

2014 Annual Groundwater Benzene Evaluation Monitoring Summary Report

April 2015

**Tomoka Farms Road Landfill, Volusia County
Facility SW WACS No. 27540**



Submitted To:
**Florida Department of Environmental Protection
Central District**
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Prepared by:

HDR Engineering, Inc.
200 West Forsyth Street, Suite 800
Jacksonville, Florida 32202
(904) 598-8900
(904) 598-8988 fax

Table of Contents



1.0	Introduction.....	1
2.0	Evaluation Monitoring Results	2
2.1	General Chemistry	2
2.3	Organic Compounds.....	4
2.4	Benzene Spatial Distribution.....	5
3.0	Conclusions and Recommendations.....	7
4.0	Professional Certification.....	9

LIST OF TABLES

Table 1	Groundwater Analytical Parameters and Methods
Table 2	Summary Results of Field Monitored Parameters
Table 3	Summary Detected General Chemistry Parameters
Table 4	Summary of Detected Trace Metals
Table 5	Summary of Detected Volatile Organic Compounds (VOCs)

LIST OF FIGURES

Figure 1	Time Series Plot of Groundwater Dissolved Oxygen Concentrations
Figure 2	Time Series Plot of Groundwater pH Values
Figure 3	Time Series Plot of Groundwater Specific Conductivity
Figure 4	Time Series Plot of Groundwater Turbidity
Figure 5	Time Series Plot of Groundwater Ammonia-N Concentrations
Figure 6	Time Series Plot of Groundwater Chloride Concentrations
Figure 7	Time Series Plot of Groundwater Iron Concentrations
Figure 8	Time Series Plot of Groundwater Nitrate Concentrations at B45-2
Figure 9	Time Series Plot of Groundwater Sodium Concentrations
Figure 10	Time Series Plot of Groundwater TDS Concentrations
Figure 11	Time Series Plot of Detected Groundwater Barium Concentrations
Figure 12	Time Series Plot of Detected Groundwater Beryllium Concentrations
Figure 13	Time Series Plot of Detected Groundwater Chromium Concentrations
Figure 14	Time Series Plot of Detected Groundwater Lead Concentrations
Figure 15	Time Series Plot of Detected Groundwater Nickel Concentrations
Figure 16	Time Series Plot of Detected Groundwater Vanadium Concentrations
Figure 17	Time Series Plot of Detected Groundwater 1,4-Dichlorobenzene Concentrations
Figure 18	Time Series Plot of Detected Groundwater Acetone Concentrations
Figure 19	Time Series Plot of Detected Groundwater Benzene Concentrations
Figure 20	Time Series Plot of Detected Groundwater Chlorobenzene Concentrations

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- Figure 21 Time Series Plot of Detected Groundwater cis-1,2-Dichlorobenzene Concentrations
 - Figure 22 Time Series Plot of Detected Groundwater Ethylbenzene Concentrations
 - Figure 23 Time Series Plot of Detected Groundwater Toluene Concentrations
 - Figure 24 Time Series Plot of Detected Groundwater Total Xylenes Concentrations

ATTACHMENTS

Attachment 1 Groundwater Benzene Iso-concentrations Maps

- Figure 1 Benzene Iso-concentrations Map, November, Zone 4
- Figure 2 Benzene Isoconcentrations Map, November, Zone 6

Attachment 2 Groundwater Elevation and Site Maps

- Figure 1 Tomoka Farms Road Landfill Site Map
- Figure 2 Zone 1 & 2 Groundwater Potentiometric Map, Nov-2014
- Figure 3 Zone 4 Groundwater Potentiometric Map, Nov-2014
- Figure 4 Zone 6 Groundwater Potentiometric Map, Nov-2014
- Figure 5 Florida Aquifer Groundwater Potentiometric Map, Nov-2014

Attachment 3 Site Plan with Proposed Zone of Discharge Boundary

1.0 Introduction

HDR is submitting the Tomoka Farms Road Landfill (TFRLF) (SW WACS No. 27540) 2014 Annual Groundwater Benzene Evaluation Monitoring Summary Report on behalf of the Volusia County Solid Waste Division. This report summarizes the results of benzene evaluation monitoring events conducted in February, May, and November 2014. Based on recommendations from the Florida Department of Environmental Protection (FDEP) in a letter dated May 9, 2013 to Volusia County, existing wells were monitored for Appendix I parameters in 2014. Appendix II analyses were required only for the initial sampling event following any new assessment well installation. There were no new wells installed in 2014.

The benzene evaluation monitoring conducted from 2010 through 2014 included eight monitoring wells (B41-1, B43-1, B45-1, B45-2, B76-1, B77, B79-1, and B81-4). Six additional wells (B82-1, B83, B85, B86, B76-6, and B79-6) were installed on February 6 and 7, 2013 to further delineate benzene in the groundwater in accordance with a FDEP letter dated October 29, 2012.

Four additional wells (B85-6, B85-F, B87-6, and B87-F) were installed at the east boundary of the landfill in September 2013 to further define the benzene plume boundary. Wells B85-6 and B85-F were installed in a cluster with B85 and screened within Zone 6 and in uppermost strata of the Floridan aquifer, respectively. Monitoring wells B87-6 and B87-F were installed in a cluster with B87-1 and screened in Zone 6 and in uppermost strata of the Floridan aquifer, respectively.

Benzene evaluation monitoring in four monitoring wells (B41-1, B43-1, B83, and B85) was terminated after the 2014 first quarterly monitoring event in accordance with the FDEP recommendations (dated May 1, 2014).

The parameters and testing methods are listed in Table 1 of this report, and the quarterly monitoring results are presented in Tables 2 through 5 of this report.

2.0 Evaluation Monitoring Results

Eighteen benzene evaluation monitoring wells were used during the 2014 monitoring period. Fifteen wells are screened in the surficial aquifer and three wells are screened in the Floridan aquifer. The wells screened in the surficial aquifer are as follows: one in Zone 1-2 (B45-2); eight in Zone 4 (B41-1, B43-1, B45-1, B76-1, B79-1, B81-4, B82-1, and B85), and six in Zone 6 (B76-6, B77, B79-6, B85-6, B86, and B87-6). Three wells (B83, B85-F, and B87-F) were screened in the uppermost strata of the Floridan aquifer. Four wells (B41-1, B43-1, B83, and B86) were dropped from the monitoring program after the 2014 first quarterly event. In accordance with the FDEP recommendations, benzene monitoring for 2014 is conducted on a semiannual basis to coincide with the semiannual water quality compliance monitoring for the Tomoka Farms Road Landfill. The detected groundwater results for the evaluation monitoring data are provided in Table 2 through Table 5, which includes field data (Table 2), general chemistry (Table 3), metals (Table 4), and volatile organic compounds (VOCs) (Table 5). The constituents detected above the groundwater standards and the distribution of the parameters of concern is discussed in this report. The historic trends for the frequently detected parameters from 2010 through 2014 are included in the trend plots (Figures 1 through 24).

2.1 General Chemistry

Ammonia, chloride, iron, nitrate-N, pH, sodium, and total dissolved solids (TDS) were detected at concentrations above applicable primary drinking water standards (PDWS), secondary drinking water standards (SDWS) or the Groundwater Cleanup Target Level (GCTL). Each parameter is discussed in the sections below.

2.1.1 pH (Field)

Groundwater samples from the evaluation monitoring wells in the surficial aquifer generally reported to have field measured pH levels below the SDWS range (6.5 to 8.5) during the 2014 monitoring events. However, the samples collected from monitoring wells B83, B85-F, B87-6, and B87-F, which are screened in Zone 6 or Floridan aquifer, were reported to have pH levels within the SDWS range. The groundwater in the shallow surficial aquifer is naturally acidic at the TFRLF and pH levels in the surficial aquifer at the TFRLF are typically below the SDWS's lower limit. Field measured parameters including pH are displayed in Table 2, and the historic trend of the pH values is presented in Figure 2.

2.1.2 Ammonia-N

Ammonia-N was detected at concentrations above the GCTL of 2.8 milligrams per liter (mg/L) in B41-1, B79-1, B79-6, B85, and B85-6 at least once during the 2014 monitoring events. The highest ammonia-N concentration was detected at B79-6. In general, ammonia-N concentrations indicate a decreasing or stable trend over time (Figure 5).

2.1.3 Chloride

Chloride was detected at concentrations above the SDWS of 250 mg/L at B76-1, B76-6, B77, B79-1, and B79-6 at least once during the 2014 monitoring events (Table 3). The detected chloride concentrations show a decreasing or stable trend over the monitoring history (Figure 6). In a letter dated October 26, 2009, the FDEP indicated that implementation of evaluation monitoring for chloride is not required.

2.1.4 Iron

Iron was detected at concentrations above the SDWS of 300 µg/L in most of the groundwater monitoring wells at least once during the 2014 monitoring periods except at Well B83, which is screened in the Floridan aquifer (Table 3). Iron concentrations were noted to be higher in the wells screened in Zone 4 and Zone 6 than those screened in the Zone 1-2 and the Floridan aquifer. Iron concentrations in most wells appear to be decreasing over time with the exception of B76-1 (Figure 7), in which iron concentrations fluctuated over-time. The fluctuations in iron at B76-1 are likely caused by fluctuations in redox. Iron is reduced to more soluble ferrous iron (Fe^{+2}) under reducing conditions, resulting in higher iron levels in groundwater. Groundwater quality data indicate elevated iron concentrations in groundwater wells at TFRLF.

2.1.5 Nitrate-N

Nitrate-N was detected at one compliance well (B45-2) screened in Zone 1-2 at a level above the PDWS (10 mg/L) in two of the three quarterly monitoring events (Table 3). Nitrate concentrations at B45-2 indicate a decreasing trend from the peak level of 166 mg/L in November 2013 to below the PDWS (10 mg/L) in the November 2014 monitoring event (Figure 8).

2.1.6 Sodium

Sodium was detected at concentrations slightly above the PDWS of 160 mg/L at compliance wells B45-1, B76-1, B79-1, B79-6, B85-6, and B86 at least once over the evaluation monitoring periods (Table 3). The highest sodium concentration (301 mg/L) was detected at B79-1 during the February 2014 monitoring event. In general, sodium concentrations are stable with some fluctuation (Figure 9). In a letter dated October 26,

2009, the FDEP indicated that implementation of evaluation monitoring for sodium is not required.

2.1.7 TDS

TDS concentrations above the SDWS (500 mg/L) were detected in all groundwater samples except from monitoring wells B43-1, B82-1, B83, B87-6, and B87-F during the 2014 monitoring events (Table 3). TDS concentrations were stable during the 2014 monitoring periods (Figure 10). TDS has historically exceeded the SDWS at the TFRLF and is an indication of natural groundwater geochemically reduced conditions resulting in the mobilization of naturally occurring metals.

2.2 Trace Metals

Arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, nickel, silver, vanadium, and zinc (Appendix II metals) were each detected at concentrations below PDWS or SDWS at one or more monitoring wells during the 2014 evaluation monitoring events. No trace metals were detected at concentrations above the applicable groundwater standard (Table 4). Time-series plots for barium, beryllium, chromium, lead, nickel, and vanadium detections are provided in Figures 11 through 16.

2.3 Organic Compounds

Benzene was detected at concentrations above the PDWS of 1.0 µg/L in samples from nine (B45-1, B76-1, B76-6, B77, B79-1, B79-6, B81-4, B85-6, and B86) of the eighteen monitoring wells at least once in the 2014 (Table 5) monitoring events. Out of these nine wells in which benzene was detected above the PDWS, four wells are screened in Zone 4 (B45-1, B76-1, B79-1, and B81-4) and five are screened in Zone 6 (B76-6, B77, B79-6, B85-6, and B86) of the surficial aquifer. The highest benzene concentration was detected at B76-1, which is screened in Zone 4. Benzene concentrations were generally stable or decreasing in most wells with the exception of B76-1, which indicated a recent increasing trend (Figure 19). Benzene was detected only slightly above the detection limit (0.1 µg/L) in B45-12 (Zone 1-2), B41-1 (Zone 4), and B85-F (Floridan); and were not detected above the PDWS in any wells screened in the Zones 1-2 or Floridan aquifer.

The groundwater at the southern boundary of the Class III landfill near B81-4 and B86 is currently being monitored under the semiannual B5/B37 monitoring program and the B5 remediation activities approved under the Limited Scope Remedial Action Plan (LRAP) Approval Order from FDEP dated March 19, 2009.

Other Appendix I/II compounds that were detected at trace levels at least once during 2014 evaluation monitoring include 1,4-Dichlorobenzene, Acetone, Chlorobenzene, cis-

1,2-Dichlorobenzene, Ethylbenzene, Toluene, and Total Xylenes (Table 5). None of these detections are above the applicable groundwater standard.

2.4 Benzene Spatial Distribution

Benzene is the only Appendix I/II organic compound consistently detected above the PDWS (Table 5) in 2014. Wells that indicate benzene at levels above the PDWS are limited to Zone 4 and Zone 6 of the surficial aquifer (Figures 1 and 2, Attachment 1).

The spatial distribution of benzene concentrations from the November 2014 monitoring events in Zone 4 and Zone 6 of the surficial aquifer is presented in Figure 1 (Zone 4) and Figure 2 (Zone 6) in Attachment 1. Nine benzene evaluation monitoring wells (B41-1, B43-1, B45-1, B76-1, B79-1, B81-4, B82-1, and B85) are screened in Zone 4 of the surficial aquifer. Six wells (B76-6, B77, B79-6, B85-6, B86, and B87-6) are screened in Zone 6 of the surficial aquifer. These wells were installed around the Class III Landfill as in the following Table:

Well located Around Class III Landfill	Zone 4	Zone 6
North	B43-1 B45-1 B76-1 B79-1 B82-1	B77 B76-6 B87-6
East	B41-1 B79-1 B85	B79-6 B85-6
South	B81-4	B86

The historical groundwater flow direction at the site is from southwest to the northeast direction.

The highest benzene concentrations were detected at B76-1 which is screened in Zone 4 and located on the northern boundary of the Class III Landfill. Benzene concentrations at B76-1 have historically fluctuated and have recently increased during 2014 (refer to Figure 19a). Although benzene is above the PDWS at Monitoring Well B76-1, benzene was not detected at Monitoring Well B43-1, which is approximately 800 feet downgradient of B76-1 (Figure 1, Attachment 1). Benzene also was not detected at Monitoring Well B82-1, which is approximately 350 ft north to northeast of B76-1. Benzene concentrations at B45-1 (located upgradient of B76-1 where the highest concentrations are measured) indicates a decreasing trend during monitoring events in 2014 (Figure 19a). Overall, the high benzene concentrations in the vicinity of well B76-1

is unlikely to impact groundwater at the facility boundary, which is approximately 3400 feet east of monitoring well B76-1.

Benzene was detected in Surficial Aquifer Zone 6 (at wells B77 and B76-6) above the PDWS during the 2014 evaluation monitoring events (Table 5 and Figure 2, Attachment 1). The benzene concentrations at these wells (Figures 19a and b) have been generally stable (although we note some fluctuation at B76-6). Benzene was not detected above the detection limit in Monitoring Well B87-6 (located downgradient of B76-6 and B77) is approximately 1800 ft from the facility boundary (Attachment 3). Given the distance from the impacted wells to the facility boundary and the low groundwater flow velocity (<4.6 ft/year; source: Technical Report for the site submitted Aug-2014), it is unlikely that benzene will impact off-site groundwater quality.

To the east side of the Class III landfill, benzene above the PDWS was detected in one well (B79-1) in the Surficial Aquifer Zone 4. The benzene concentrations have indicated a decreasing trend from this well since 2013. It is believed that this detection is only limited to the small area since benzene was not detected in B85 (located approximately 500 feet northeast of B79-1), and benzene was below the PDWS in B41-1 (located in slightly southeast of B79-1), each screened in Zone 4 of the surficial aquifer.

Benzene was detected in Monitoring Wells B79-6 and B85-6 in Zone 6 of the surficial aquifer along the eastern boundary of the Class III landfill (Figure 2, Attachment 1). B79-6 was installed in February 2013 and has been monitored since 2013. B85-6 was installed in September 2013 and is approximately 500 feet downgradient of B79-6, and monitoring started in the fourth quarter 2013 to further delineate the extent of benzene. Benzene was detected at both B79-6 and B85-6, above the PDWS. Benzene was detected at B85-6 twice slightly above the PDWS and once slightly below the PDWS during the 2014 evaluation monitoring events. As indicated in Figure 19b, benzene concentrations at B79-6 indicate a decreasing trend.

At the southern boundary, benzene was detected in samples from B81-4 (Zone 4) and B86 (Zone 6) at least once at a level above the PDWS during the 2014 sampling events. Benzene was detected at concentrations slightly above the PDWS at well B81-4 once (during the May 2014 sampling event); however, the benzene concentration was below the PDWS during the other two 2014 monitoring event. Benzene was consistently detected at B86 above the PDWS (9.9 to 12.5 µg/L) in 2014. As detailed in the second 2014 semiannual compliance monitoring report for the landfill, the groundwater flow direction in the surficial groundwater is to the northeast (Attachment 2), which is consistent with the historic results. Therefore, monitoring well B85-6 (positioned downgradient of B86) located at the eastern boundary of the landfill can serve as the downgradient well for B86. The FDEP agreed (dated May 1, 2014) that no additional wells are required for the southern boundary of the landfill because both B81-4 and B86 are overlapped with the B5/B37 site assessment monitoring wells.

3.0 Conclusions and Recommendations

Benzene is the only Appendix I VOC that has consistently exceeded the PDWS in the benzene evaluation monitoring wells at the TFRLF. All of these exceedances have been from wells screened in Zone 4 and Zone 6 of the surficial aquifer. In general, benzene concentrations have indicated a decreasing trend over time.

Benzene was detected in the groundwater at levels above the PDWS in three areas around the Class III Facility. These detections are as follows:

- Benzene was detected above the PDWS near the northern margin of the landfill around the well cluster of B45 and B76. As detailed in the routine semiannual compliance monitoring reports, the groundwater flow direction is to the northeast across the landfill. Wells further downgradient (B43-1 and B82-1 for Zone 4 and B87-6 for Zone 6, respectively) do not indicate the presence of benzene. Therefore, the benzene delineation appears to be complete in this area, and no additional wells are recommended.
- Near the eastern margin of the landfill, benzene was detected in the groundwater in wells surrounding well cluster of B79. Two wells further downgradient– B85 and B85-6 were installed in 2014 to delineate benzene for the Zones 4 and 6 of the surficial aquifer, respectively. Benzene has not been detected above the PDWS at monitoring well B85; therefore, benzene delineation for Zone 4 appears to be complete in this area. Benzene was detected slightly above the PDWS in B85-6 (Zone 6) in 2 of the last three monitoring events. The levels detected are consistent with the November 2013 results. The benzene concentrations in B85-6 appear to be stable.
- At the southern margin of the landfill, benzene was detected in B81-4 (Zone 4) at a level slightly above the PDWS and in B86 (Zone 6) above the PDWS. The concentrations of benzene in both B81-4 and B86 indicate decreasing trends. Benzene evaluation monitoring in this area is overlapped with the B5/B37 site assessment monitoring. Currently, the TFRLF is performing B5/B37 area semiannual assessment monitoring and B5 area remedial action and evaluation monitoring for the area south of the landfill.

The following recommendations are made based on the results of the 2014 benzene evaluation monitoring and the historic results. These results indicate benzene is the only VOC detected above the PDWS. No additional Appendix I/II parameters are detected above applicable groundwater standards. Additionally, benzene concentrations generally show a decreasing trend in most wells. Based on the 2014

benzene evaluation monitoring results and the FDEP response letter dated May 01, 2014, the following recommendations are made:

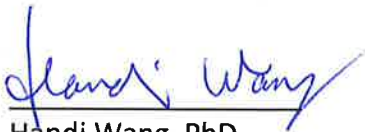
1. HDR recommends discontinuation of the Benzene Evaluation Monitoring program. As explained in the results and conclusions, benzene delineation appears to be complete in the most areas. Remaining areas already include established monitoring wells B82-1 (Zone 4), B87-6 (Zone 6), B85 (Zone 4) and B85-6 (Zone 6) which are recommended to be included into the semiannual permit required monitoring program. This will allow the facility to continue to monitor groundwater benzene levels in the remaining areas of concern:
 - In the B45/B76 cluster area Both B82-1 and B87-6 will continue to monitor downgradient in Zones 4 and 6.
 - Both B85 and B85-6 will monitor the Zones 4 and 6 downgradient groundwater quality toward the east direction of the Class III landfill.
2. The current Zone of Discharge (ZOD) is 100 ft from the edge of the solid waste, or the to property boundary, whichever is less in accordance with the current facility permit (78767-034-SO-T3. HDR recommends reestablishing the ZOD such that the revised ZOD is 200 ft downgradient of the current downgradient monitoring wells north and east of the Class III landfill. This modification conforms to the Rules (62-701.320 (18) and 62-520.465(2)(b), F.A.C.) that require:
 - Revised ZOD will not violate applicable groundwater standards in present and future potable water supplies;
 - Revised ZOD will not interfere with the existing or designated uses of contiguous waters outside a permitted mixing zone; and
 - The economic and social benefits of proposed ZOD (with larger dimensions than the existing ZOD) will outweigh the economic, environmental, and social costs resulting from the proposed larger ZOD.

Based on the above, a revised ZOD map has been prepared and is provided as Attachment 3. Note that the recommended ZOD line is within the facility boundary. The shortest distance from the proposed ZOD boundary to the facility boundary is 220 ft.

HDR understands that a separate permit modification application will be submitted to the FDEP for the ZOD change pending on the FDEP concurrence with the recommendations in this report. The permit modification request will provide a detailed discussion on the ZOD revision in accordance with the aforementioned FDEP regulations.

4.0 Professional Certification

This document has been prepared under my direction in general accordance with Chapter 62-701, Florida Solid Waste Management Facility Regulations. The information contained within this report is to the best of my knowledge and belief, true, accurate, and complete.



Handi Wang, PhD
HDR Engineering, Inc.
Sr. Environmental Scientist



Mark Roberts, P.E.
HDR Engineering, Inc.
FL License No. 54187



Tables

Table 1
Groundwater Analytical Parameters and Methods
2014 Benzene Evaluation Monitoring
Tomoka Farms Road Landfill, Volusia County

Analyte Name	Analysis Method	Monitoring Period		
		Feb-14	May-14	Oct-14
Laboratory Parameters				
Chloride	EPA 300.0 (Chloride)	X	X	X
Nitrate (N)	EPA 300.0 (Nitrate (N))	X	X	X
Sulfate	EPA 300.0 (Sulfate)	X	X	X
Ammonia (N)	EPA 350.1 No Distillation	X	X	X
Residues- Filterable (TDS)	SM18 2540 C	X	X	X
Appendix I Metals, Iron, Sodium	EPA 6010/6020	X	X	X
Mercury	EPA 1631/7470	X	X	X
1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane	EPA 8011	X	X	X
Appendix I VOCs	EPA 8260	X	X	X
Field Parameters				
Dissolved Oxygen	EPA 360.1	X	X	X
Oxidation Reduction Potential	DEP-SOP	X	X	X
pH	EPA 150.1	X	X	X
Specific Conductance	EPA 120.1	X	X	X
Temperature, Water	EPA 170.1	X	X	X
Turbidity	EPA 180.1	X	X	X
Water Level (NGVD)	DEP-SOP	X	X	X

Note: X - Indicates parameter was analyzed.

Table 2
Summary Results of Field Monitored Parameters
2014 Benzene Evaluation Monitoring
Tomoka Farms Road Landfill, Volusia County

Parameter	Well ID	Aquifer Zone	Detected Results			Standard	Units
			Feb-14	May-14	Oct-14		
Field Parameters							
Dissolved Oxygen	B41-1	4	0.7			NS	mg/L
Dissolved Oxygen	B43-1	4	0.4			NS	mg/L
Dissolved Oxygen	B45-1	4	0.42	0.37	1.55	NS	mg/L
Dissolved Oxygen	B45-2	1-2	0.26	0.37	2.04	NS	mg/L
Dissolved Oxygen	B76-1	4	0.41	0.21	2.42	NS	mg/L
Dissolved Oxygen	B76-6	6	0.44	0.2	1.85	NS	mg/L
Dissolved Oxygen	B77	6	0.55	0.22	1.98	NS	mg/L
Dissolved Oxygen	B79-1	4	0.55	0.17	2.31	NS	mg/L
Dissolved Oxygen	B79-6	6	0.34	0.16	3.79	NS	mg/L
Dissolved Oxygen	B81-4	4	0.36	0.27	0.86	NS	mg/L
Dissolved Oxygen	B82-1	4	1.2	0.2	0.52	NS	mg/L
Dissolved Oxygen	B83	FL	0.15			NS	mg/L
Dissolved Oxygen	B85	4	0.22			NS	mg/L
Dissolved Oxygen	B85-6	6	0.35	0.15	0.84	NS	mg/L
Dissolved Oxygen	B85-F	FL	0.1	0.13	0.74	NS	mg/L
Dissolved Oxygen	B86	6	0.3	0.21	2.7	NS	mg/L
Dissolved Oxygen	B87-6	6	0.45	0.23	0.43	NS	mg/L
Dissolved Oxygen	B87-F	FL	0.21	0.2	0.62	NS	mg/L
ORP	B41-1	4	-64			NS	mV
ORP	B43-1	4	-30.1			NS	mV
ORP	B45-1	4	-53.2	-26.5	-162.2	NS	mV
ORP	B45-2	1-2	22	40.9	-72.8	NS	mV
ORP	B76-1	4	-25.4	-32.9	-199.2	NS	mV
ORP	B76-6	6	-55.7	-56.2	-168.9	NS	mV
ORP	B77	6	-60.6	-15.5	176.7	NS	mV
ORP	B79-1	4	-53.7	-49.7	-145.9	NS	mV
ORP	B79-6	6	-64.5	-80.3	-156.9	NS	mV
ORP	B81-4	4	-42.1	-52.3	168.7	NS	mV
ORP	B82-1	4	-25.8	-36.1	-161.9	NS	mV
ORP	B83	FL	-33			NS	mV
ORP	B85	4	-42.9			NS	mV
ORP	B85-6	6	-41.4	-53.1	-69.9	NS	mV
ORP	B85-F	FL	-143.6	-99.1	-213.9	NS	mV
ORP	B86	6	-42.1	-70.3	-124.8	NS	mV
ORP	B87-6	6	-85.3	-102.5	-185.8	NS	mV
ORP	B87-F	FL	-72.5	-63.3	-176.6	NS	mV
pH	B41-1	4	6.30			6.5-8.5**	S.U.
pH	B43-1	4	6.02			6.5-8.5**	S.U.
pH	B45-1	4	6.06	6.07	5.83	6.5-8.5**	S.U.
pH	B45-2	1-2	5.82	6.22	5.21	6.5-8.5**	S.U.
pH	B76-1	4	5.43	5.90	5.79	6.5-8.5**	S.U.
pH	B76-6	6	6.14	6.19	6.03	6.5-8.5**	S.U.
pH	B77	6	6.11	6.16	6.03	6.5-8.5**	S.U.
pH	B79-1	4	6.24	6.27	6.17	6.5-8.5**	S.U.

Parameter	Well ID	Aquifer Zone	Detected Results			Standard	Units
			Feb-14	May-14	Oct-14		
pH	B79-6	6	6.27	6.32	6.22	6.5-8.5**	S.U.
pH	B81-4	4	6.24	6.33	6.11	6.5-8.5**	S.U.
pH	B82-1	4	6.22	6.23	6.07	6.5-8.5**	S.U.
pH	B83	FL	6.96			6.5-8.5**	S.U.
pH	B85	4	6.36			6.5-8.5**	S.U.
pH	B85-6	6	6.24	6.30	6.23	6.5-8.5**	S.U.
pH	B85-F	FL	6.89	7.09	6.83	6.5-8.5**	S.U.
pH	B86	6	6.40	6.40	6.19	6.5-8.5**	S.U.
pH	B87-6	6	6.65	6.79	6.48	6.5-8.5**	S.U.
pH	B87-F	FL	6.92	7.08	6.81	6.5-8.5**	S.U.
Specific Conductance	B41-1	4	1946			NS	µmhos/cm
Specific Conductance	B43-1	4	761			NS	µmhos/cm
Specific Conductance	B45-1	4	1520	1466	1522	NS	µmhos/cm
Specific Conductance	B45-2	1-2	1151	555	489	NS	µmhos/cm
Specific Conductance	B76-1	4	1024	1658	1870	NS	µmhos/cm
Specific Conductance	B76-6	6	1726	1764	1817	NS	µmhos/cm
Specific Conductance	B77	6	1795	1753	1881	NS	µmhos/cm
Specific Conductance	B79-1	4	2841	2835	2738	NS	µmhos/cm
Specific Conductance	B79-6	6	2944	2905	2675	NS	µmhos/cm
Specific Conductance	B81-4	4	620	818	768	NS	µmhos/cm
Specific Conductance	B82-1	4	359	400	4.09	NS	µmhos/cm
Specific Conductance	B83	FL	584			NS	µmhos/cm
Specific Conductance	B85	4	1513			NS	µmhos/cm
Specific Conductance	B85-6	6	1910	2154	2192	NS	µmhos/cm
Specific Conductance	B85-F	FL	730	745	772	NS	µmhos/cm
Specific Conductance	B86	6	1775	2107	2069	NS	µmhos/cm
Specific Conductance	B87-6	6	530	544	591	NS	µmhos/cm
Specific Conductance	B87-F	FL	604	607	589	NS	µmhos/cm
Temperature	B41-1	4	21.3			NS	Deg. C
Temperature	B43-1	4	20.8			NS	Deg. C
Temperature	B45-1	4	21.35	21.9	22.78	NS	Deg. C
Temperature	B45-2	1-2	19.2	21.73	23.9	NS	Deg. C
Temperature	B76-1	4	21.74	23.54	23.84	NS	Deg. C
Temperature	B76-6	6	21.76	23.46	23.57	NS	Deg. C
Temperature	B77	6	21.73	22.32	22.96	NS	Deg. C
Temperature	B79-1	4	22.01	22.98	23.04	NS	Deg. C
Temperature	B79-6	6	21.43	22.97	23.13	NS	Deg. C
Temperature	B81-4	4	20.52	22.34	22.93	NS	Deg. C
Temperature	B82-1	4	23.1	24.24	27.77	NS	Deg. C
Temperature	B83	FL	22.76			NS	Deg. C
Temperature	B85	4	22.2			NS	Deg. C
Temperature	B85-6	6	22.75	23.12	22.62	NS	Deg. C
Temperature	B85-F	FL	22.3	22.95	22.73	NS	Deg. C
Temperature	B86	6	21.49	22.65	22.05	NS	Deg. C
Temperature	B87-6	6	20.53	23.08	23.53	NS	Deg. C
Temperature	B87-F	FL	26.91	23.2	23.12	NS	Deg. C
Turbidity	B41-1	4	2.75			NS	NTU
Turbidity	B43-1	4	4.1			NS	NTU
Turbidity	B45-1	4	1.86	1.39	7.7	NS	NTU
Turbidity	B45-2	1-2	4.62	4.6	17.9	NS	NTU

Parameter	Well ID	Aquifer Zone	Detected Results			Standard	Units
			Feb-14	May-14	Oct-14		
Turbidity	B76-1	4	2.13	0.81	4.15	NS	NTU
Turbidity	B76-6	6	1.37	0.64	1.48	NS	NTU
Turbidity	B77	6	2.71	0.45	9.45	NS	NTU
Turbidity	B79-1	4	0.69	5.72	1.31	NS	NTU
Turbidity	B79-6	6	1.03	0.65	1.09	NS	NTU
Turbidity	B81-4	4	2.89	0.23	6.83	NS	NTU
Turbidity	B82-1	4	10.27	2.33	8.27	NS	NTU
Turbidity	B83	FL	0.21			NS	NTU
Turbidity	B85	4	3.25			NS	NTU
Turbidity	B85-6	6	0.84	1.75	8.11	NS	NTU
Turbidity	B85-F	FL	1.09	0.79	0.64	NS	NTU
Turbidity	B86	6	1.86	0.94	0.7	NS	NTU
Turbidity	B87-6	6	1.25	0.87	6.23	NS	NTU
Turbidity	B87-F	FL	0.3	0.11	0.34	NS	NTU

Note:

** - Secondary Drinking Water Standard (620-520 F.A.C.);

NS - No Standard;

Bold value indicates that the result is above the standard;

- Shaded cell indicates that monitoring was not required and was not performed.

Table 3
Summary of Detected General Chemistry Parameters
2014 Benzene Evaluation Monitoring
Tomoka Farms Road Landfill, Volusia County

Parameter	Well ID	Aquifer Zone	Detected Results			Standard	Units
			Feb-14	May-14	Oct-14		
Ammonia (N)	B41-1	4	52.7			2.8***	mg/L
Ammonia (N)	B43-1	4	1.7			2.8***	mg/L
Ammonia (N)	B45-1	4	0.037 I	0.065 I	0.15	2.8***	mg/L
Ammonia (N)	B45-2	1-2	<0.02	<0.02	0.057	2.8***	mg/L
Ammonia (N)	B76-1	4	0.072	0.069	0.2	2.8***	mg/L
Ammonia (N)	B76-6	6	0.077	0.082	0.19	2.8***	mg/L
Ammonia (N)	B77	6	0.091	0.088	0.19	2.8***	mg/L
Ammonia (N)	B79-1	4	42	44.4	51.6	2.8***	mg/L
Ammonia (N)	B79-6	6	58.3	56.4	54.3	2.8***	mg/L
Ammonia (N)	B81-4	4	0.1	0.11	0.16	2.8***	mg/L
Ammonia (N)	B82-1	4	0.07	0.082	0.12	2.8***	mg/L
Ammonia (N)	B83	FL	0.29			2.8***	mg/L
Ammonia (N)	B85	4	8.9			2.8***	mg/L
Ammonia (N)	B85-6	6	8.3	7	12.3	2.8***	mg/L
Ammonia (N)	B85-F	FL	0.25	0.29	0.38	2.8***	mg/L
Ammonia (N)	B86	6	0.14	0.14	0.37	2.8***	mg/L
Ammonia (N)	B87-6	6	0.097	0.073	<0.02	2.8***	mg/L
Ammonia (N)	B87-F	FL	0.32	0.33	0.4	2.8***	mg/L
Chloride	B41-1	4	141			250**	mg/L
Chloride	B43-1	4	94.3			250**	mg/L
Chloride	B45-1	4	170	200	22.6	250**	mg/L
Chloride	B45-2	1-2	53.8	43.3	105	250**	mg/L
Chloride	B76-1	4	258	326	342	250**	mg/L
Chloride	B76-6	6	265	288	284	250**	mg/L
Chloride	B77	6	257	297	286	250**	mg/L
Chloride	B79-1	4	338	325	347	250**	mg/L
Chloride	B79-6	6	325	320	324	250**	mg/L
Chloride	B81-4	4	86.9	106	94.6	250**	mg/L
Chloride	B82-1	4	34	43.4	40	250**	mg/L
Chloride	B83	FL	19.7			250**	mg/L
Chloride	B85	4	115			250**	mg/L
Chloride	B85-6	6	171	114	279	250**	mg/L
Chloride	B85-F	FL	55.6	63.4	69.4	250**	mg/L
Chloride	B86	6	173	198	178	250**	mg/L
Chloride	B87-6	6	23.8	28.1	25	250**	mg/L
Chloride	B87-F	FL	33.8	38.9	34.3	250**	mg/L
Iron	B41-1	4	18,100			300**	µg/L
Iron	B43-1	4	28,500			300**	µg/L
Iron	B45-1	4	45,300	43,400	46,100	300**	µg/L
Iron	B45-2	1-2	536	282	6,310	300**	µg/L
Iron	B76-1	4	41,900	55,700	61,000	300**	µg/L
Iron	B76-6	6	32,600	33,400	32,200	300**	µg/L
Iron	B77	6	35,600	34,800	35,700	300**	µg/L
Iron	B79-1	4	25,300	26,400	28,300	300**	µg/L
Iron	B79-6	6	38,500	36,700	35,600	300**	µg/L

Parameter	Well ID	Aquifer Zone	Detected Results			Standard	Units
			Feb-14	May-14	Oct-14		
Iron	B81-4	4	10,100	10,300	9,990	300**	µg/L
Iron	B82-1	4	8,600	11,000	11,600	300**	µg/L
Iron	B83	FL	30.5 I			300**	µg/L
Iron	B85	4	5,630			300**	µg/L
Iron	B85-6	6	7,760	11,400	11,900	300**	µg/L
Iron	B85-F	FL	558	436	461	300**	µg/L
Iron	B86	6	17,300	20,900	19,400	300**	µg/L
Iron	B87-6	6	3,310	2,930	3,630	300**	µg/L
Iron	B87-F	FL	456	177	125	300**	µg/L
Nitrate (N)	B45-2	1-2	112 Q	29.8	2.7	10*	mg/L
Nitrate (N)	B85	4	0.66			10*	mg/L
Sodium	B41-1	4	145			160*	mg/L
Sodium	B43-1	4	79.5			160*	mg/L
Sodium	B45-1	4	229	232	225	160*	mg/L
Sodium	B45-2	1-2	55.8	32.5	32	160*	mg/L
Sodium	B76-1	4	80.7	189	219	160*	mg/L
Sodium	B76-6	6	120	132	118	160*	mg/L
Sodium	B77	6	142	140	139	160*	mg/L
Sodium	B79-1	4	301	278	274	160*	mg/L
Sodium	B79-6	6	293	285	257	160*	mg/L
Sodium	B81-4	4	72.5	80.4	78.6	160*	mg/L
Sodium	B82-1	4	13.6	13.8	13.3	160*	mg/L
Sodium	B83	FL	17.1			160*	mg/L
Sodium	B85	4	97.1			160*	mg/L
Sodium	B85-6	6	143	170	182	160*	mg/L
Sodium	B85-F	FL	33.6	32.7	33.6	160*	mg/L
Sodium	B86	6	228	181	184	160*	mg/L
Sodium	B87-6	6	24.3	23.9	23.8	160*	mg/L
Sodium	B87-F	FL	28.1	27	26.8	160*	mg/L
Sulfate	B41-1	4	96.8			250**	mg/L
Sulfate	B43-1	4	41.5			250**	mg/L
Sulfate	B45-1	4	<2.5	<2.5	7.3	250**	mg/L
Sulfate	B45-2	1-2	39.9	41.2	37.3	250**	mg/L
Sulfate	B82-1	4	27.5	37	43.5	250**	mg/L
Sulfate	B85	4	11.1			250**	mg/L
Sulfate	B87-6	6	17.8	22	23.9	250**	mg/L
TDS	B41-1	4	1180			500**	mg/L
TDS	B43-1	4	440			500**	mg/L
TDS	B45-1	4	924	970	1060	500**	mg/L
TDS	B45-2	1-2	1050	469	424	500**	mg/L
TDS	B76-1	4	844	1100	1170	500**	mg/L
TDS	B76-6	6	1250	1250	1230	500**	mg/L
TDS	B77	6	1240	1300	1290	500**	mg/L
TDS	B79-1	4	1550	1680	1510	500**	mg/L
TDS	B79-6	6	1550	1590	1620	500**	mg/L
TDS	B81-4	4	435	490	511	500**	mg/L
TDS	B82-1	4	263	300	338	500**	mg/L
TDS	B83	FL	364			500**	mg/L
TDS	B85	4	956			500**	mg/L
TDS	B85-6	6	1170	1360	1390	500**	mg/L

Parameter	Well ID	Aquifer Zone	Detected Results			Standard	Units
			Feb-14	May-14	Oct-14		
TDS	B85-F	FL	458	493	515	500**	mg/L
TDS	B86	6	1330	1390	1370	500**	mg/L
TDS	B87-6	6	358	357	413	500**	mg/L
TDS	B87-F	FL	378	370	378	500**	mg/L

Note:

* - Primary Drinking Water Standard (62-520 F.A.C.);

** - Secondary Drinking Water Standard (620-520 F.A.C.);


*** - Groundwater Cleanup Target Level (62-777 F.A.C.);

Bold value indicates that the result is above the standard;

I - Analyte detected below the quantitation limit;

Q - Sample held beyond the accepted holding time;

< -The parameter was detected below the detection limit (value);

 - Shaded cell indicates that monitoring was not required and was not performed;

Those wells with parameters not detected above the Detection Limits are not listed.

Table 4
Summary of Detected Trace Metals
2014 Benzene Evaluation Monitoring
Tomoka Farms Road Landfill, Volusia County

Parameter	Well ID	Aquifer Zone	Detected Results			Standard	Units
			Feb-14	May-14	Oct-14		
Arsenic	B45-1	4	5.3 l	5.8 l	<5	10*	µg/L
Arsenic	B76-1	4	<5	5.3 l	<5	10*	µg/L
Arsenic	B85-6	6	5.3 l	<5	<5	10*	µg/L
Barium	B41-1	4	316			2000*	µg/L
Barium	B43-1	4	170			2000*	µg/L
Barium	B45-1	4	156	143	158	2000*	µg/L
Barium	B45-2	1-2	104	34.5	77	2000*	µg/L
Barium	B76-1	4	127	214	231	2000*	µg/L
Barium	B76-6	6	112	124	112	2000*	µg/L
Barium	B77	6	116	115	117	2000*	µg/L
Barium	B79-1	4	155	140	131	2000*	µg/L
Barium	B79-6	6	138	140	131	2000*	µg/L
Barium	B81-4	4	70.8	68.7	65.9	2000*	µg/L
Barium	B82-1	4	38.5	41.6	44.3	2000*	µg/L
Barium	B83	FL	19.6			2000*	µg/L
Barium	B85	4	66.3			2000*	µg/L
Barium	B85-6	6	68.2	69.4	68.4	2000*	µg/L
Barium	B85-F	FL	19.9	21.6	22	2000*	µg/L
Barium	B86	6	154	166	158	2000*	µg/L
Barium	B87-6	6	24.6	25.4	25	2000*	µg/L
Barium	B87-F	FL	17.6	18.5	18.2	2000*	µg/L
Beryllium	B45-2	1-2	<0.5	<0.5	0.5 l	4*	µg/L
Cadmium	B79-6	6	0.8 l	<0.5	<0.5	5*	µg/L
Chromium	B41-1	4	5 l			100*	µg/L
Chromium	B45-2	1-2	<2.5	<2.5	4.5 l	100*	µg/L
Chromium	B85	4	2.9 l			100*	µg/L
Chromium	B85-6	6	<2.5	<2.5	2.5 l	100*	µg/L
Cobalt	B45-2	1-2	<0.5	<0.5	20.6	140***	µg/L
Cobalt	B86	6	<0.5	<0.5	1.4	140***	µg/L
Copper	B41-1	4	2.7 l			1000**	µg/L
Copper	B43-1	4	4.1 l			1000**	µg/L
Copper	B45-1	4	4.9 l	4 l	2.6 l	1000**	µg/L
Copper	B76-1	4	5.3	5.1	3.4 l	1000**	µg/L
Copper	B76-6	6	4 l	3.4 l	<2.5	1000**	µg/L
Copper	B77	6	4.5 l	3.8 l	<2.5	1000**	µg/L
Copper	B79-1	4	3.7 l	<2.5	2.8 l	1000**	µg/L
Copper	B79-6	6	5.1	<2.5	3.3 l	1000**	µg/L
Copper	B85-6	6	2.6 l	<2.5	2.7 l	1000**	µg/L
Copper	B86	6	3.3 l	<2.5	2.7 l	1000**	µg/L

Parameter	Well ID	Aquifer Zone	Detected Results			Standard	Units
			Feb-14	May-14	Oct-14		
Nickel	B45-2	1-2	2.7 I	<2.5	23.9	100*	µg/L
Silver	B76-1	4	<2.5	<2.5	3.2 I	6.5-8.5	µg/L
Vanadium	B41-1	4	8.6 I			49***	µg/L
Vanadium	B45-2	1-2	<5	<5	5.1 I	49***	µg/L
Vanadium	B76-1	4	<5	<5	5.5 I	49***	µg/L
Vanadium	B82-1	4	<5	5.8 I	7.4 I	49***	µg/L
Vanadium	B85-6	6	<5	5.5 I	6.2 I	49***	µg/L
Zinc	B41-1	4	23.1			5000**	µg/L
Zinc	B43-1	4	22.5			5000**	µg/L
Zinc	B45-1	4	21.2	<10	<10	5000**	µg/L
Zinc	B45-2	1-2	22.5	<10	41.6	5000**	µg/L
Zinc	B76-1	4	25.3	<10	<10	5000**	µg/L
Zinc	B76-6	6	23.8	<10	<10	5000**	µg/L
Zinc	B77	6	24.6	<10	<10	5000**	µg/L
Zinc	B79-1	4	22.8	<10	<10	5000**	µg/L
Zinc	B79-6	6	22.6	<10	15.8 I	5000**	µg/L
Zinc	B81-4	4	22.3	<10	<10	5000**	µg/L
Zinc	B82-1	4	22			5000**	µg/L
Zinc	B83	FL	24.2			5000**	µg/L
Zinc	B85	4	21.2			5000**	µg/L
Zinc	B85-6	6	27.8	<10	<10	5000**	µg/L
Zinc	B85-F	FL	46.9	<10	<10	5000**	µg/L
Zinc	B86	6	22.1	<10	<10	5000**	µg/L

Note: * - Primary Drinking Water Standard (62-520 F.A.C.);

** - Secondary Drinking Water Standard (620-520 F.A.C.);

*** - Groundwater Cleanup Target Level (62-777 F.A.C.);

NS - No Standard;

Bold value indicates that the result is above the standard;

I - Analyte detected below the quantitation limit;

< - The parameter was not detected above the detection limit (value);

- Shaded cell indicates that monitoring was not required and was not performed.

Table 5
Summary of Detected Volatile Organic Compounds (VOCs)
2014 Benzene Evaluation Monitoring
Tomoka Farm Road Landfill, Volusia County

Parameter	Well ID	Aquifer Zone	Detected Results			Standard	Units
			Feb-14	May-14	Oct-14		
1,4-Dichlorobenzene	B76-1	4	<0.5	0.69 l	2.3	75*	µg/L
1,4-Dichlorobenzene	B79-6	6	0.65 l	0.58 l	<0.5	75*	µg/L
1,4-Dichlorobenzene	B85	4	0.63			75*	µg/L
1,4-Dichlorobenzene	B85-6	6	0.67 l	0.69 l	<0.5	75*	µg/L
Acetone	B79-1	4	<10	14.1 l	<10	6300***	µg/L
Benzene	B41-1	4	0.53 l			1*	µg/L
Benzene	B45-1	4	11.3	10.5	10.3	1*	µg/L
Benzene	B45-2	1-2	0.11 l	<0.1	0.38 l	1*	µg/L
Benzene	B76-1	4	15.3	21.2	30.8	1*	µg/L
Benzene	B76-6	6	13.3	11.8	11.9	1*	µg/L
Benzene	B77	6	6.1	5.5	5.2	1*	µg/L
Benzene	B79-1	4	8.7	7.1	6.7	1*	µg/L
Benzene	B79-6	6	7	5.4	6	1*	µg/L
Benzene	B81-4	4	0.88 l	1.1	0.93 l	1*	µg/L
Benzene	B85-6	6	0.8 l	2.1	2.4	1*	µg/L
Benzene	B85-F	FL	<0.1	0.1 l	<0.1	1*	µg/L
Benzene	B86	6	12.5	11	9.9	1*	µg/L
Chlorobenzene	B41-1	4	4.5			100*	µg/L
Chlorobenzene	B43-1	4	1.2			100*	µg/L
Chlorobenzene	B45-1	4	6	6.1	5.9	100*	µg/L
Chlorobenzene	B76-1	4	2.9	4.7	6.9	100*	µg/L
Chlorobenzene	B76-6	6	2.9	2.6	3.2	100*	µg/L
Chlorobenzene	B77	6	1.9	1.8	1.7	100*	µg/L
Chlorobenzene	B79-1	4	7.3	6.6	7.6	100*	µg/L
Chlorobenzene	B79-6	6	7.7	6.7	6.8	100*	µg/L
Chlorobenzene	B81-4	4	0.52 l	0.8 l	0.76 l	100*	µg/L
Chlorobenzene	B85	4	2.5			100*	µg/L
Chlorobenzene	B85-6	6	2.4	2.6	3.4	100*	µg/L
Chlorobenzene	B86	6	9.2	7	6.6	100*	µg/L
cis-1,2-Dichloroethene	B76-1	4	0.87 l	<0.5	<0.5	70*	µg/L
cis-1,2-Dichloroethene	B76-6	6	<0.5	<0.5	1.4	70*	µg/L
Ethylbenzene	B76-1	4	0.6 l	0.6 l	0.65 l	700*	µg/L
Toluene	B76-1	4	0.56 l	0.57 l	<0.5	1.13	µg/L
Toluene	B77	6	0.84 l	0.79 l	0.78 l	2.41	µg/L
Toluene	B79-6	6	0.54 l	<0.5	<0.5	0.54	µg/L
Xylenes- Total	B41-1	4	0.59 l			20**	µg/L
Xylenes- Total	B45-1	4	3	2.3	2.4	20**	µg/L
Xylenes- Total	B76-1	4	2.7	3.1	3.2	20**	µg/L
Xylenes- Total	B76-6	6	2.1	1.8	1.3	20**	µg/L
Xylenes- Total	B77	6	4.3	3.3	3.2	20**	µg/L
Xylenes- Total	B79-1	4	3.2	2.7	2	20**	µg/L

Parameter	Well ID	Aquifer Zone	Detected Results			Standard	Units
			Feb-14	May-14	Oct-14		
Xylenes- Total	B79-6	6	3.3	2.6	1.9	20**	µg/L
Xylenes- Total	B85-6	6	0.78 I	1	<0.5	20**	µg/L
Xylenes- Total	B86	6	1.1	0.83 I	0.62 I	20**	µg/L

Note:

* - Primary Drinking Water Standard (62-520 F.A.C.);

** - Secondary Drinking Water Standard (620-520 F.A.C.);

*** - Groundwater Cleanup Target Level (62-777 F.A.C.);

Bold value indicates that the result is above the standard;

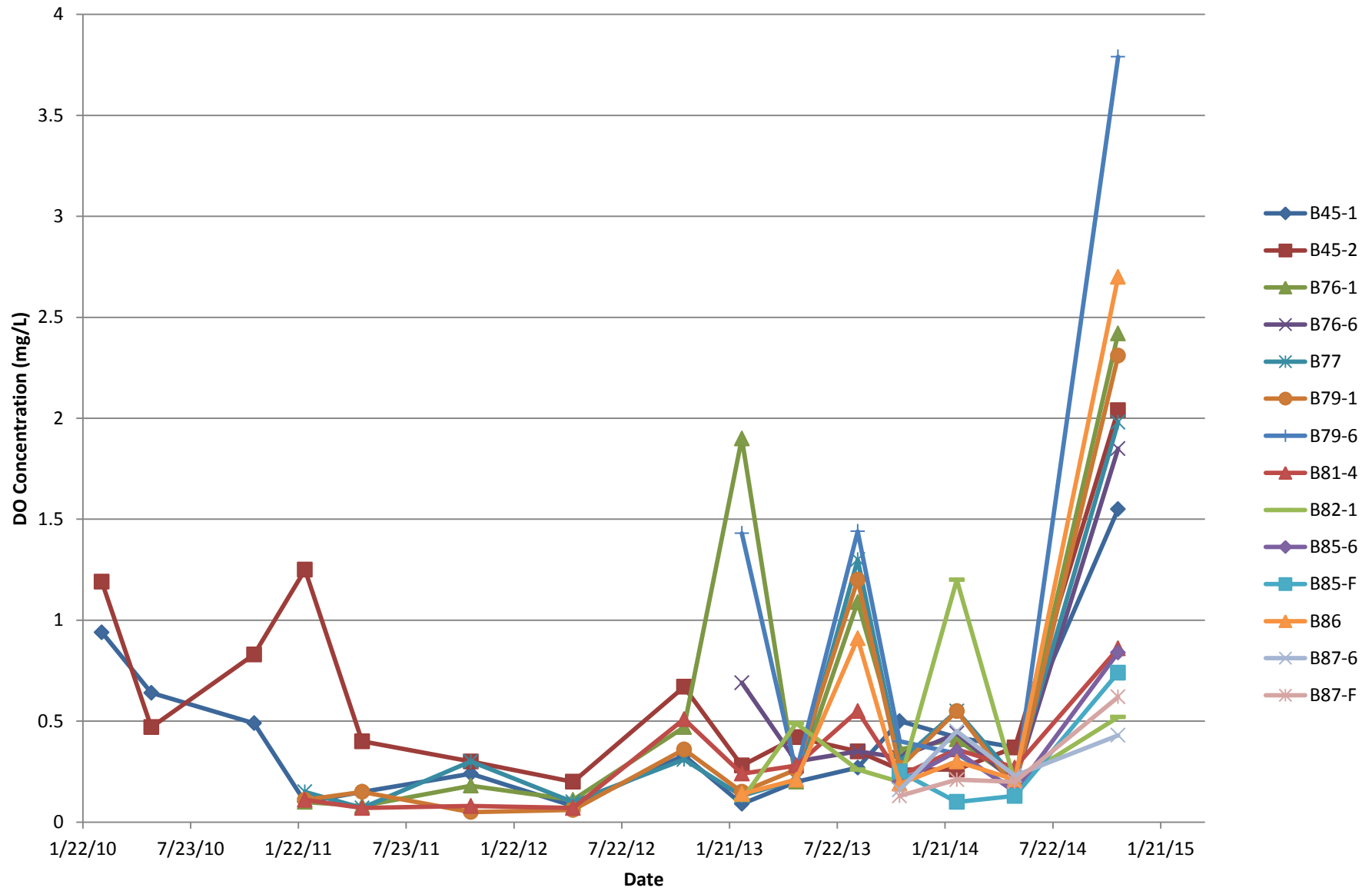
I - Analyte detected below the quantitation limit;

< - The parameter was not detected above the detection limit (value);

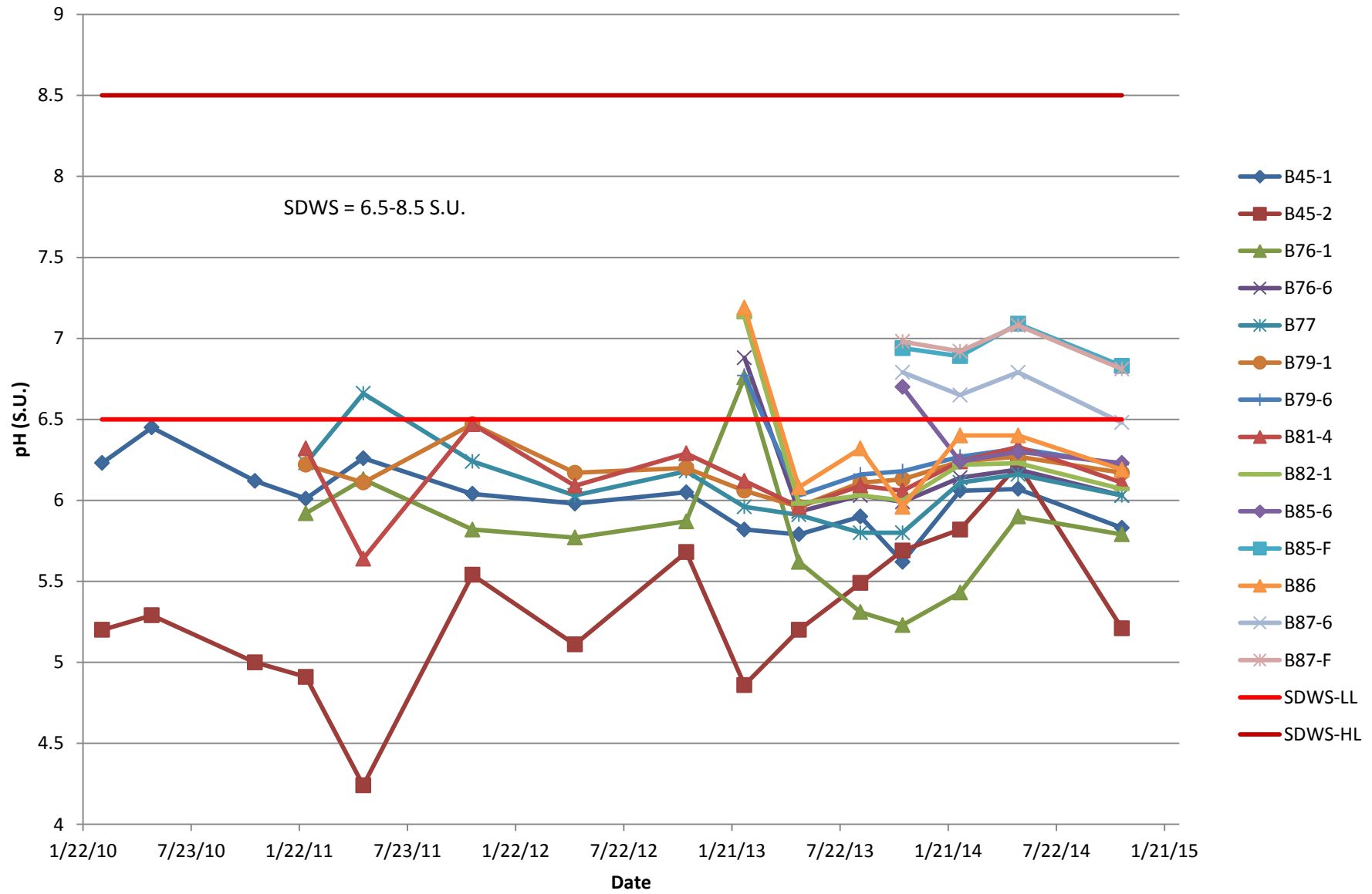
- Shaded cell indicates that monitoring was not required and was not performed.

Figures (Time Series Plots)

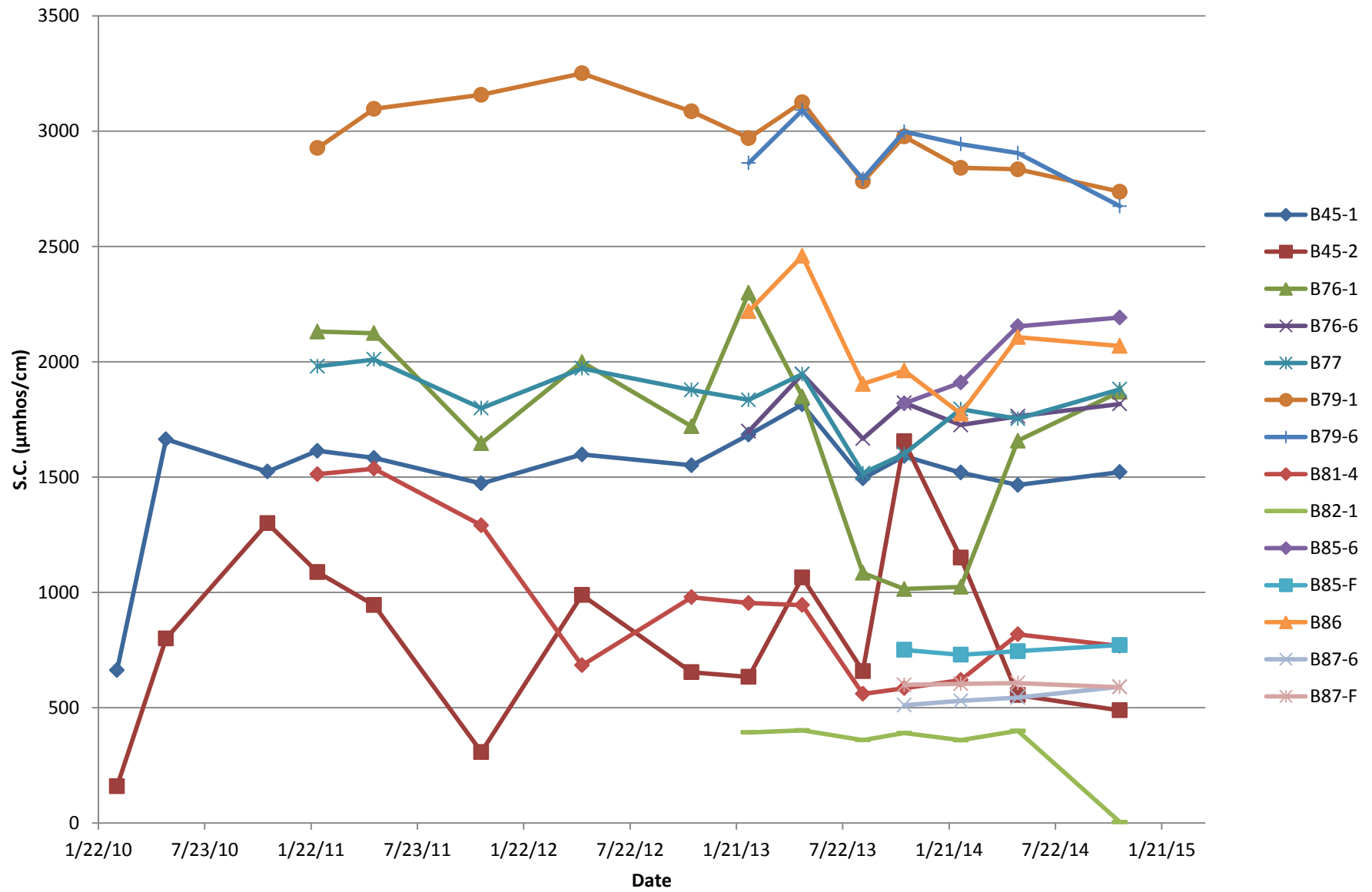
**Figure 1 - Time Series Plots of Groundwater Dissolved Oxygen Concentrations
Tomoka Farms Road Landfill**



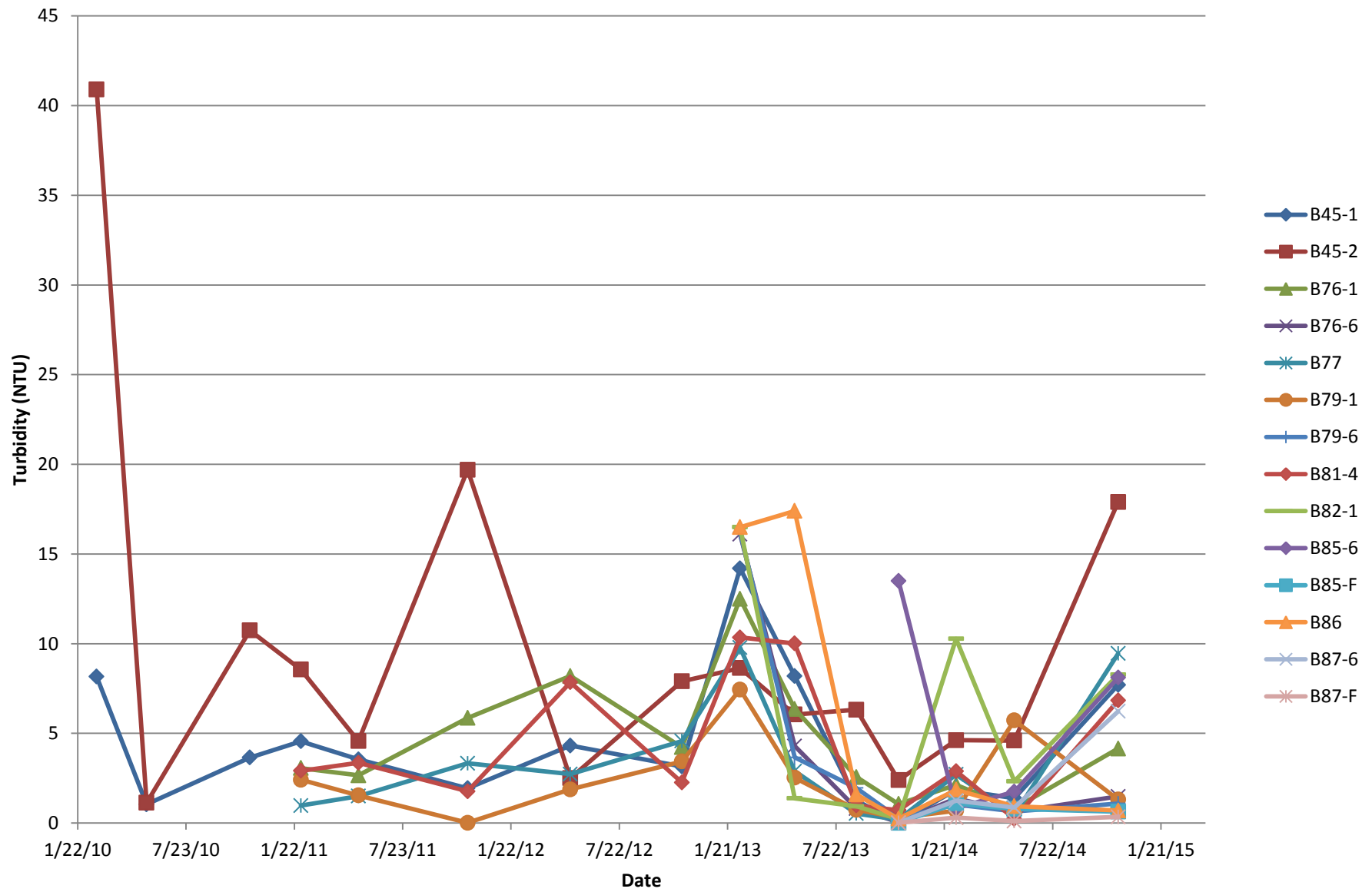
**Figure 2 - Time Series Plots of Groundwater pH Values
Tomoka Farms Road Landfill**



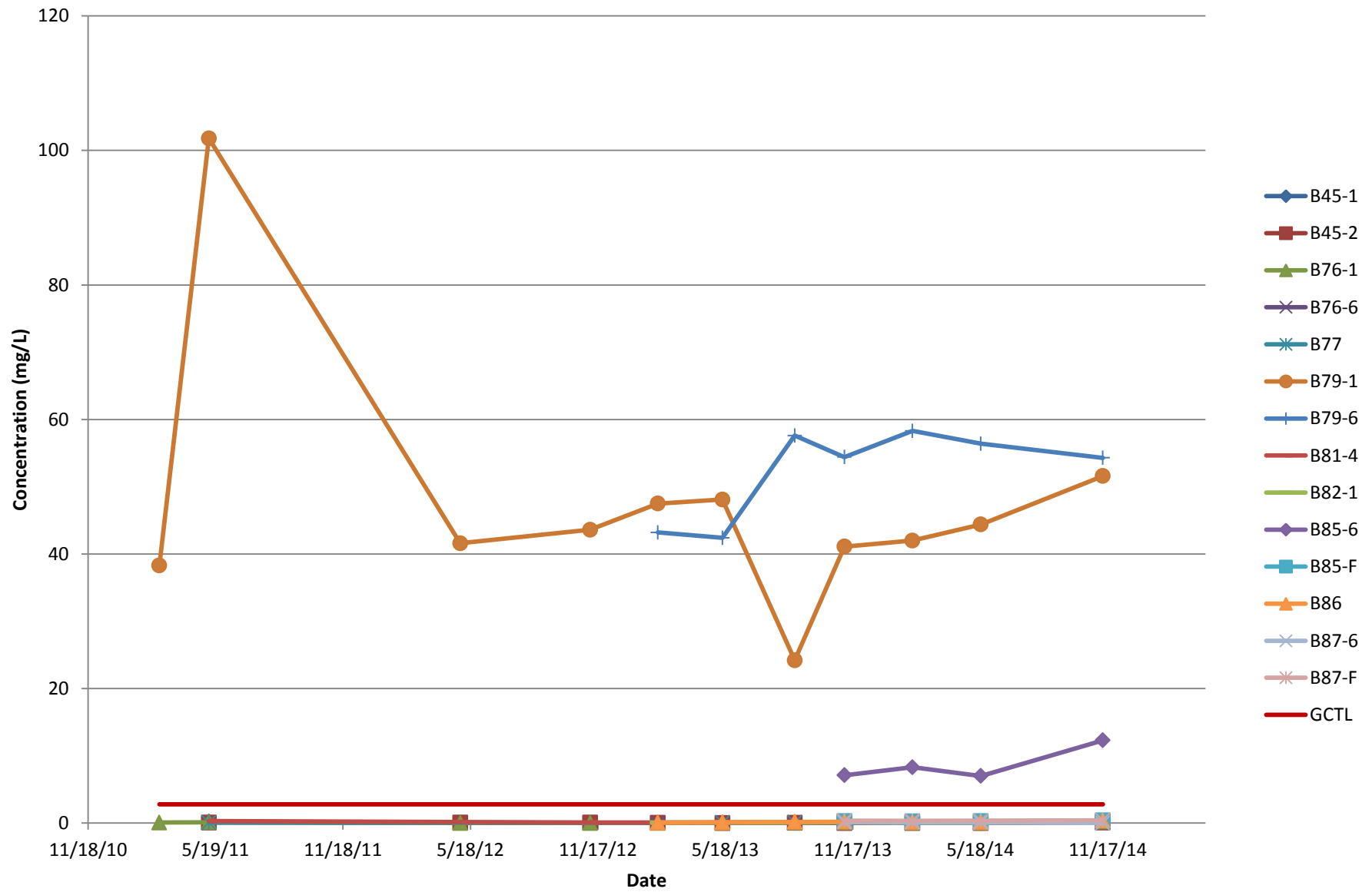
**Figure 3 - Time Series Plots of Groundwater Specific Conductivity
Tomoka Farms Road Landfill**



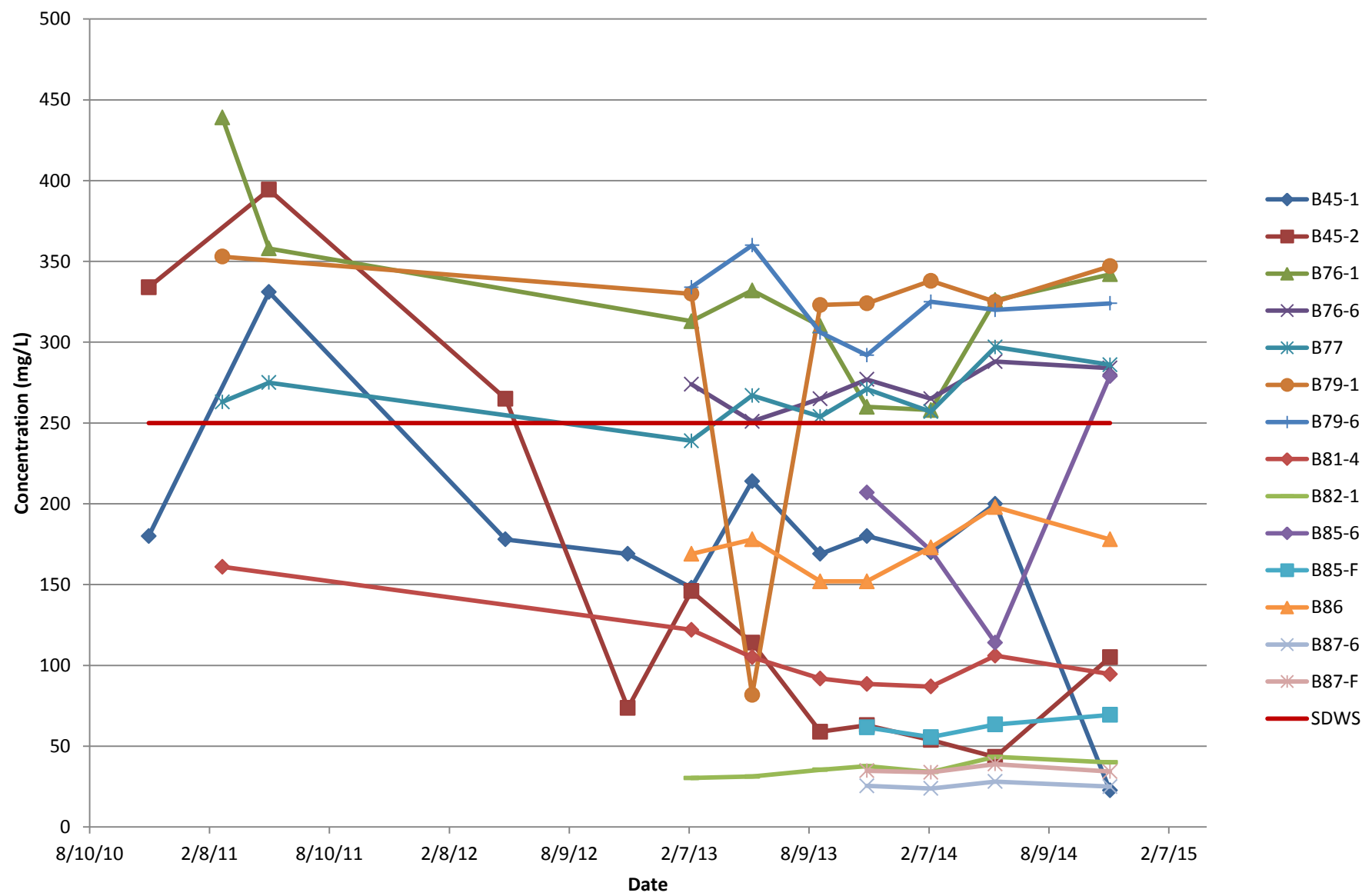
**Figure 4 - Time Series Plots of Groundwater Turbidity
Tomoka Farms Road Landfill**



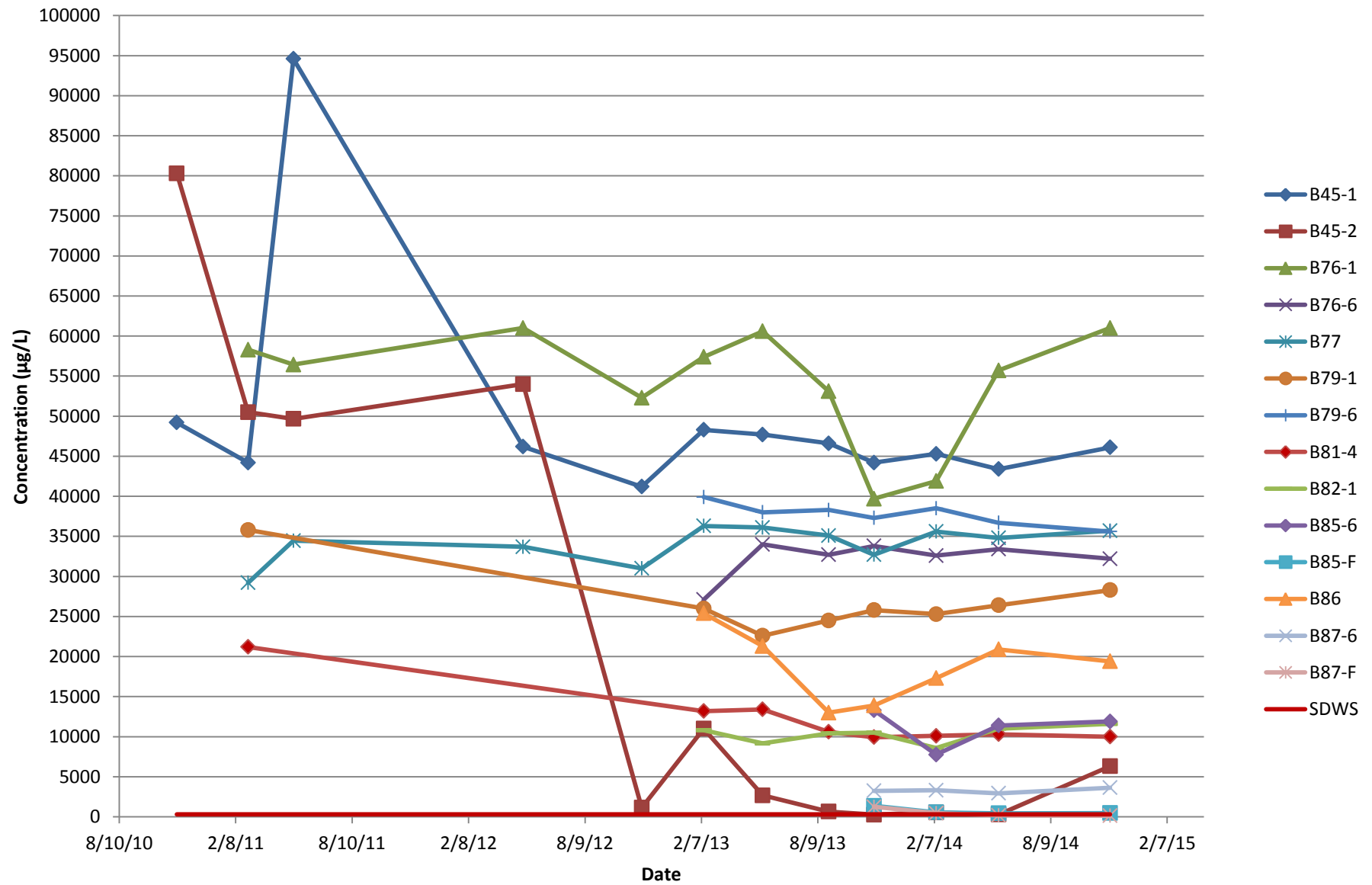
**Figure 5 - Time Series Plots of Groundwater Ammonia-N Concentrations
Tomoka Farms Road Landfill**



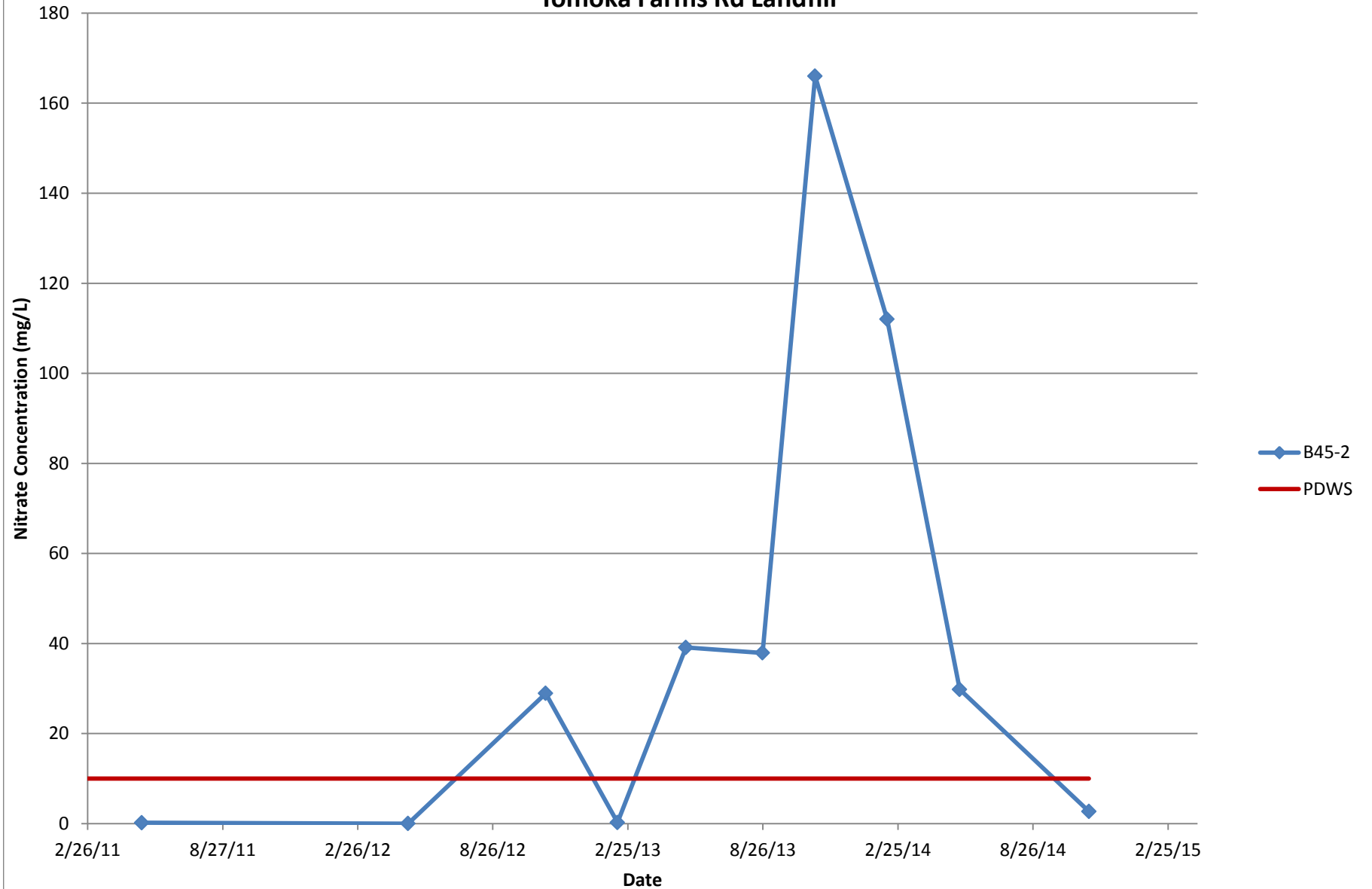
**Figure 6 - Time Series Plots of Groundwater Chloride Concentrations
Tomoka Farms Road Landfill**



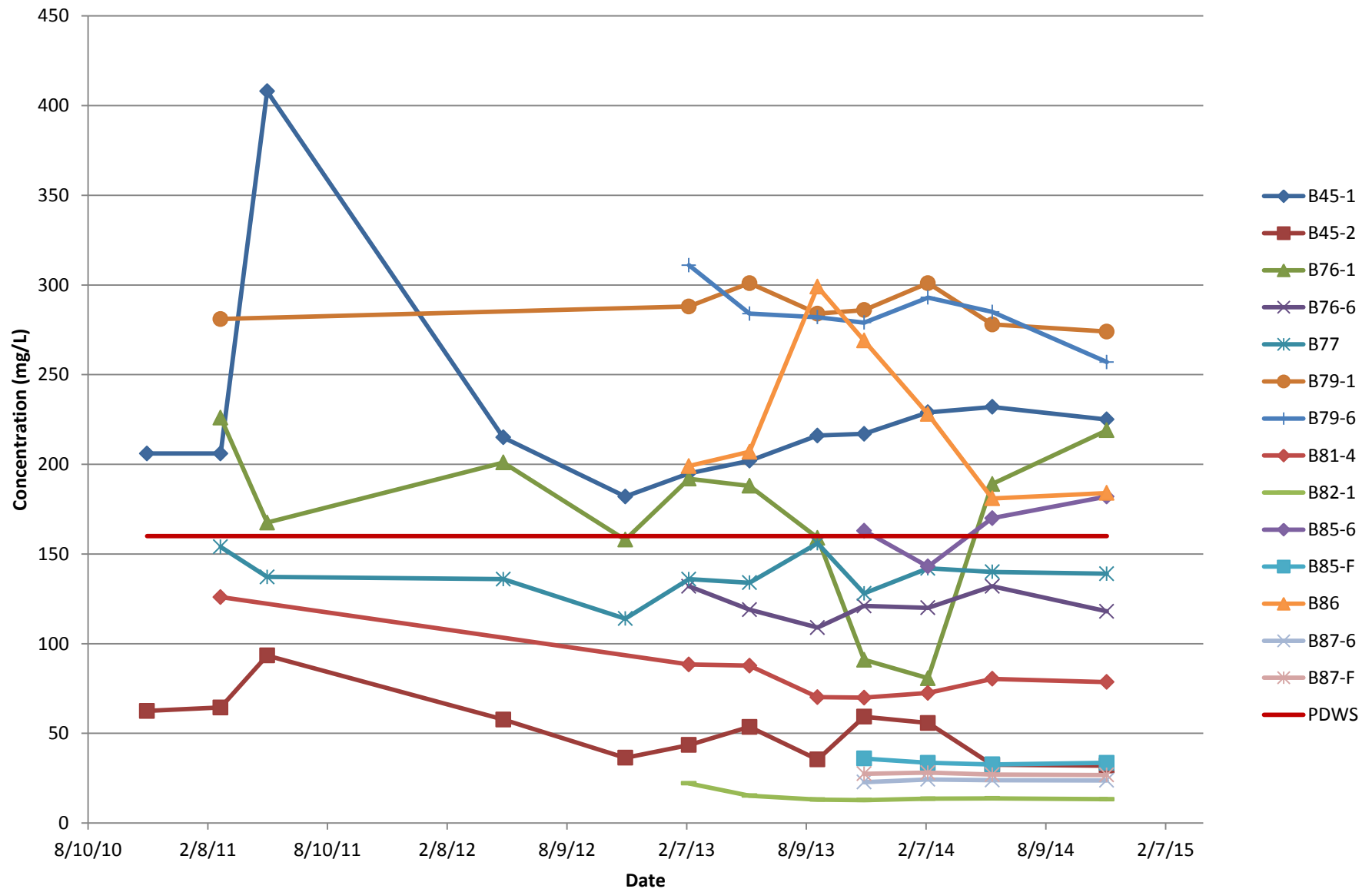
**Figure 7 - Time Series Plots of Groundwater Iron Concentrations
Tomoka Farms Road Landfill**



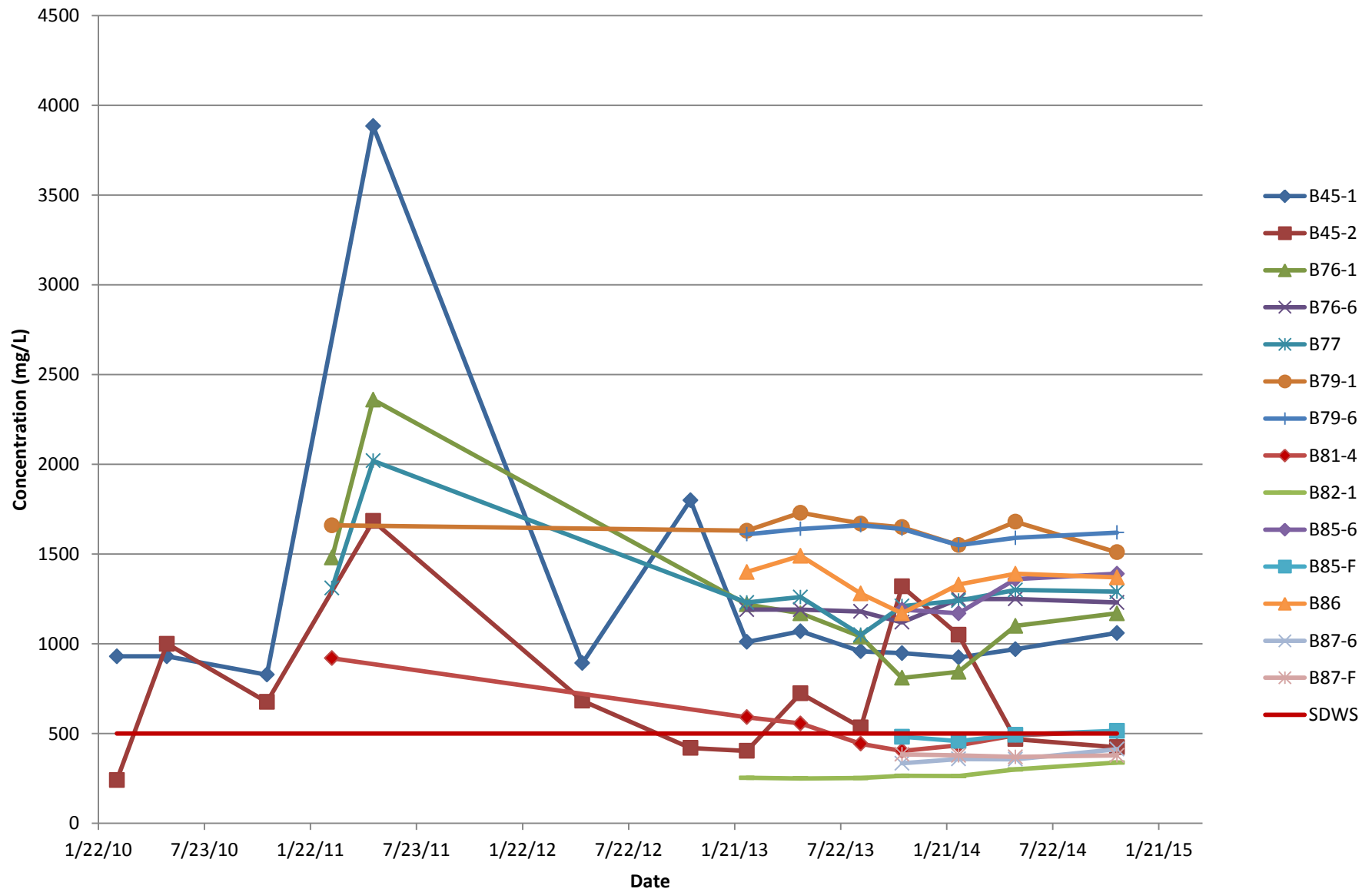
**Figure 8 - Time Series Plot of Groundwater Nitrate Concentrations at B45-2
Tomoka Farms Rd Landfill**



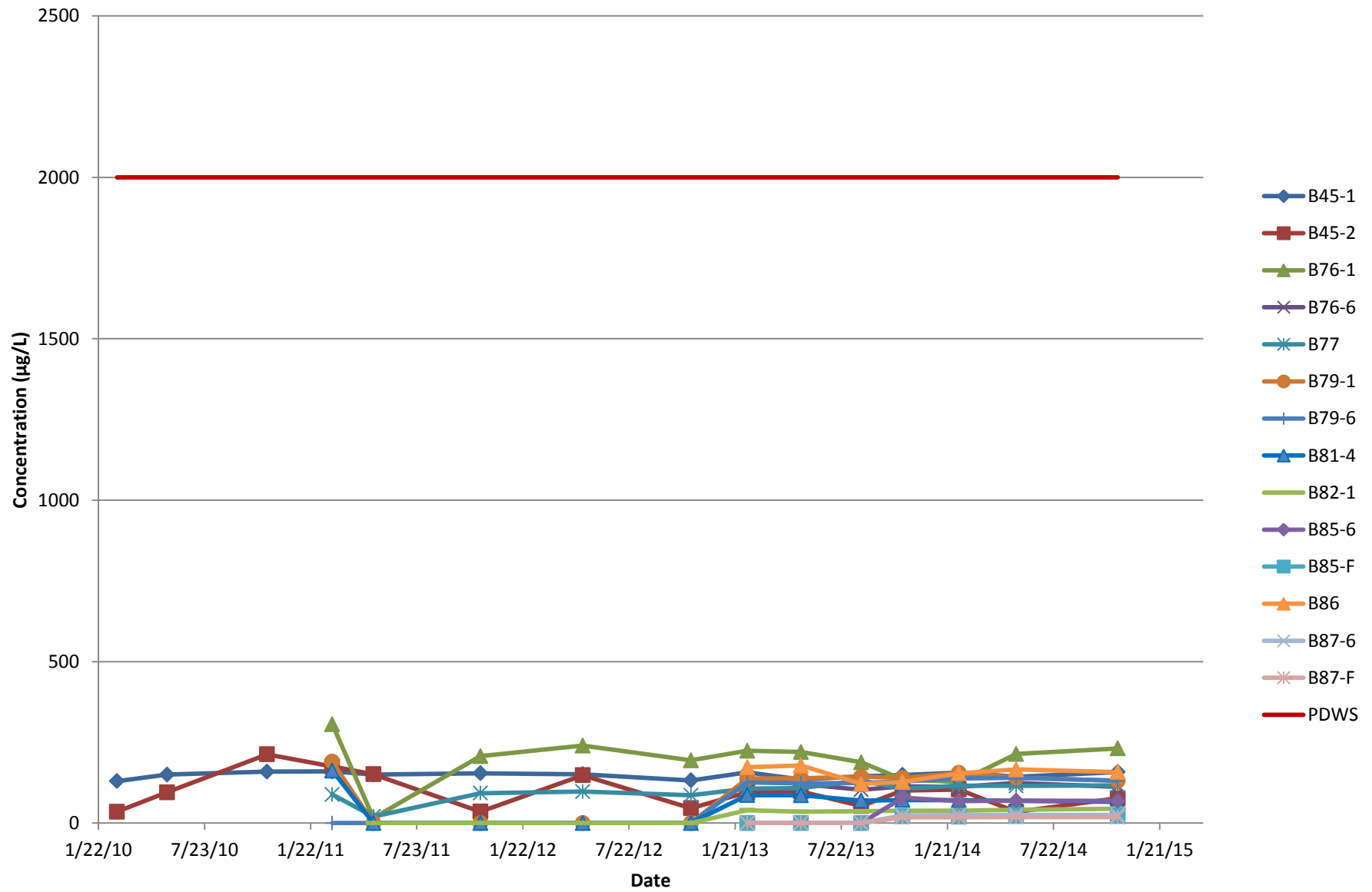
**Figure 9 - Time Series Plots of Groundwater Sodium Concentrations
Tomoka Farms Road Landfill**



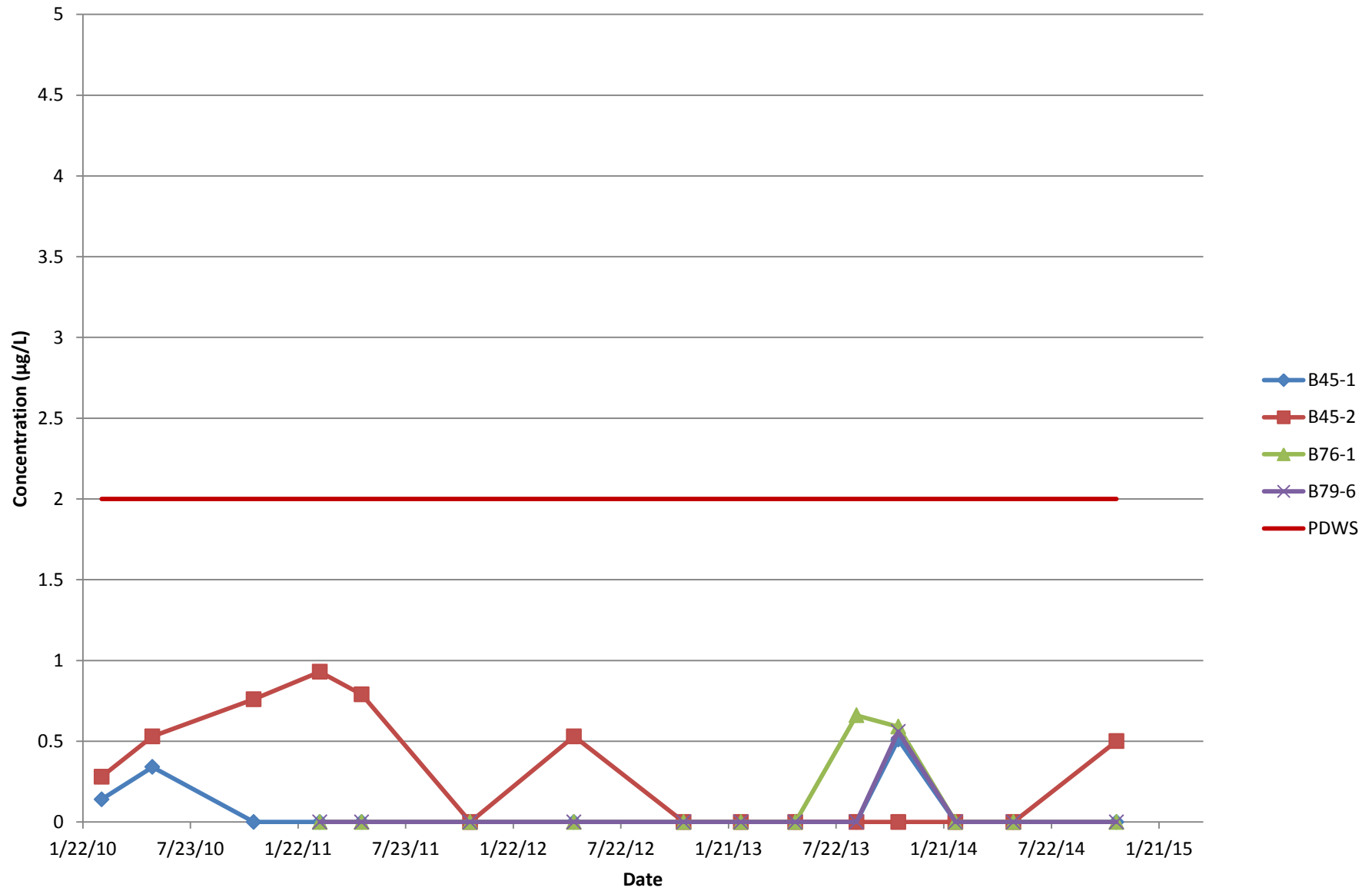
**Figure 10 - Time Series Plots of Groundwater TDS Concentrations
Tomoka Farms Road Landfill**



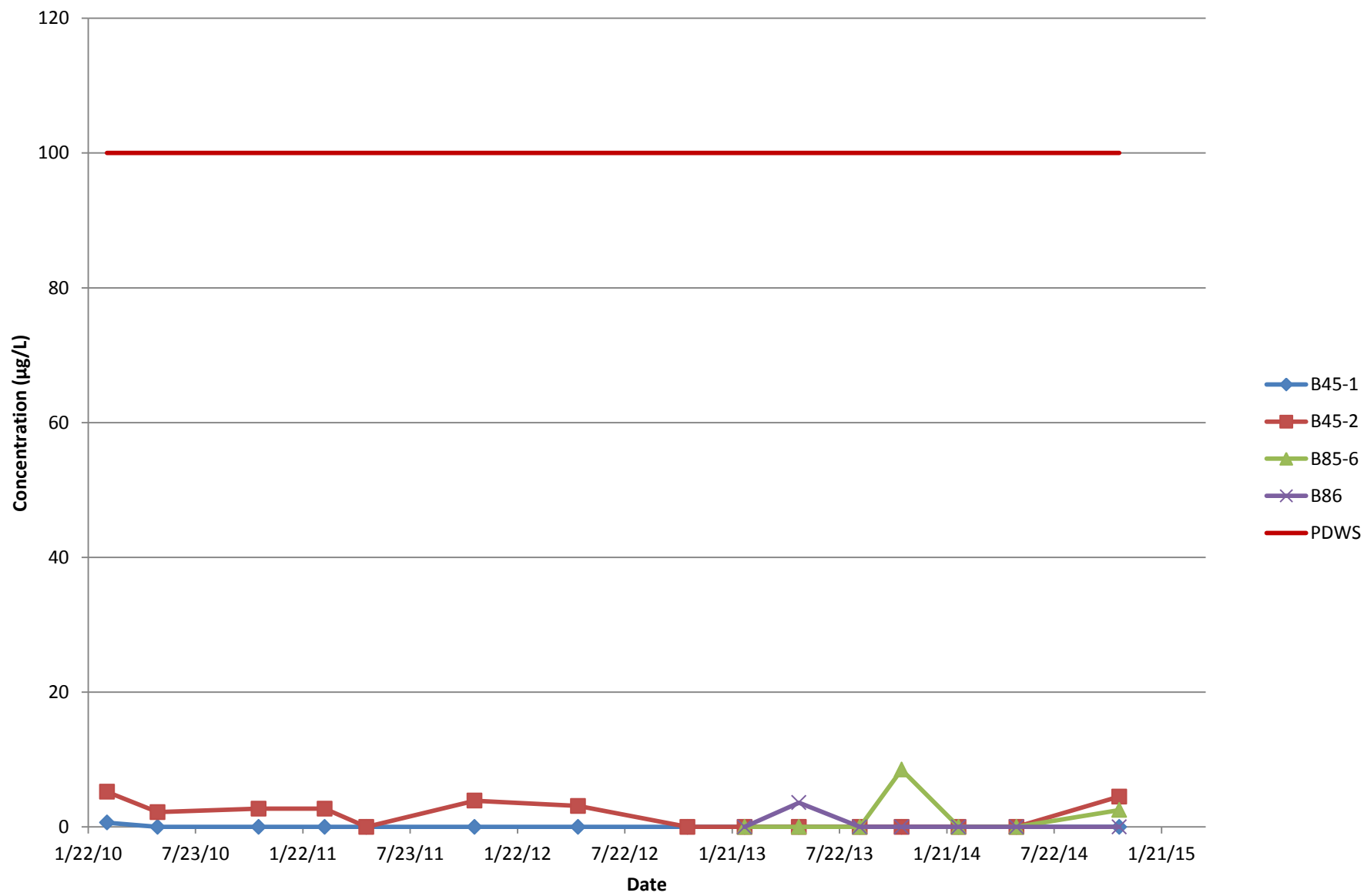
**Figure 11 - Time Series Plots of Detected Groundwater Barium Concentrations
Tomoka Farms Road Landfill**



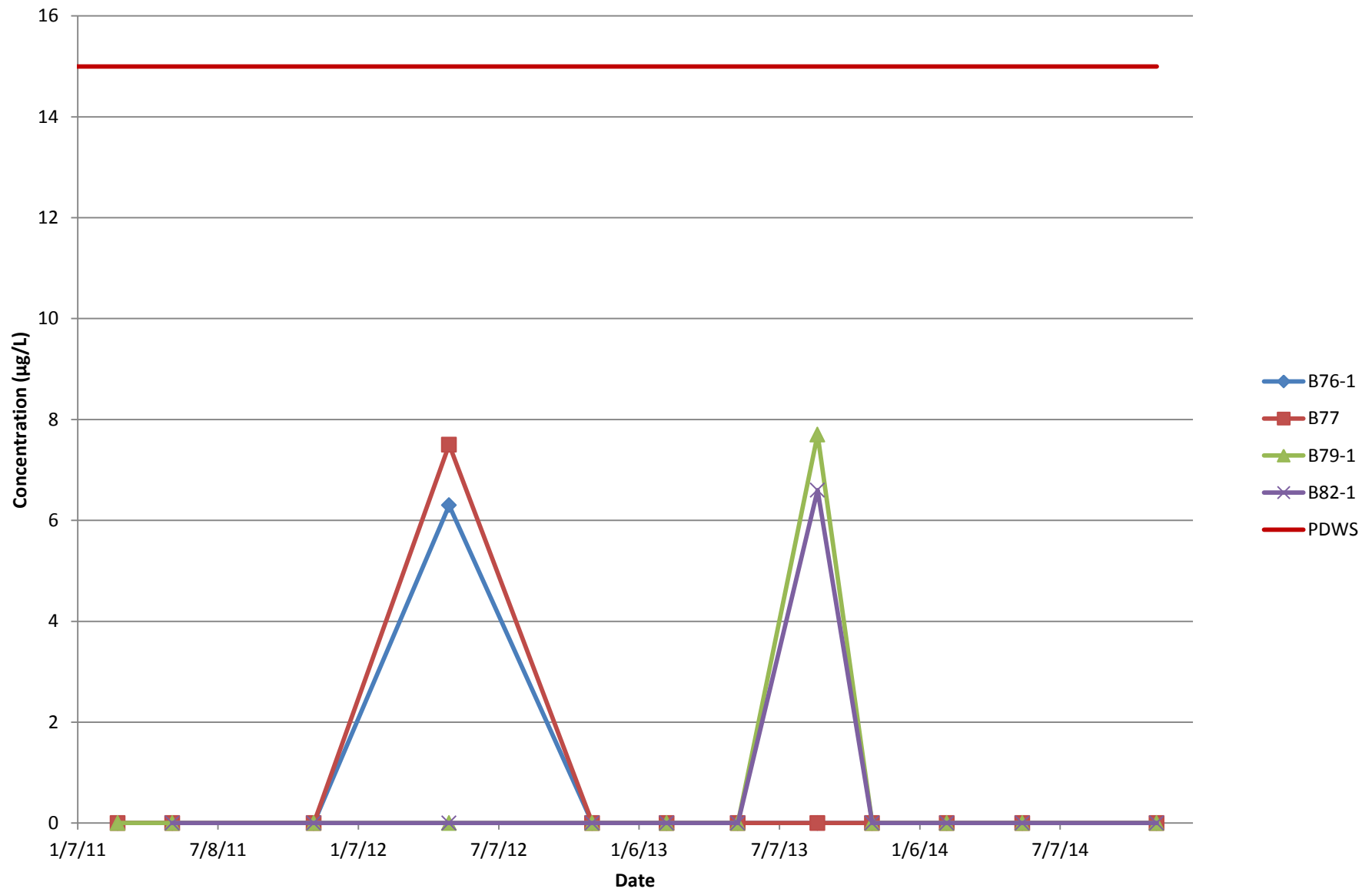
**Figure 12 - Time Series Plots of Detected Groundwater Beryllium Concentrations
Tomoka Farms Road Landfill**



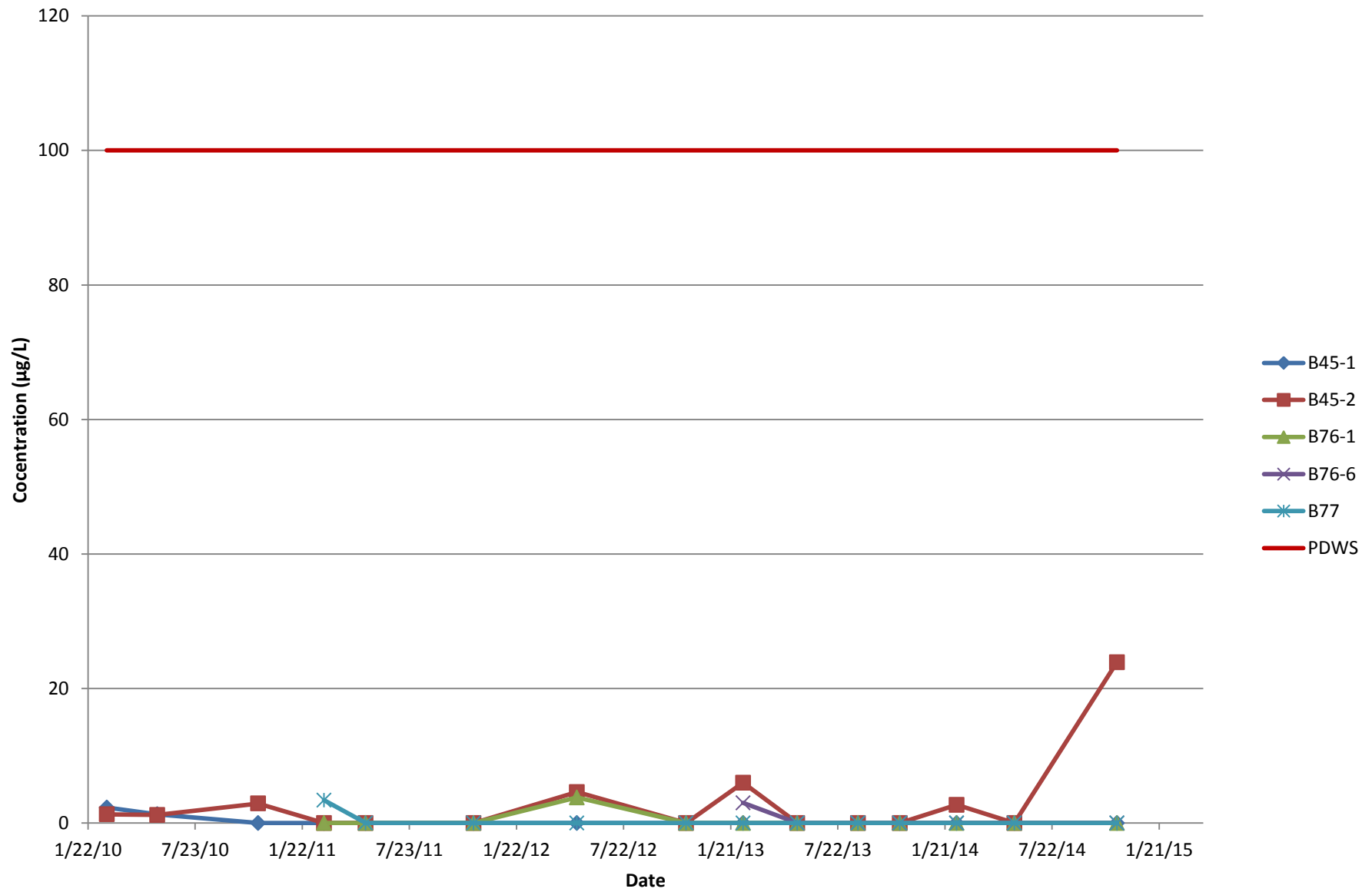
**Figure 13 - Time Series Plots of Detected Groundwater Chromium Concentrations
Tomoka Farms Road Landfill**



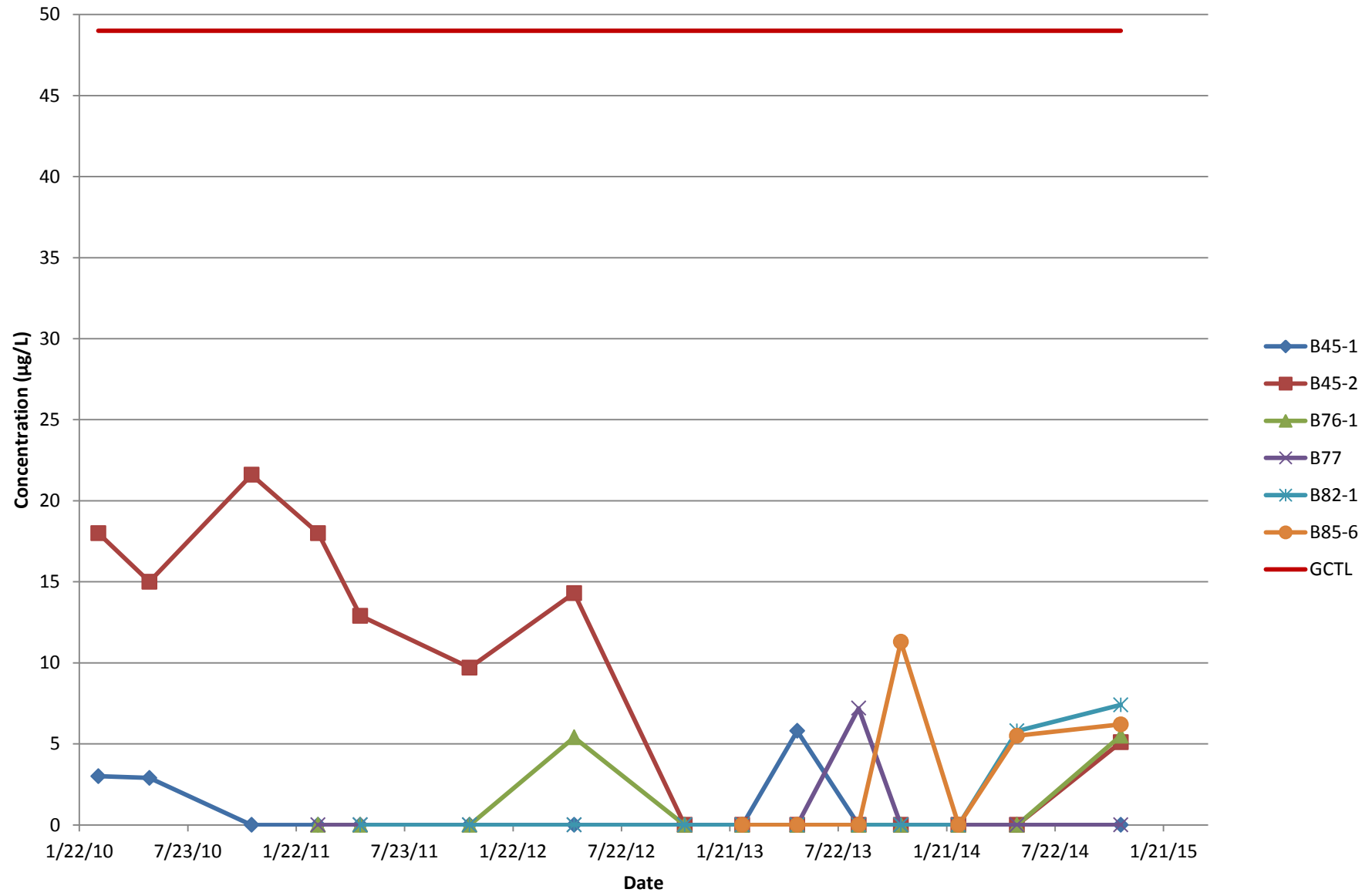
**Figure 14 - Time Series Plot of Groundwater Lead Concentrations
Tomoka Farms Road Landfill**



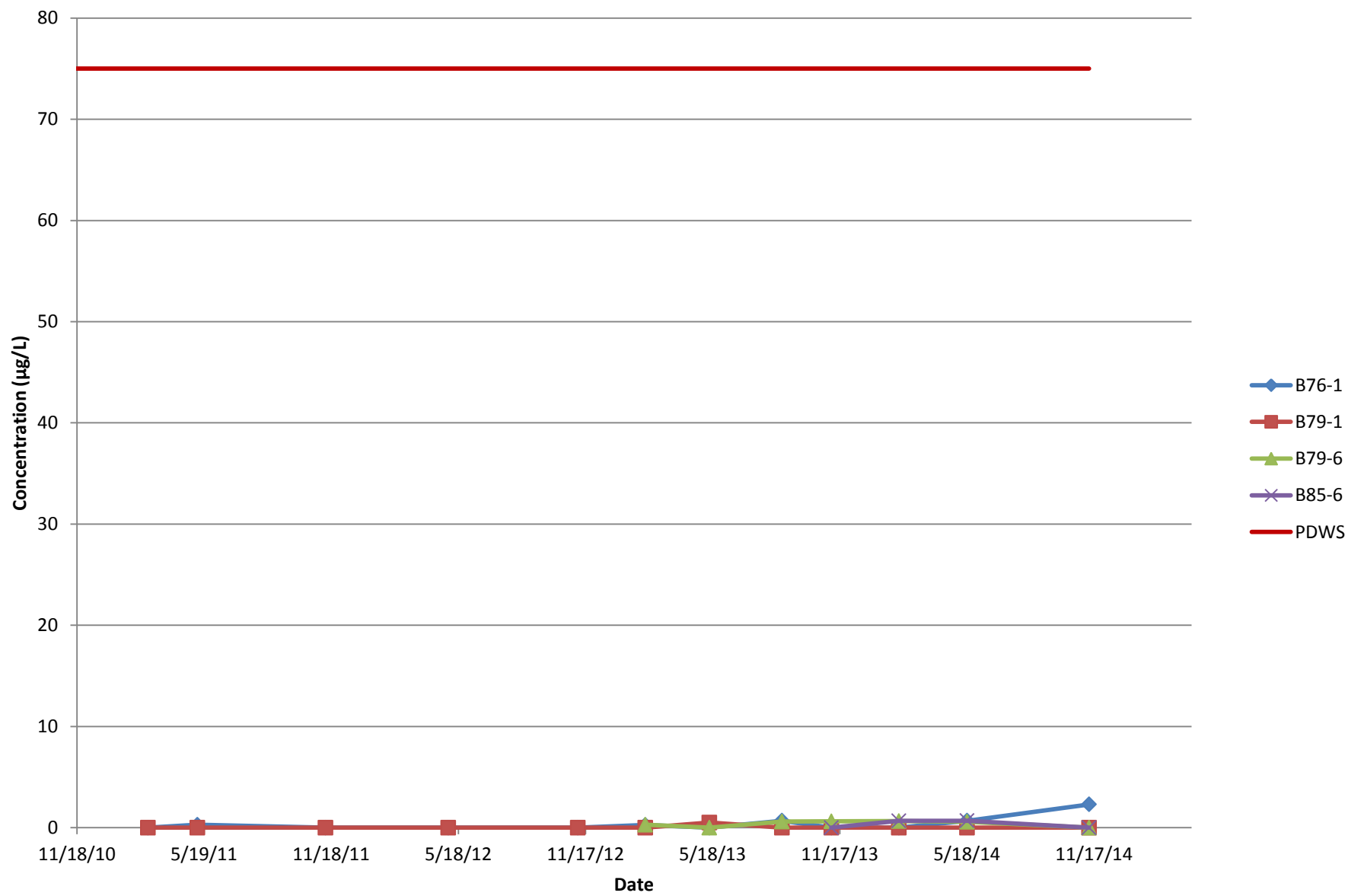
**Figure 15 - Time Series Plot of Detected Groundwater Nickel Concentrations
Tomoka Farms Road Landfill**



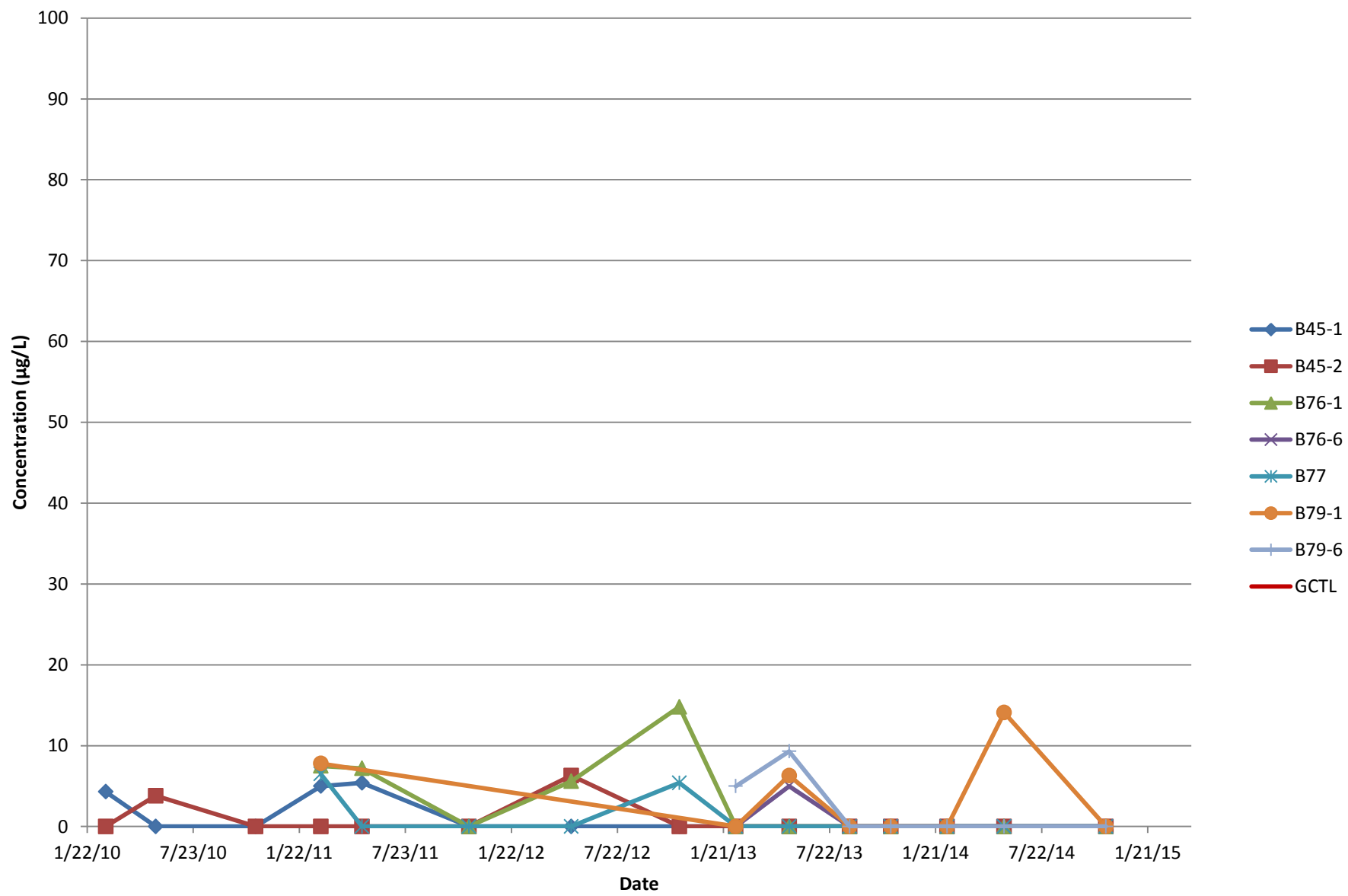
**Figure 16 - Time Series Plot of Detected Groundwater Vanadium Concentrations
Tomoka Farms Rd Landfill**



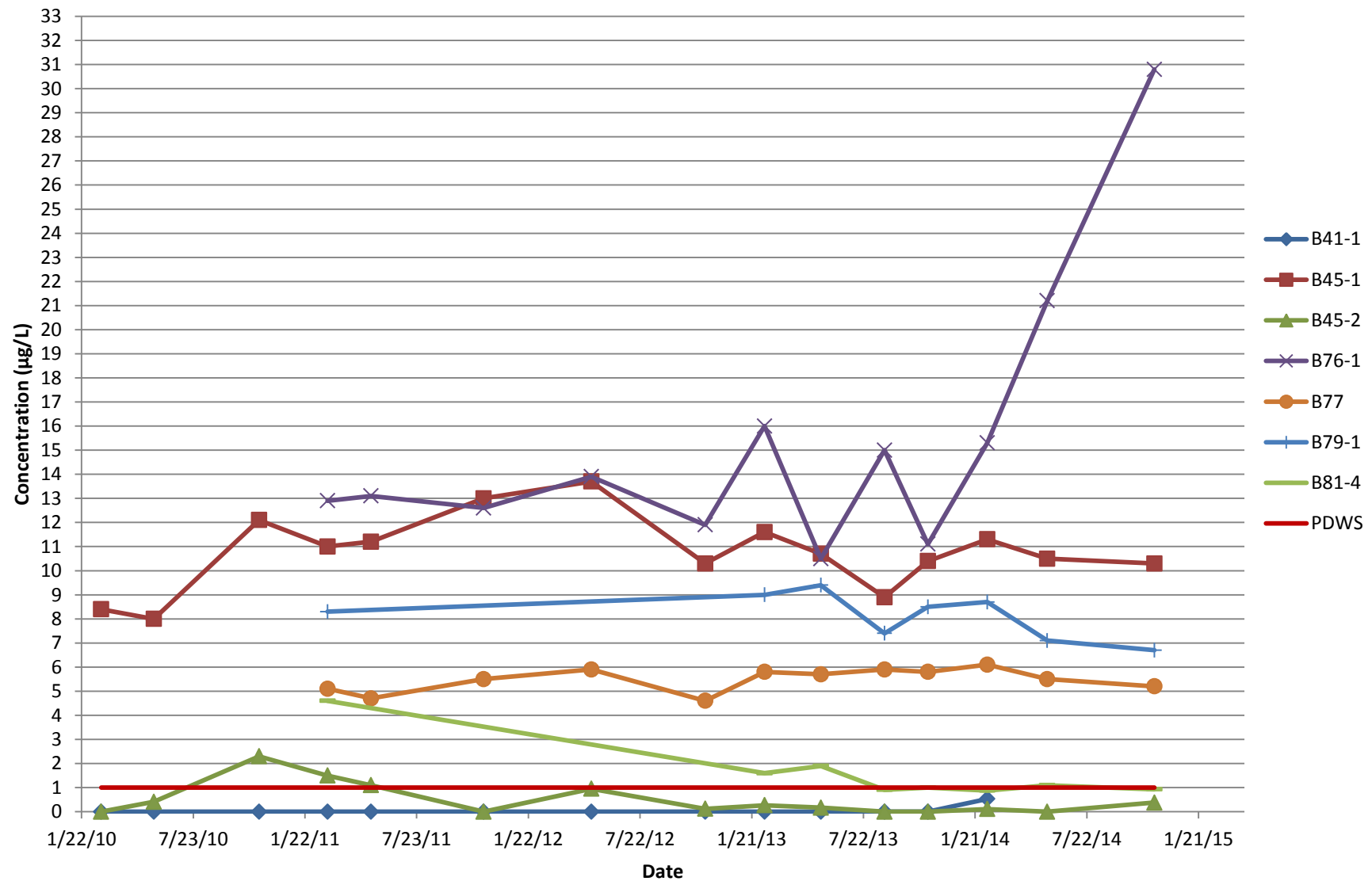
**Figure 17 - Time Series Plot of Detected Groundwater 1,4-Dichlorobenzene Concentrations
Tomoka Farms Road Landfill**



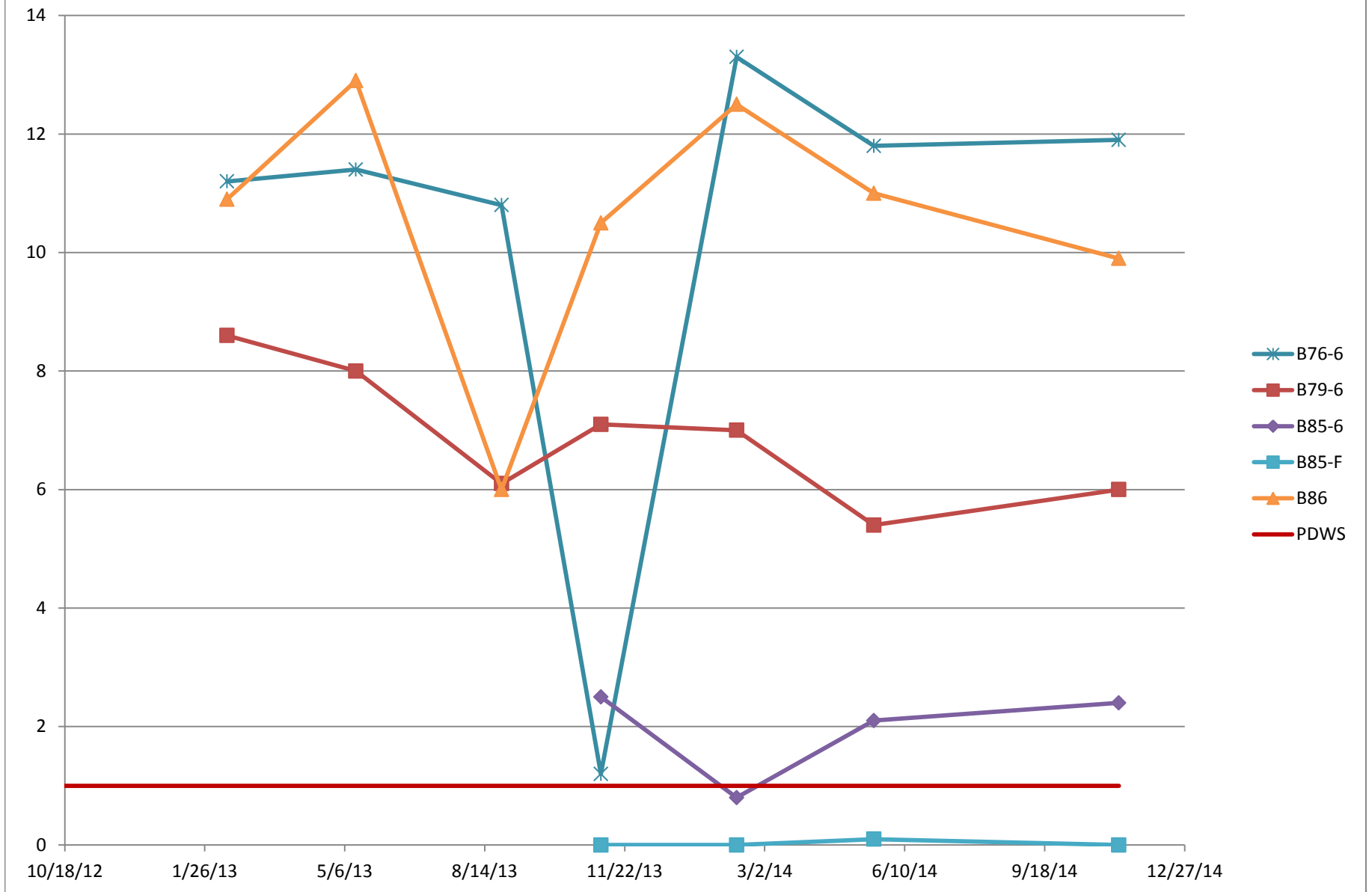
**Figure 18 - Time Series Plots of Detected Groundwater Acetone Concentrations
Tomoka Farms Road Landfill**



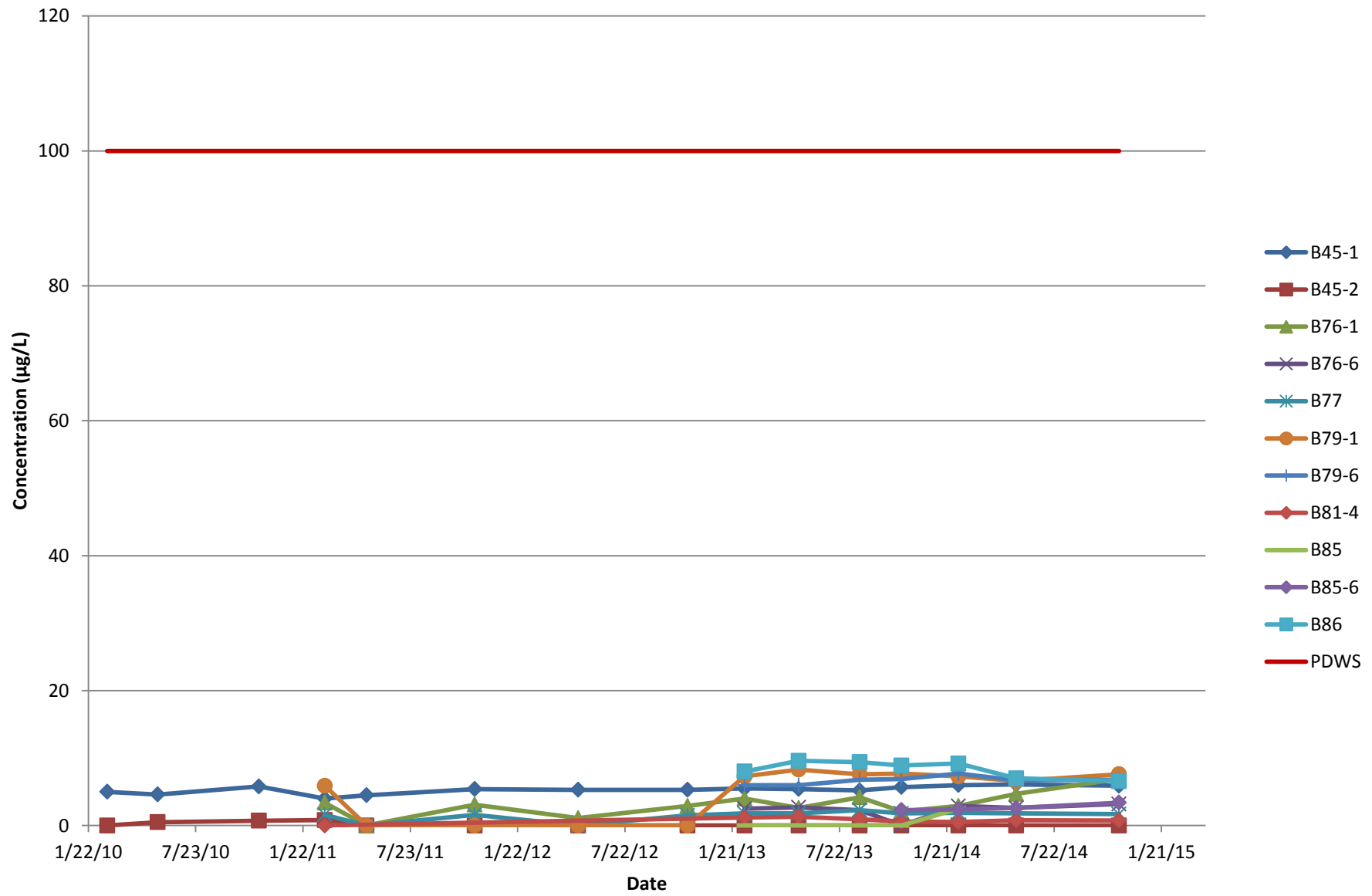
**Figure 19a - Time Series Plots of Detected Groundwater Benzene Concentrations
Tomoka Farms Road Landfill**



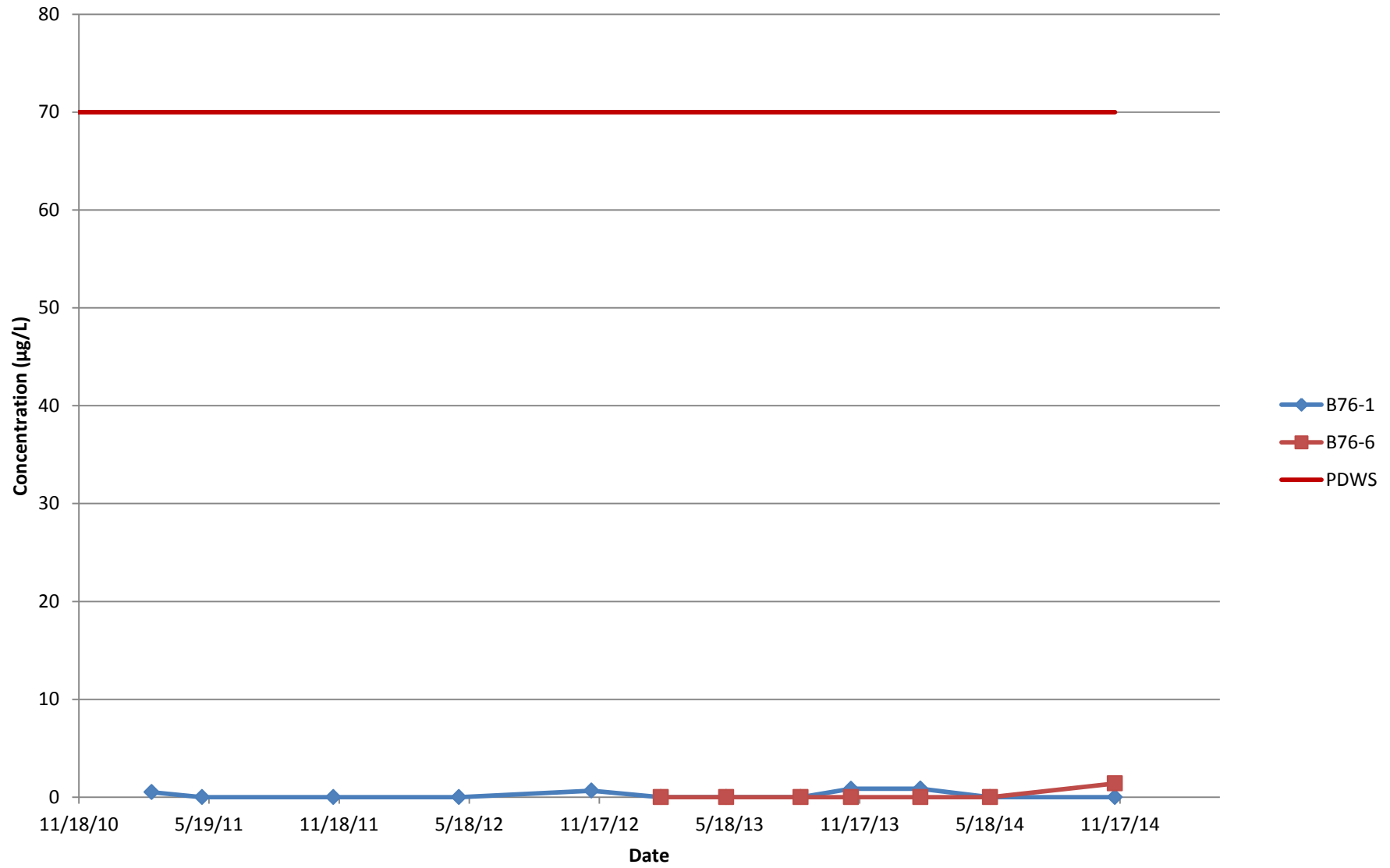
**Figure 19B - Time Series Plot of Detected Groundwater Benzene concentrations
Tomoka Farms Road Landfill**



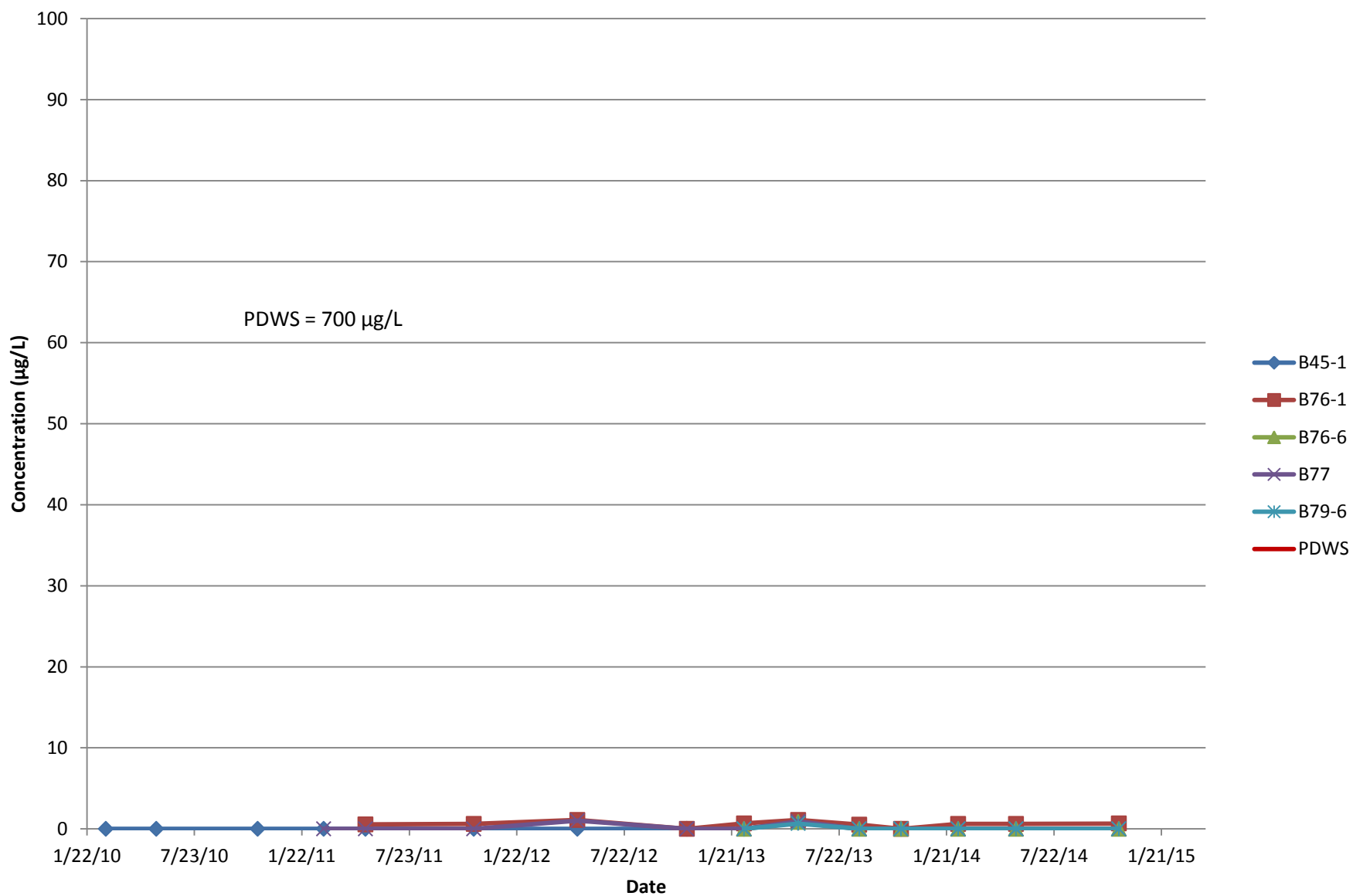
**Figure 20 - Time Series Plots of Detected Groundwater Chlorobenzene Concentrations
Tomoka Farms Road Landfill**



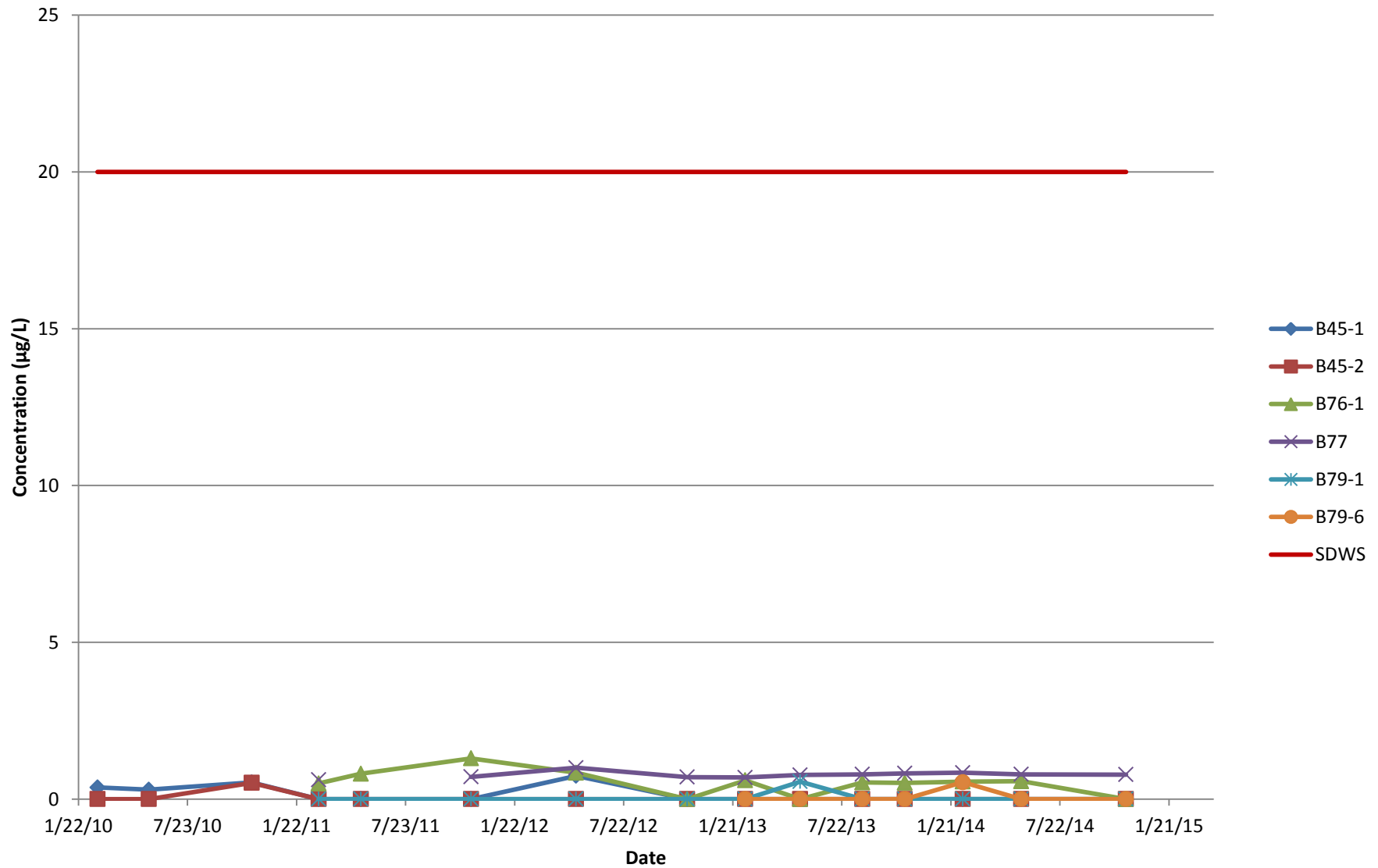
**Figure 21 - Time Series Plot of Detected Groundwater cis-1,2-Dichlorobenzene Concentrations
Tomoka Farms Road Landfill**



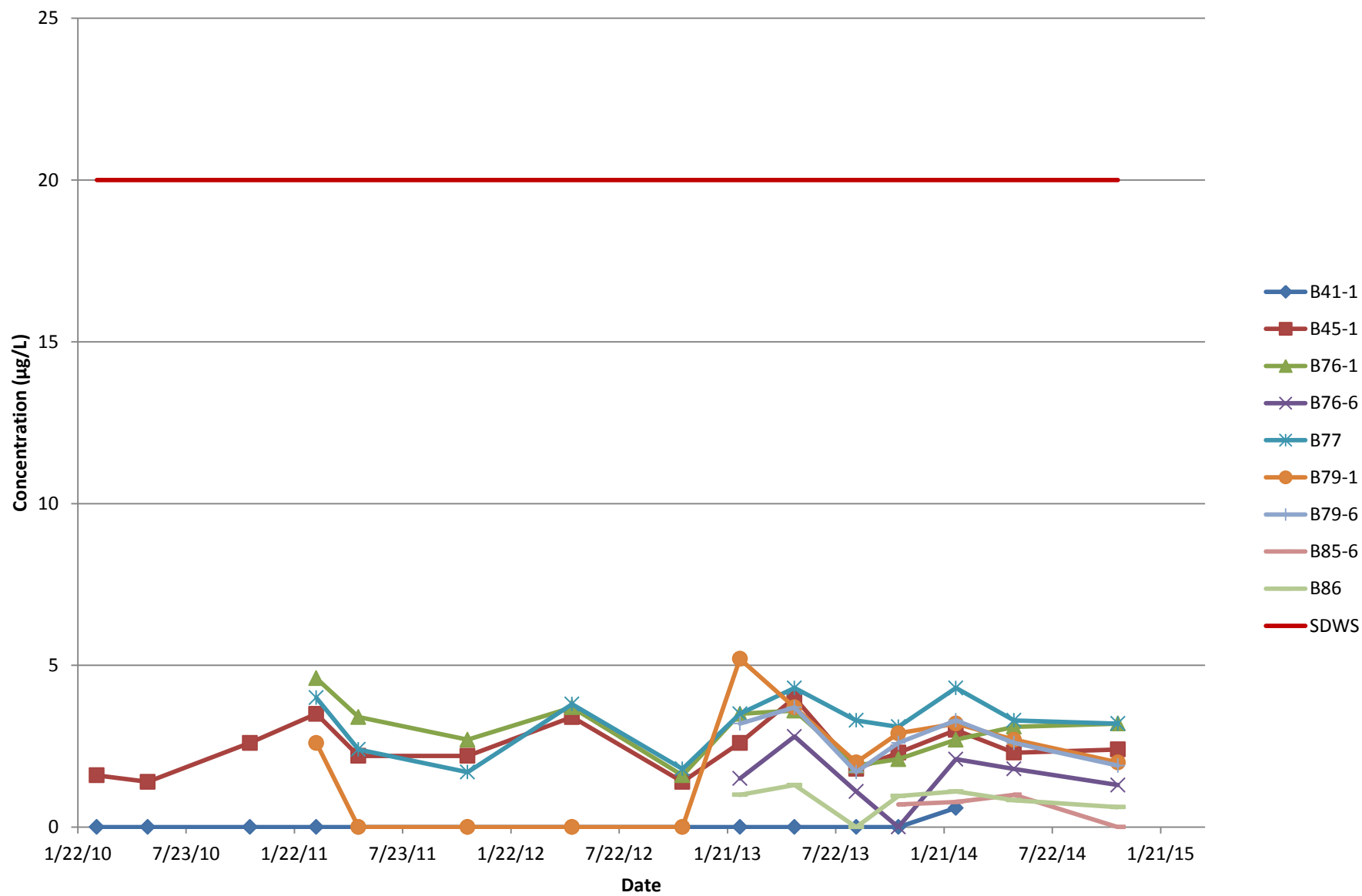
**Figure 22 - Time Series Plot of Detected Groundwater Ethylbenzene Concentrations
Tomoka Farms Road Landfill**



**Figure 23 - Time Series Plots of Detected Goundwater Toluene Concentrations
Tomoka Farms Road Landfill**

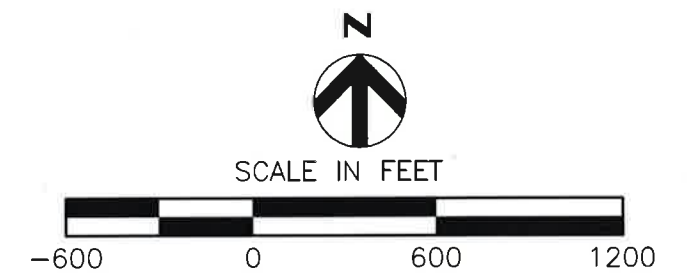


**Figure 24 - Time Series Plots of Detected Groundwater Total Xylenes Concentrations
Tomoka Farms Road Landfill**



Attachment 1

Maps of Groundwater Benzene Iso-concentrations



LEGEND

- B76-1 ● GROUNDWATER BENZENE CONCENTRATION (ug/L)
30.8
- 10 BENZENE ISO-CONCENTRATION CONTOUR IN ug/L
- 0.931 DETECTED BETWEEN DETECTION LIMIT AND REPORTING LIMIT
- BDL BELOW DETECTION LIMIT

B-85
instead of
41-1

NOTES:

1. WELL SURVEY WAS CONDUCTED BY SLIGER & ASSOCIATES ON MAY 01, 2009.
2. GROUNDWATER WAS SAMPLED ON NOV. 10-12, 2014.



PROJECT TITLE

TOMOKA FARMS ROAD LANDFILL

SHEET TITLE

ZONE 4 GROUNDWATER
BENZENE ISO-CONCENTRATION CONTOUR MAP
2014 2ND SEMIANNUAL MONITORING

PROJECT NUMBER

236249

PROJECT MANAGER

J. CATCHES

DATE

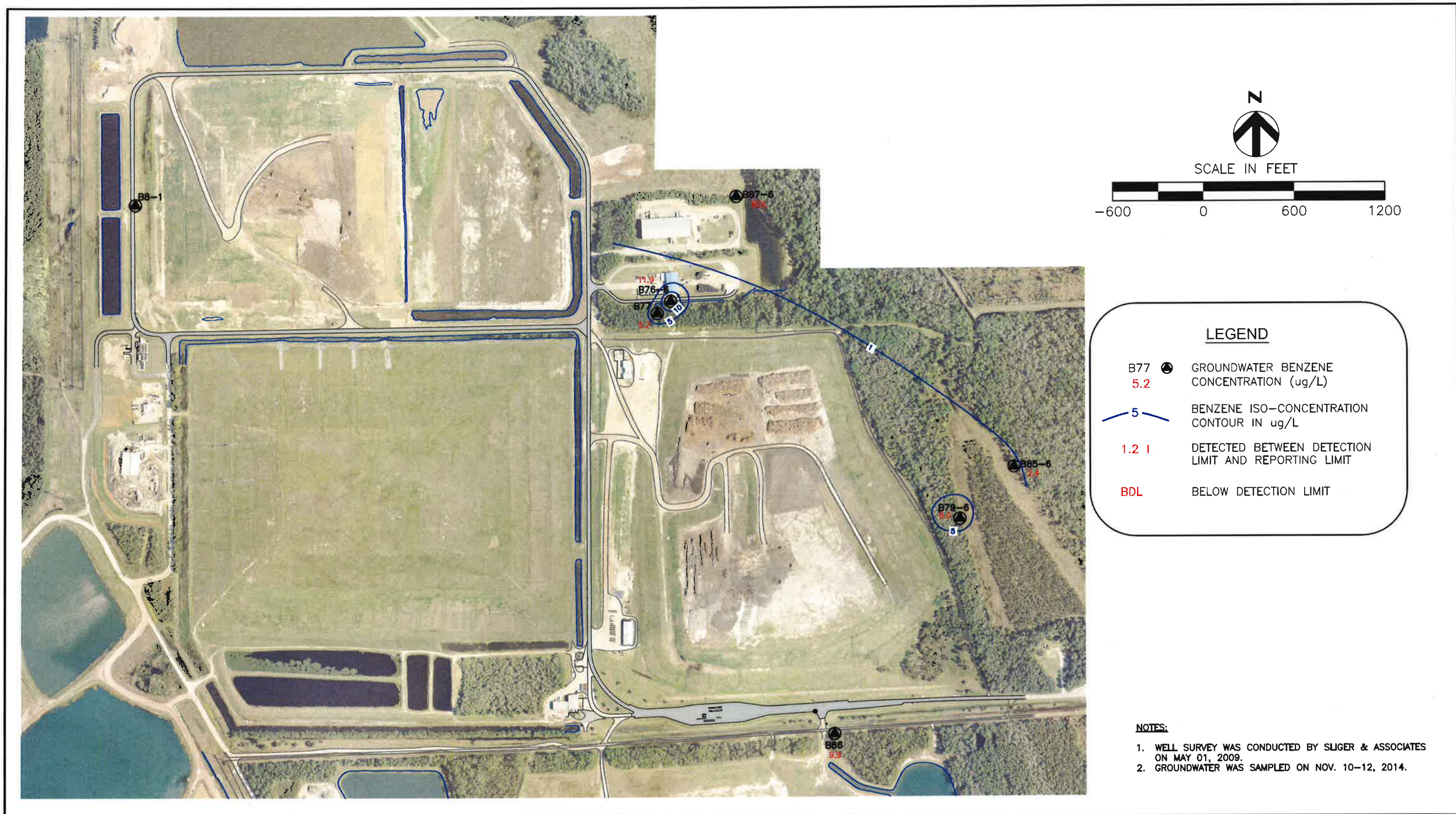
MARCH, 2015

REFERENCE SHEET

REFERENCE DOCUMENT

EXHIBIT NUMBER

FIGURE 1



LEGEND

- B77 ● GROUNDWATER BENZENE CONCENTRATION (ug/L)
5.2
- 5 BENZENE ISO-CONCENTRATION CONTOUR IN ug/L
- 1.2 I DETECTED BETWEEN DETECTION LIMIT AND REPORTING LIMIT
- BDL BELOW DETECTION LIMIT

NOTES:

1. WELL SURVEY WAS CONDUCTED BY SLIGER & ASSOCIATES ON MAY 01, 2009.
2. GROUNDWATER WAS SAMPLED ON NOV. 10-12, 2014.



PROJECT TITLE

TOMOKA FARMS ROAD LANDFILL

SHEET TITLE

ZONE 6 GROUNDWATER
BENZENE ISO-CONCENTRATION CONTOUR MAP
2014 2ND SEMIANNUAL MONITORING

PROJECT NUMBER

236249

PROJECT MANAGER

J. CATCHES

DATE

MARCH, 2015

REFERENCE SHEET

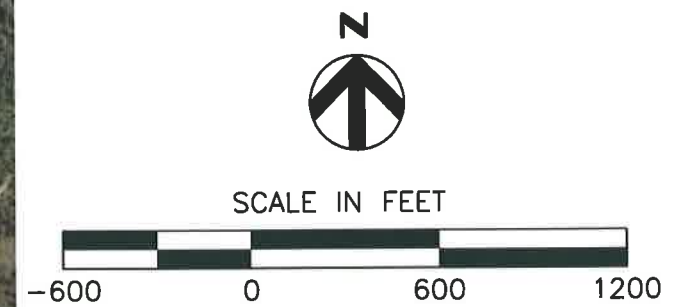
REFERENCE DOCUMENT

EXHIBIT NUMBER

FIGURE 2

Attachment 2

Site Map and Groundwater Elevation Maps



LEGEND	
B37-2	● ZONE 1-2 MONITORING WELL
B37-1	⊠ ZONE 4 MONITORING WELL
SW-1	⊞ SURFACE WATER SAMPLING LOCATION
---	FACILITY BOUNDARY
---	WASTE UNIT BOUNDARY



PROJECT TITLE TOMOKA FARMS ROAD LANDFILL

SHEET TITLE SITE MAP

PROJECT NUMBER 235490

PROJECT MANAGER J. CATCHES

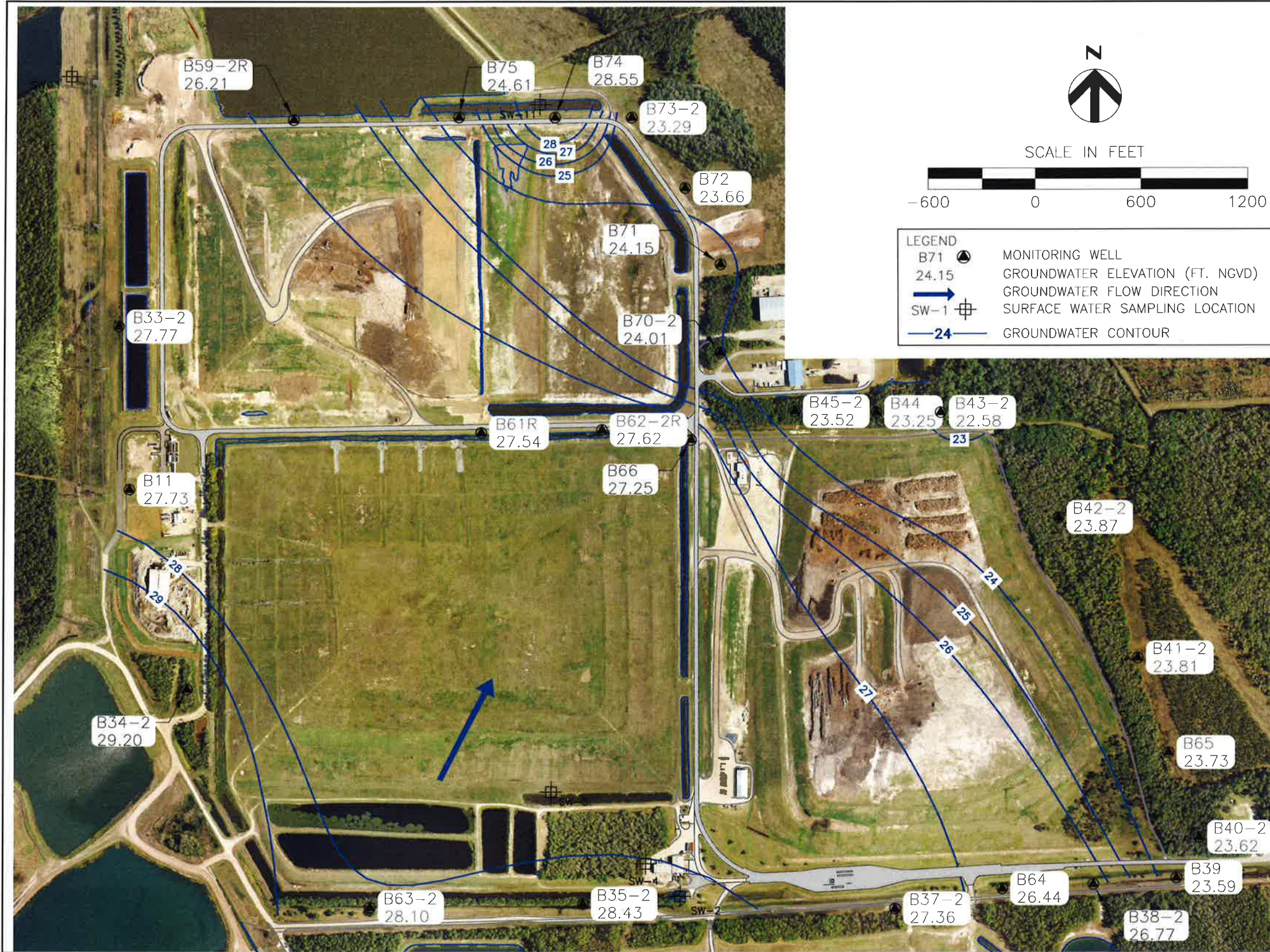
DATE 01/2015

REFERENCE SHEET

REFERENCE DOCUMENT

EXHIBIT NUMBER FIGURE 1

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LEGEND

- B71 24.15 MONITORING WELL
- GROUNDWATER ELEVATION (FT. NGVD)
- GROUNDWATER FLOW DIRECTION
- SW-1 SURFACE WATER SAMPLING LOCATION
- 24 GROUNDWATER CONTOUR

WELL	LATITUDE	LONGITUDE	TOP OF CASING ELEVATION (NGVD)
B11	29°08'02"	81°06'14"	32.95
B33-2	29°08'12"	81°06'14"	32.97
B34-2	29°07'51"	81°06'11"	31.20
B35-2	29°07'39"	81°05'46"	29.34
B37-02	29°07'39"	81°05'25"	28.76
B38-2	29°07'40"	81°05'13"	28.12
B39	29°07'40"	81°05'08"	29.09
B40-2	29°07'43"	81°05'07"	27.67
B41-2	29°07'53"	81°05'11"	29.27
B42-2	29°08'01"	81°05'16"	28.47
B43-2	29°08'07"	81°05'23"	28.23
B44	29°08'07"	81°05'27"	30.03
B45-2	29°08'07"	81°05'32"	30.35
B59-2R	29°08'23"	81°06'05"	33.12
B61R	29°08'05"	81°05'52"	39.42
B62-2R	29°08'05"	81°05'44"	39.36
B63-2	29°07'39"	81°05'59"	30.38
B64	29°07'40"	81°05'19"	28.22
B65	29°07'48"	81°05'09"	27.97
B66	29°08'06"	81°05'38"	31.26
B70-2	29°08'11"	81°05'37"	31.51
B71	29°08'15"	81°05'37"	30.75
B72	29°08'20"	81°05'39"	28.93
B73-2	29°08'24"	81°05'42"	28.95
B74	29°08'24"	81°05'47"	33.78
B75	29°08'24"	81°05'53"	31.62

NOTES:

1. WELL SURVEY CONDUCTED BY SLIGER & ASSOCIATES ON MAY 01, 2009.
2. GROUNDWATER CONTOURS DO NOT INCLUDE THE SURFACE WATER BODIES.
3. GROUNDWATER LEVELS WERE MEASURED ON NOVEMBER 6, 2014.



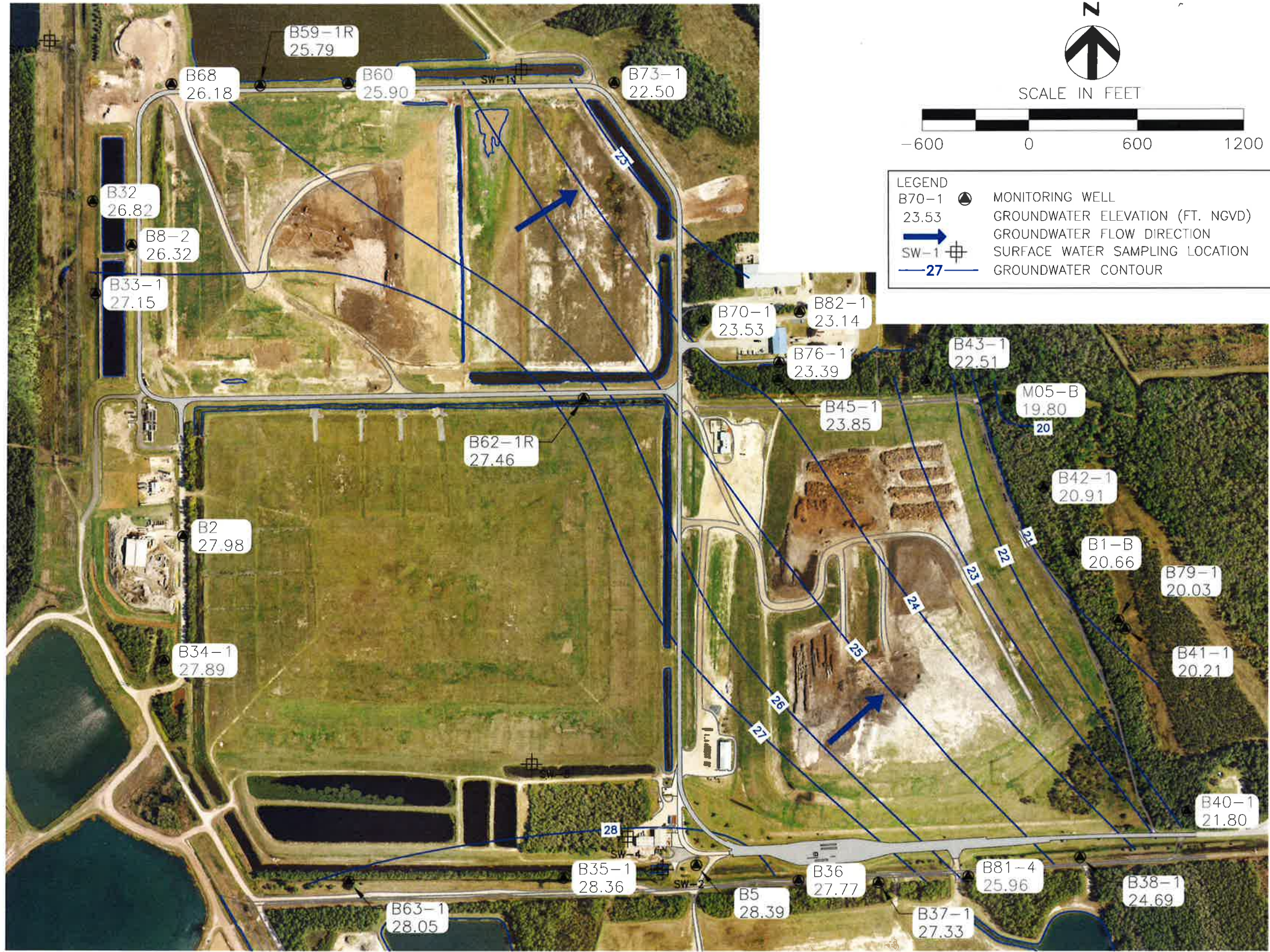
PROJECT TITLE TOMOKA FARMS ROAD LANDFILL

SHEET TITLE
ZONES 1 & 2 GROUNDWATER POTENTIOMETRIC MAP
2ND 2014 SEMIANNUAL SAMPLING EVENT

PROJECT NUMBER
235490
PROJECT MANAGER
J. CATCHES
DATE
01/2015

REFERENCE SHEET
REFERENCE DOCUMENT
EXHIBIT NUMBER
FIGURE 2

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LEGEND
B70-1 23.53 MONITORING WELL
GROUNDWATER ELEVATION (FT. NGVD)
GROUNDWATER FLOW DIRECTION
SW-1 SURFACE WATER SAMPLING LOCATION
27 GROUNDWATER CONTOUR

WELL	LATITUDE	LONGITUDE	TOP OF CASING ELEVATION (NGVD)
B1-B	29°07'57"	81°05'14"	28.78
B2	29°07'58"	81°06'09"	34.53
B32	29°08'17"	81°06'14"	30.92
B33-1	29°08'12"	81°06'14"	34.69
B34-1	29°07'51"	81°06'11"	31.19
B35-1	29°07'39"	81°05'46"	29.26
B36	29°07'39"	81°05'31"	29.33
B37-01	29°07'39"	81°05'25"	28.63
B38-1	29°07'40"	81°05'13"	28.24
B40-1	29°07'43"	81°05'07"	27.77
B41-1	29°07'53"	81°05'11"	29.16
B42-1	29°08'01"	81°05'16"	28.30
B43-1	29°08'07"	81°05'23"	28.09
B45-1	29°08'07"	81°05'32"	30.28
B5	29°07'40"	81°05'38"	32.59
B59-1R	29°08'23"	81°06'05"	32.44
B60	29°08'24"	81°05'59"	32.95
B62-1R	29°08'05"	81°05'44"	38.97
B63-1	29°07'39"	81°05'59"	30.03
B68	29°08'23"	81°06'10"	32.98
B70-1	29°08'11"	81°05'37"	31.03
B73-1	29°08'24"	81°05'42"	29.20
B8-2	29°08'14"	81°06'11"	33.37
M05-B	29°08'06"	81°05'18"	29.80
B76-1	29°08'08"	81°05'31"	27.39
B79-1	29°07'54"	81°05'09"	27.53
B81-4	29°07'39"	81°05'19"	29.76
B82-1	29°08'11"	81°05'30"	30.78

NOTES:

1. WELL SURVEY CONDUCTED BY SLIGER & ASSOCIATES ON MAY 01, 2009.
2. GROUNDWATER LEVELS WERE MEASURED ON NOVEMBER 6, 2014.

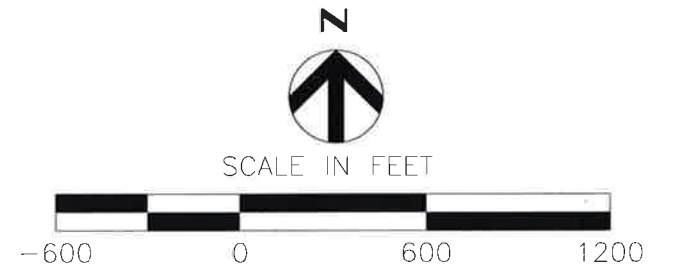


PROJECT TITLE TOMOKA FARMS ROAD LANDFILL
SHEET TITLE
ZONE 4 GROUNDWATER POTENTIOMETRIC MAP
2ND 2014 SEMIANNUAL SAMPLING EVENT

PROJECT NUMBER
235490
PROJECT MANAGER
J. CATCHES
DATE
01/2015

REFERENCE SHEET
REFERENCE DOCUMENT
EXHIBIT NUMBER
FIGURE 3

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LEGEND	
B76-6	MONITORING WELL
19.63	GROUNDWATER ELEVATION (FT. NGVD)
	GROUNDWATER FLOW DIRECTION
SW-1	SURFACE WATER SAMPLING LOCATION
20	GROUNDWATER CONTOUR

WELL	LATITUDE	LONGITUDE	TOP OF CASING ELEVATION (NGVD)
B8	29°08'14"	81°06'11"	33.53
B76-6	29°08'08"	81°05'31"	27.33
B77	29°08'07"	81°05'32"	31.13
B79-6	29°07'54"	81°05'10"	27.51
B86	29°07'40"	81°05'19"	29.46
B85-6	29°07'57"	81°05'05"	27.02
B87-6	29°08'15"	81°05'26"	29.37

- NOTES:
1. WELL SURVEY CONDUCTED BY SLIGER & ASSOCIATES ON MAY 01, 2009.
 2. GROUNDWATER LEVELS WERE MEASURED ON NOVEMBER 6, 2014.



PROJECT TITLE TOMOKA FARMS ROAD LANDFILL

SHEET TITLE ZONE 6 GROUNDWATER POTENTIOMETRIC MAP
2ND 2014 SEMIANNUAL SAMPLING EVENT

PROJECT NUMBER 235490

PROJECT MANAGER J. CATCHES

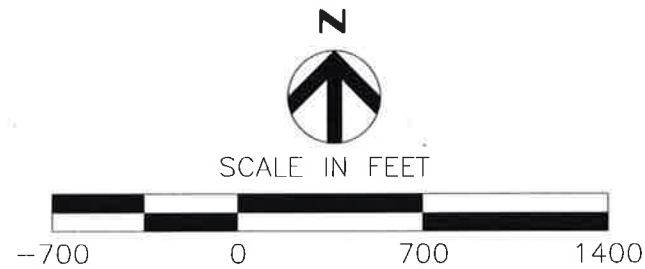
DATE 01/2015

REFERENCE SHEET

REFERENCE DOCUMENT

EXHIBIT NUMBER FIGURE 4

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LEGEND	
FA-2C 15.60	MONITORING WELL
15.60	GROUNDWATER ELEVATION (FT. NGVD)
Blue arrow	GROUNDWATER FLOW DIRECTION
SW-1	SURFACE WATER SAMPLING LOCATION
15	GROUNDWATER CONTOUR

WELL	LATITUDE	LONGITUDE	TOP OF CASING ELEVATION (NGVD)
FA-1B	29°07'51"	81°06'11"	32.22
FA-2C	29°08'31"	81°05'32"	28.10
F-MB	29°07'42"	81°05'36"	33.88
B85-F	29°07'57"	81°05'05"	27.47
B87-F	29°08'15"	81°05'26"	29.25
B83	29°08'07"	81°05'32"	30.57

- NOTES:
1. WELL SURVEY CONDUCTED BY SLIGER & ASSOCIATES ON MAY 01, 2009.
 2. GROUNDWATER LEVELS WERE MEASURED ON NOVEMBER 6, 2014.



PROJECT TITLE TOMOKA FARMS ROAD LANDFILL

SHEET TITLE FLORIDAN AQUIFER GROUNDWATER POTENTIOMETRIC MAP
2ND 2014 SEMIANNUAL SAMPLING EVENT

PROJECT NUMBER 235490

PROJECT MANAGER J. CATCHES

DATE 01/2015

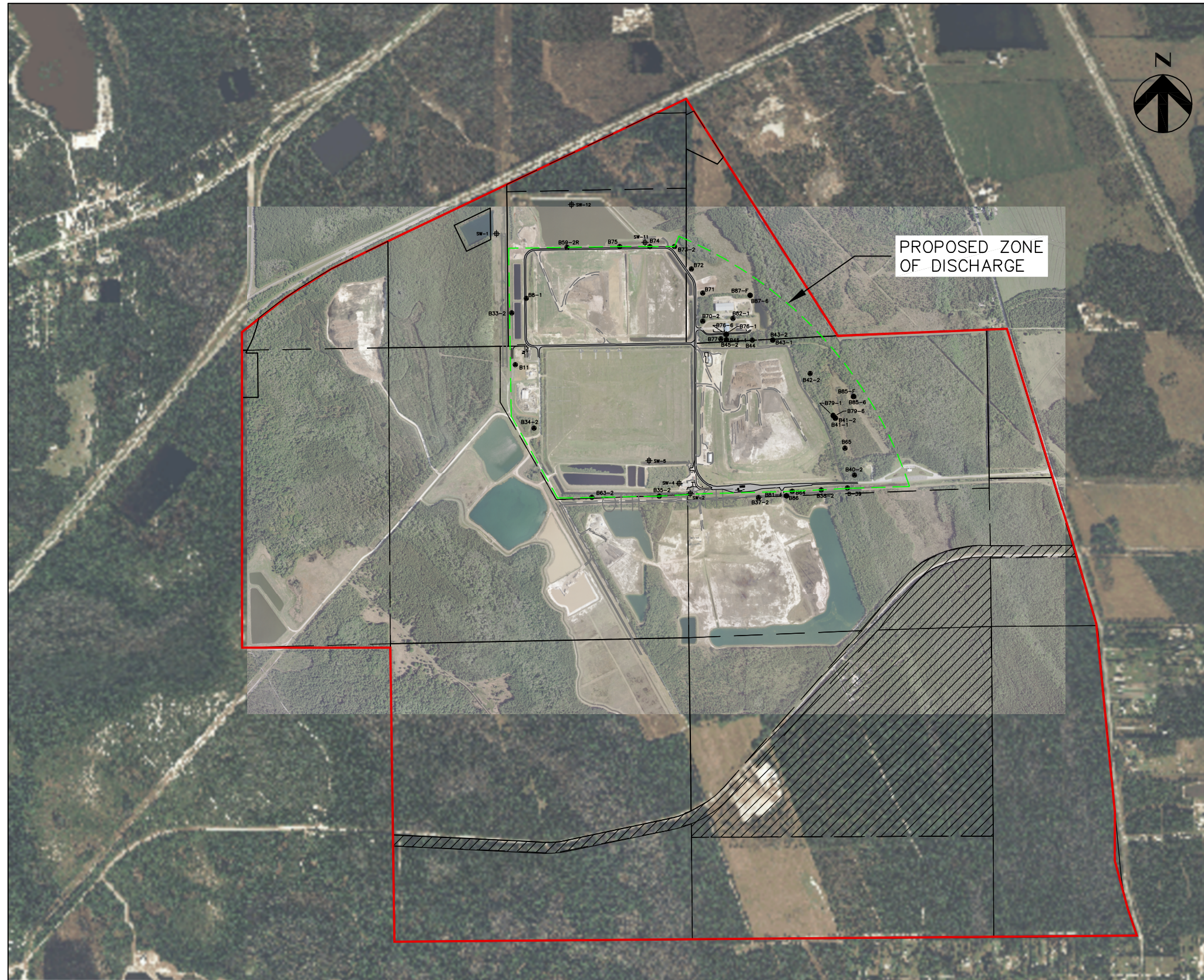
REFERENCE SHEET

REFERENCE DOCUMENT

EXHIBIT NUMBER FIGURE 5

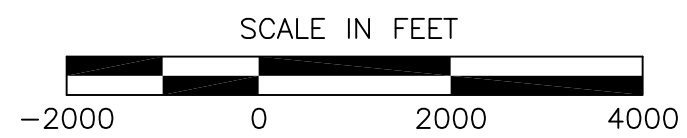
Attachment 3

Site Plan with Proposed Zone of Discharge Boundary



- NOTES:**
1. LANDFILL AND SURROUNDING AERIAL FROM VOLUSIA COUNTY PROPERTY APPRAISER WEBSITE, 2014.
 2. MONITORING WELLS SHOWN ON THIS MAP:
 (1) ZONE 1-2 OF THE SURFICIAL WELLS IN THE FACILITY PERMIT (NO. 0078767-034-SO-T3).
 (2) ALL MONITORING WELLS OF THE CURRENT BENZENE EVALUATION MONITORING PROGRAM.

- LEGEND:**
- PROPERTY BOUNDARY
 - PARCEL BOUNDARY
 - - - PROPOSED ZONE OF DISCHARGE
 - PROPERTY NOT OWNED BY VOLUSIA COUNTY



**TOMOKA FARMS ROAD LANDFILL
 SITE PLAN WITH PROPOSED
 ZONE OF DISCHARGE BOUNDARY**

DATE
 MAR 2015

FIGURE