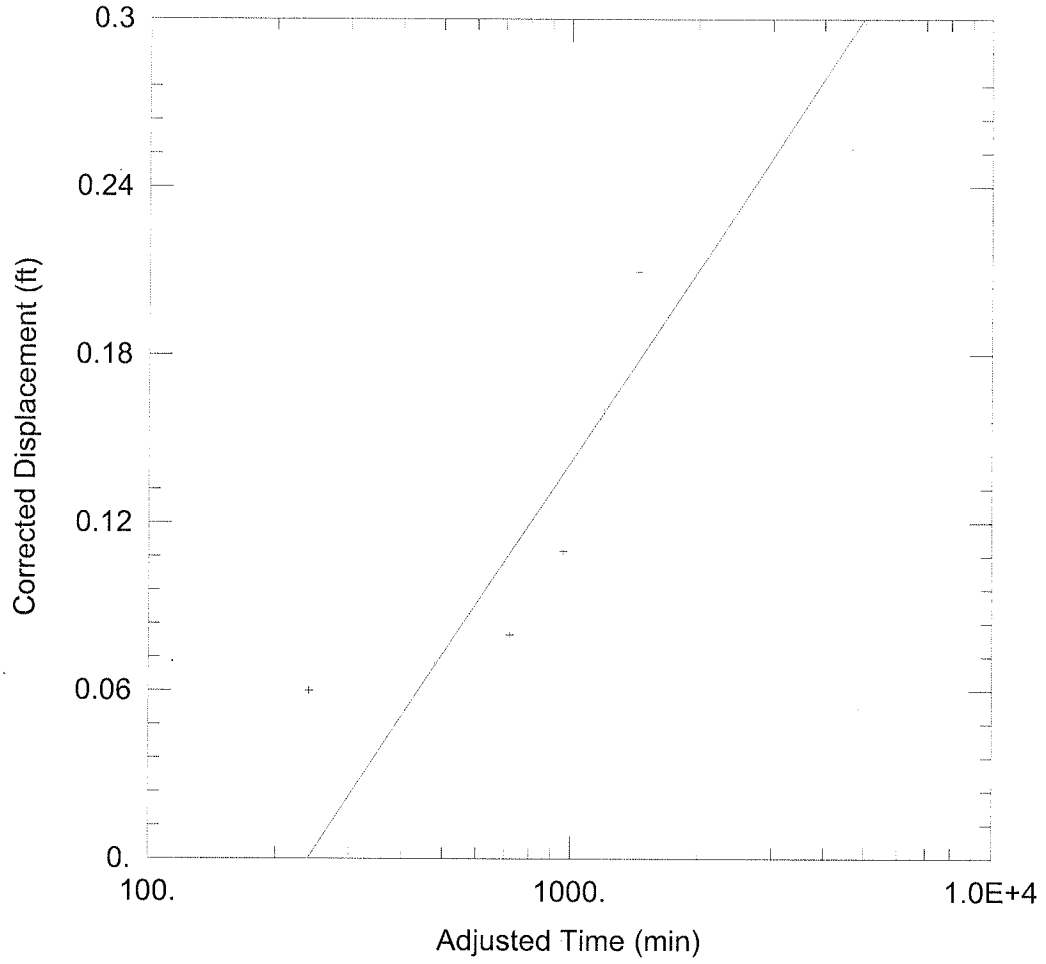
Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
MW-14M	0	0	MW-14D	5	5

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 83.61 cm^2/sec S = 0.06935

MW-4S
24 Hour Pump Test Analysis



WELL TEST ANALYSIS

Data Set: G:\A-Curt\Taylor's Lane\Phase I Pump Test\MW-4S - only.aqt
Date: 05/11/09 Time: 21:50:21

PROJECT INFORMATION

Company: Shaw environmental, Inc.
Client: Taylor's Lane Compost Site
Location: Mamaroneck, New York
Test Well: MW-14M
Test Date: May 7 - 8, 2009

AQUIFER DATA

Saturated Thickness: 65. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

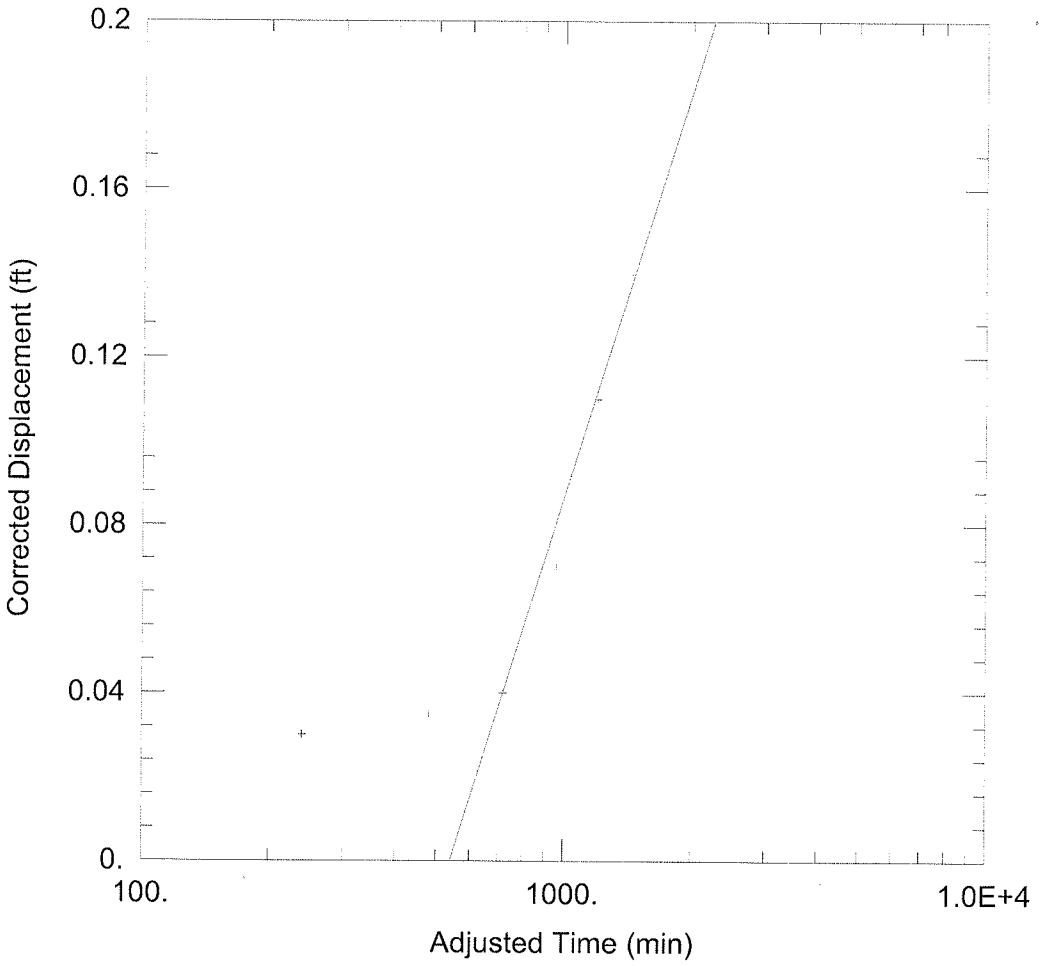
Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
MW-14M	0	0	MW-4S	210	350

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 54.17 cm^2/sec S = 0.01126

MW-4M
24 Hour Pump Test Analysis



WELL TEST ANALYSIS

Data Set: G:\A-Curt\Taylor's Lane\Phase I Pump Test\MW-4M - only.aqt
Date: 05/11/09 Time: 21:52:05

PROJECT INFORMATION

Company: Shaw environmental, Inc.
Client: Taylor's Lane Compost Site
Location: Mamaroneck, New York
Test Well: MW-14M
Test Date: May 7 - 8, 2009

AQUIFER DATA

Saturated Thickness: 65. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
MW-14M	0	0	MW-4M	200	300

SOLUTION

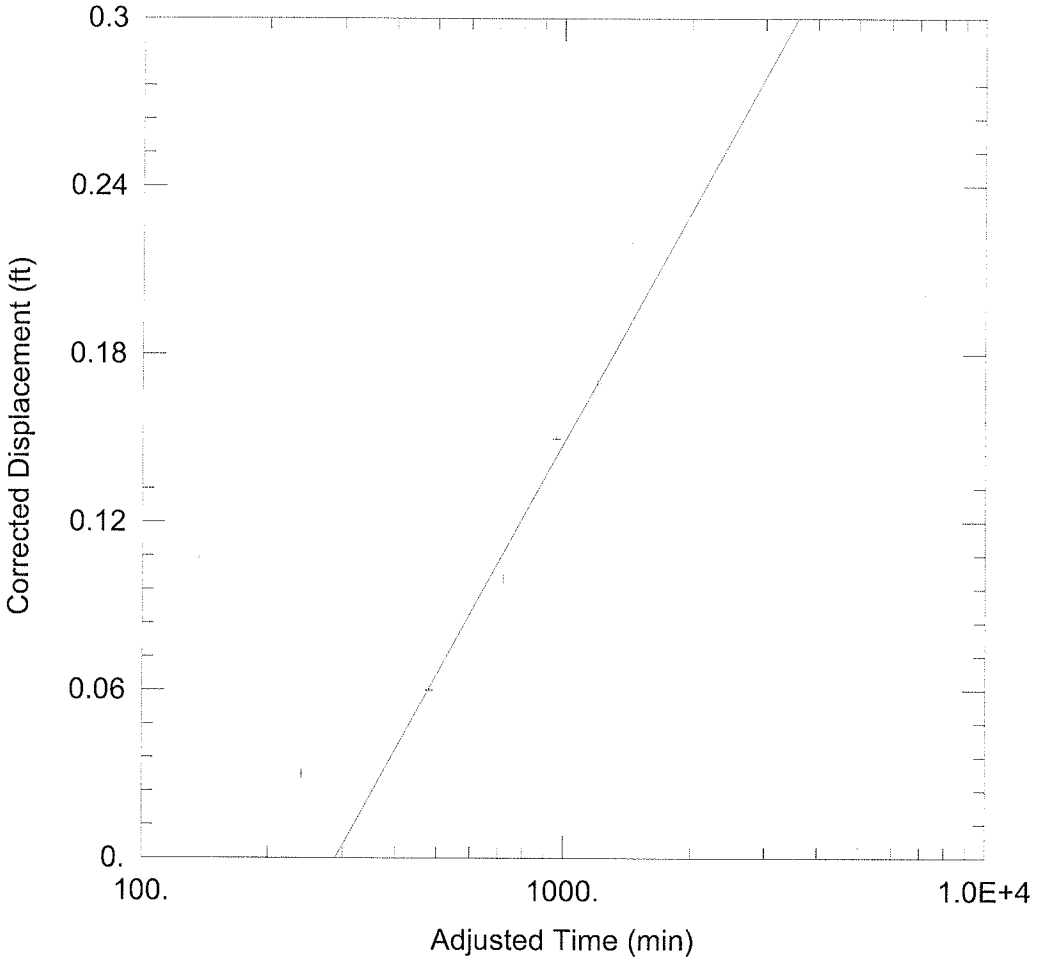
Aquifer Model: Unconfined

Solution Method: Cooper-Jacob

T = 38.12 cm^2/sec

S = 0.023

MW-4D
24 Hour Pump Test Analysis



WELL TEST ANALYSIS

Data Set: G:\A-Curt\Taylor's Lane\Phase I Pump Test\MW-4D - only.aqt
Date: 05/11/09 Time: 21:49:09

PROJECT INFORMATION

Company: Shaw environmental, Inc.
Client: Taylor's Lane Compost Site
Location: Mamaroneck, New York
Test Well: MW-14M
Test Date: May 7 - 8, 2009

AQUIFER DATA

Saturated Thickness: 65. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
MW-14M	0	0	MW-4D	210	350

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 44.95 cm^2/sec S = 0.01128

Monday, May 04, 2009

Daily Rainfall: 0.04 in.

ID	Well Survey Info	TPVC	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation
		TIME : 1030			TIME : 1430		TIME : 1830		TIME :	
14M	16.80		3.71	13.09	N/A	N/A	5.10	11.70		16.80
14S	16.52	3.37	3.29	13.15	6.32	10.20	6.44	10.08		16.52
14D	16.75	2.26	2.66	14.09	3.16	13.59	3.25	13.50		16.75
4M	20.49	3.42	4.20	16.29	4.26	16.23	4.35	16.14		20.49
4S	17.57	1.68	2.06	15.51	2.19	15.38	3.23	14.34		17.57
4D	18.47	2.29	3.06	15.41	3.17	15.30	3.23	15.24		18.47

Weinsteins sump pump - Morning: **6 min**
Weinsteins sump pump - Evening: **12 min**

NOTE: MW-14S TPVC IS 0.08 HIGHER THAN THE TOC. TPVC READINGS ARE USED IN THE TOC SLOT FOR GROUND WATER ELEVATIONS.

* NO READINGS WERE TAKEN ON MW-14M WHILE PUMPING.

READ @:	1030	START
FLO RATE:	32.73	GPM
TOTAL (2):	0	PURGED

READ @:	1430	STOP
FLO RATE:	32.03	GPM
TOTAL (2):	7682.9	PURGED

READ @:	1830	STOP
FLO RATE:	32.03	GPM
TOTAL (2):	8127.9	PURGED

Tuesday, May 05, 2009

Daily Rainfall: 0.27 in.

ID	Well Survey Info	TPVC	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation
		TIME : 0710			TIME : 1110		TIME : 1510		TIME :	
14M	16.80		3.77	13.03	N/A	N/A	5.30	11.50		16.80
14S	16.52	3.44	3.36	13.08	6.37	10.15	6.46	10.06		16.52
14D	16.75	2.32	2.72	14.03	3.22	13.53	3.30	13.45		16.75
4M	20.49	3.48	4.26	16.23	4.35	16.14	4.38	16.11		20.49
4S	17.57	1.73	2.11	15.46	2.24	15.33	2.26	15.31		17.57
4D	18.47	2.42	3.12	15.35	3.22	15.25	3.26	15.21		18.47

Weinsteins sump pump - Morning: **6 min**
Weinsteins sump pump - Evening: **9 min**

NOTE: MW-14S TPVC IS 0.08 HIGHER THAN THE TOC. TPVC READINGS ARE USED IN THE TOC SLOT FOR GROUND WATER ELEVATIONS.

* NO READINGS WERE TAKEN ON MW-14M WHILE PUMPING.

READ @:	0710	START
FLO RATE:	33.55	GPM
TOTAL (2):	0	PURGED

READ @:	1110	STOP
FLO RATE:	32.38	GPM
TOTAL (2):	7713.8	PURGED

READ @:	1510	STOP
FLO RATE:	32.15	GPM
TOTAL (2):	7563.8	PURGED

Wednesday, May 06, 2009

Daily Rainfall: 1.04 in.

ID	Well Survey Info	TPVC	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation
		TIME : 0700			TIME : 1100		TIME : 1500		TIME :	
14M	16.80		3.72	13.08	N/A	N/A	5.10	11.70		16.80
14S	16.52	3.40	3.32	13.12	6.33	10.19	6.38	10.14		16.52
14D	16.75	2.29	2.69	14.06	3.21	13.54	3.25	13.50		16.75
4M	20.49	3.46	4.24	16.25	4.33	16.16	4.37	16.12		20.49
4S	17.57	1.60	1.90	15.67	2.21	15.36	2.23	15.34		17.57
4D	18.47	2.27	3.04	15.43	3.18	15.29	3.21	15.26		18.47

Weinsteins sump pump - Morning: **8 min**
Weinsteins sump pump - Evening: **8 min**

NOTE: MW-14S TPVC IS 0.08 HIGHER THAN THE TOC. TPVC READINGS ARE USED IN THE TOC SLOT FOR GROUND WATER ELEVATIONS.

* NO READINGS WERE TAKEN ON MW-14M WHILE PUMPING.

READ @:	0700	START
FLO RATE:	33.55	GPM
TOTAL (2):	0	PURGED

READ @:	1100	STOP
FLO RATE:	32.27	GPM
TOTAL (2):	8485.3	PURGED

READ @:	1500	STOP
FLO RATE:	33.05	GPM
TOTAL (2):	6763.7	PURGED

Thursday, May 07, 2009

Daily Rainfall: 0.23 in.

ID	Well Survey Info	TPVC	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation
		TIME : 0800			TIME : 1200		TIME : 1600		TIME : 2000	
14M	16.80		3.45	13.35	N/A	N/A	N/A	N/A	N/A	N/A
14S	16.52	3.14	3.06	13.38	6.02	10.50	6.06	10.46	6.08	10.44
14D	16.75	2.02	2.42	14.33	2.85	13.90	2.90	13.85	2.92	13.83
4M	20.49	3.23	4.02	16.47	3.99	16.50	4.03	16.46	4.06	16.43
4S	17.57	1.46	1.84	15.73	1.90	15.67	1.89	15.68	1.92	15.65
4D	18.47	2.03	2.80	15.67	2.90	15.57	2.86	15.61	2.90	15.57

Weinsteins sump pump - Morning: **4 min**
Weinsteins sump pump - Evening: **6 min**

NOTE: MW-14S TPVC IS 0.08 HIGHER THAN THE TOC. TPVC READINGS ARE USED IN THE TOC SLOT FOR GROUND WATER ELEVATIONS.

* NO READINGS WERE TAKEN ON MW-14M WHILE PUMPING.

READ @:	0800	START	READ @:	1200	STOP
FLO RATE:	33.67	GPM	FLO RATE:	32.38	GPM
TOTAL (2):	0	PURGED	TOTAL (2):	8695.5	PURGED

READ @:	1600	STOP	READ @:	2000	STOP
FLO RATE:	32.85	GPM	FLO RATE:	32.62	GPM
TOTAL (2):	7582.0	PURGED	TOTAL (2):	7640.0	PURGED

Friday, May 08, 2009

Daily Rainfall: 0.30 in.

ID	Well Survey Info	TPVC	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation
		TIME : 0000 Midnight			TIME : 0400		TIME : 0800		TIME :	
14M	16.80	N/A	N/A	N/A	N/A	N/A		16.80		16.80
14S	16.52	6.11	6.03	10.41	6.15	10.37	6.21	10.31		16.52
14D	16.75	2.54	2.94	13.81	2.95	13.80	3.01	13.74		16.75
4M	20.49	3.31	4.09	16.4	4.13	16.36	4.16	16.33		20.49
4S	17.57	1.57	1.95	15.62	2.00	15.57	2.05	15.52		17.57
4D	18.47	2.18	2.95	15.52	2.97	15.50	3.02	15.45		18.47

Weinsteins sump pump - Morning: **5 min**
Weinsteins sump pump - Evening: **5 min**

NOTE: MW-14S TPVC IS 0.08 HIGHER THAN THE TOC. TPVC READINGS ARE USED IN THE TOC SLOT FOR GROUND WATER ELEVATIONS.

* NO READINGS WERE TAKEN ON MW-14M WHILE PUMPING.

READ @:	0000	START
FLO RATE:	32.4	GPM
TOTAL (2):	0	PURGED

READ @:	0400	STOP
FLO RATE:	32.5	GPM
TOTAL (2):	7640.0	PURGED

READ @:	0800	STOP
FLO RATE:	32.5	GPM
TOTAL (2):	7352.0	PURGED

TOTAL PURGED FOR EVENT

May 4, 2009 through May 8, 2009

DAY	DAILY TOTAL	HOURS OF PURGING
MONDAY	15810.8	8
TUESDAY	15277.6	8
WEDNESDAY	15249.0	8
THURSDAY - **(24h)**	23917.5	16
FRIDAY	14992.0	8
TOTAL PURGED	85246.9	48

ZION ENVIRONMENTAL, LLC.

TOTAL PURGED FOR EVENT

May 18, 2009 through May 20, 2009

DAY	DAILY TOTAL	HOURS OF PURGING
MONDAY	1256.32	2
TUESDAY	4425.12	6
WEDNESDAY	5608.75	8
THURSDAY - **(24h)**	0.00	0
FRIDAY	0.00	0
TOTAL PURGED	11290.19	16

ZION ENVIRONMENTAL, LLC.

Monday, May 18, 2009

Daily Rainfall: 0.00 in.

ID	Well Survey Info	TPVC	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation	TOC	Ground Water Elevation
		TIME : 1330			TIME : 1530		TIME :		TIME :	
14M	16.80		3.53	13.27	3.38	13.42		16.80		16.80
14S	16.52	3.21	3.29	13.31	3.22	13.30		16.52		16.52
14D	16.75	2.05	2.45	14.3	2.50	14.25		16.75		16.75
4M	20.49	3.22	4.00	16.49	4.35	16.14		20.49		20.49
4S	17.57	1.54	1.92	15.65	2.20	15.37		17.57		17.57
4D	18.47	2.15	2.92	15.55	3.41	15.06		18.47		18.47

Weinsteins sump pump - Morning: 8 min
Weinsteins sump pump - Evening: 9 min

Note: The 2" PVC used on the suction line evacuated MW-4M. Tried different size PVC to lower the GPM. Used 1" PVC for this test.

NOTE: MW-14S TPVC IS 0.08 HIGHER THAN THE TOC. TPVC READINGS ARE USED IN THE TOC SLOT FOR GROUND WATER ELEVATIONS.

* NO READINGS WERE TAKEN ON MW-4M WHILE PUMPING.

READ @:	900	START
FLO RATE:	68	GPM
TOTAL (2):	35 / DRY	PURGED

READ @:	1330	START
FLO RATE:	18-23	GPM
TOTAL (2):	0	PURGED

READ @:	1530	STOP
FLO RATE:	0-18	GPM
TOTAL (2):	1256.32	PURGED

ZION ENVIRONMENTAL, LLC.

Tuesday, May 19, 2009

Daily Rainfall: 0.00 in.

Time	14M TOC	14S TPVC	14D TOC	4M TOC	4S TOC	4D TOC	Gal. Pumped Each Hour	GPM Flow Rate
730	3.42	3.26	2.50	4.11	1.94	2.95	0.00	15-28
830					2.46	3.48	786.89	0-23
930					2.52	3.52	769.41	0-18
1030					2.51	3.51	761.70	0-16
1130	3.45	3.29	2.57		2.51	3.51	712.65	0-15
1210					2.51	3.51	478.62	0-12
	PUMP SHUT DOWN @ 1210						0.00	0
1400	3.42	3.26	2.52	4.34	2.07	3.07	0.00	8-23
1530	3.42	3.26	2.53		2.48	3.47	915.85	0-18

USED 1" SUCTION LINE

TOTAL PURGED: 4425.12

NOTE: MW-14S TPVC IS 0.08 HIGHER THAN THE TOC.

NOTE: It was requested that readings be taken every hour at MW-4D and MW4-S.

***DUE TO THE LENGTH OF TIME THE PUMP WAS RUNNING DRY, THE PUMP WAS SHUT DOWN.**

Weinsteins sump pump - Morning: **8 min**
Weinsteins sump pump - Evening: **8 min**

ZION ENVIRONMENTAL, LLC.

Wednesday, May 20, 2009

Daily Rainfall: 0.00 in.

Time	14M TOC	14S TPVC	14D TOC	4M TOC	4S TOC	4D TOC	Gal. Pumped Each Hour	GPM Flow Rate
730	3.41	3.25	2.50	4.13	1.94	2.94	0.00	20-23
830	3.42	3.26	2.57	8-12	2.50	3.52	848.51	18-20
930	3.45	3.26	2.56	8-12	2.59	3.60	1048.65	18-20
1030	3.45	3.28	2.57	9-11	2.60	3.60	837.73	16-18
1130	3.46	3.29	2.58	9-11	2.61	3.60	739.50	14-16
1230	3.46	3.29	2.58	9-11	2.61	3.61	607.04	12-14
1330	3.47	3.30	2.59	10-11	2.62	3.60	614.08	11-13
1430	3.47	3.30	2.59	10-11	2.62	3.60	510.62	10-12
1530	3.47	3.30	2.59	10-11	2.62	3.62	402.62	8-10

USED 3/4" SUCTION LINE

TOTAL PURGED: 5608.75

NOTE: MW-14S TPVC IS 0.08 HIGHER THAN THE TOC.

Weinsteins sump pump - Morning: **8 min**
Weinsteins sump pump - Evening: **8 min**