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August 13, 2015

Mr. Bob Schwarz
Oregon Department of Environmental Quality
Eastern Region
400 E. Scenic Drive, Suite 307
The Dalles, Oregon 97058

SUBJECT: Riverbend Landfill Solid Waste Disposal Site Permit (SWDP) No. 345
Permit Modification Application for Module 11 Expansion
Hydrogeologic Site Characterization Report

Dear Mr. Schwarz:

Pursuant to the Oregon Department of Environmental Quality (DEQ approval of the Riverbend Landfill Hydrogeologic Site Characterization Work Plan dated April 23, 2015, RLC wishes to submit the attached Hydrogeologic Site Characterization Report in support of the RLC permit modification application for Module 11 Expansion. This Hydrogeologic Site Characterization Report was prepared by SCS Engineers (SCS) of Portland, Oregon at the request of RLC.

The results of the Hydrogeologic Site Characterization Report indicate that the characterized hydrogeologic conditions within the proposed Module 11 are consistent with the site Conceptual Hydrogeologic Model previously developed for the RLC site. The Hydrogeologic Site Characterization Report also presents recommendations for monitoring network modifications for the Module 11 expansion area to monitor (1) groundwater quality in the target water bearing zones hydraulically downgradient of Module 11 expansion area and (2) landfill gas along the perimeter of Module 11.

Should you have any questions or concerns related to the contents of the Report, please contact me by e-mail at jdenson@wm.com or by phone at 602-757-3352

Sincerely,
Riverbend Landfill Company

James L. Denson Jr.
PNW/BC Market Area Environmental Protection Manager

Enclosure – Hydrogeologic Site Characterization Work Plan Report

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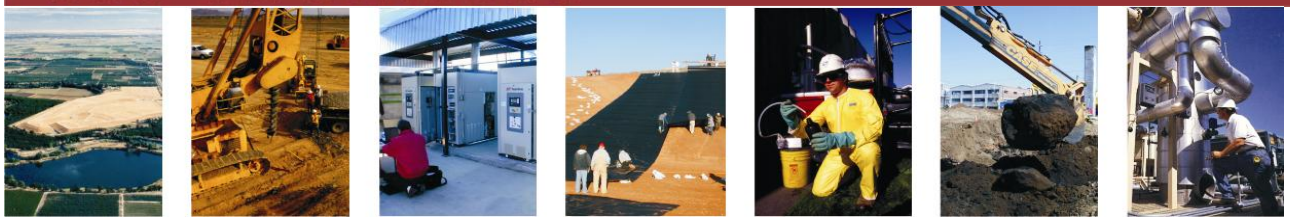

Hydrogeologic Site Characterization Report In Support of Permit Modification Application for Module 11 Expansion

Riverbend Landfill
McMinnville, Oregon

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A PDF copy of the entire report is provided on a compact disk (CD) on the back cover of the report.

ACRONYMS AND ABBREVIATIONS

AEMR	annual environmental monitoring report
AHI	additional hydrogeological investigation
As	arsenic
Ba	barium
Ca	calcium
Co	cobalt
Cr	chromium
Cu	copper
Cl	chloride
cm/sec	centimeters per second
DEQ	Oregon Department of Environmental Quality
EMCON	EMCON Northwest, Inc.
EMP	environmental monitoring plan
^{o}F	degrees Farenheight
Fe	iron
ft/ft	feet per foot
ft/min	feet per minute
ft^2/min	square feet per minute
ft/yr	feet per year
gpd/ft	gallons per day/foot
gpm	gallons per minute
HSC	hydrogeologic site characterization
HCO_3	bicarbonate alkalinity
K	potassium
LCRSs	leachate collection and removal systems
LFG	landfill gas
LSCSs	leachate secondary collection systems
LFG	landfill gas
meq/L	milliequivalents per liter
Mg	magnesium
mg/L	milligrams per liter
Mn	manganese
Na	sodium
Ni	Nickel
OWRD	Oregon Water Resources Department
Psig	pounds per square inch gauge
RCRA	Resource Conservation and Recovery Act
RL	Riverbend Landfill
RLC	Riverbend Landfill Company
SCS	SCS Engineers
SO_4	sulfate
SSL	site-specific limit
TDS	total dissolved solids

ACRONYMS AND ABBREVIATIONS (CONTINUED)

TSS	total suspended solids
V	vanadium
WBZ	water-bearing zone
Zn	zinc

1.0 INTRODUCTION

This report, prepared by SCS Engineers (SCS) on behalf of Riverbend Landfill Company (RLC), presents the findings and results of a Hydrogeologic Site Characterization (HSC) performed in support of a Permit Modification Application to expand the Riverbend Landfill (RL) in Yamhill County, Oregon. The expansion area consists of proposed Module 11, an approximately 29-acre, triangular-shaped area adjacent to the western edge of the existing landfill.

This report includes a comprehensive summary of numerous site characterizations and investigations performed at RL that are relevant to characterizing the hydrogeology of proposed Module 11, along with key results and findings from these studies. This extensive background information was used to develop RL's current monitoring program established in the site's approved Environmental Monitoring Plan (EMP; SCS, 2014). The background information also formed the basis for (1) defining the HSC scope of work to augment the existing hydrogeologic information for proposed Module 11, and (2) interpreting and validating the hydrogeologic conditions of the proposed Module 11 area.

The HSC was performed in accordance with a HSC work plan dated February 13, 2015 (SCS, 2015a) that was conditionally approved by the Oregon Department of Environmental Quality (DEQ, 2015a). The following was stated in the DEQ's review letter of the work plan:

> "*DEQ agrees there is an abundance of existing data, and in general, the proposed work plan adequately captures the needs of characterizing the geology and hydrogeology of the expansion area. However, DEQ recommends the site characterization work include conducting an aquifer test using one of the site's production wells (PW-1, MB-1, or MB-2). The goal of this test is to determine the extent of communication between the shallow and deep water-bearing zones of this area.*"

A revised work plan dated April 23, 2015 was subsequently submitted to the DEQ that included an additional task to perform an aquifer pumping test using production well PW-1 (SCS, 2015b). The DEQ approved the revised work plan and proposed methodology for the PW-1 aquifer pumping test in an email correspondence dated May 18, 2015 (DEQ, 2015b).

1.1 SITE DESCRIPTION

RL is located approximately 3 miles southwest of McMinnville, Oregon, in Yamhill County (see Figure 1-1). RL is owned and operated by RLC, and is permitted by the DEQ to receive municipal solid waste and approved special waste.

The RL property boundary, various site features, and proposed Module 11 are shown in Figure 1-2. The RL property encompasses over 500 acres of which the permitted landfill occupies approximately 85 acres. The north and south poplar tree farms are located to the west and southwest, respectively, of the landfill and occupy approximately 43 acres. Proposed Module 11 will occupy the north poplar tree farm area.

An RV Park is located between the landfill and south poplar tree farm. The South Yamhill River borders the site to the south, and agricultural land surrounds the site to the north, west, and east.

1.2 PURPOSE AND OBJECTIVES

The purpose of the HSC was to characterize the hydrogeologic conditions of proposed Module 11 to meet the requirements specified in the following:

- Resource Conservation and Recovery Act (RCRA) Subtitle D (40 CFR Part 258) regulations, and Oregon Solid Waste Regulations (Oregon Administrative Rule [OAR] Chapter 340, Division 40 and 93 through 97).
- Section 12, Site Characterization, of RL's Solid Waste Disposal Permit No. 345 (SWDP) issued by the Oregon Department of Environmental Quality (DEQ) in December 1999.
- Section 3, Phase II Landfill Site Characterization, of the DEQ's Solid Waste Landfill Guidance document dated September 1, 1996 (DEQ, 1996).

The primary objective of the HSC was to demonstrate that the characterized hydrogeologic conditions within proposed Module 11 are consistent with the site conceptual hydrogeologic model (CHM) previously developed for RL. The CHM is based on the numerous phases of site characterizations and investigations performed at RL to assess the site-wide hydrogeologic conditions, including stratigraphy, nature and extent of water bearing zones (WBZs), hydraulic characteristics of the WBZs, and groundwater quality. The following specific-site conditions were evaluated consistent with required HSC elements described in Section 3 of the Solid Waste Landfill Guidance document (DEQ, 1996):

- Hydrogeologic characteristics including hydrostratigraphy; nature, extent and hydraulic characteristics of target WBZs; seasonal groundwater levels and fluctuations; groundwater flow direction and velocity; and potential contaminant transport pathways.
- The chemistry and quality of background (i.e., naturally occurring) groundwater conditions of target WBZs.
- The existing groundwater monitoring network at RL and its effectiveness at monitoring groundwater quality in target WBZs hydraulically downgradient of proposed Module 11.

1.3 REPORT ORGANIZATION

The remainder of this report is organized as follows:

- Section 2.0 describes the regional setting of RL.
- Section 3.0 summarizes background information on the geology, hydrogeology and groundwater chemistry relevant to proposed Module 11.

- Section 4.0 describes details and results of additional data collection efforts performed for this HSC.
- Section 5.0 presents the HSC findings.
- Section 6.0 provides conclusions and recommendations for proposed monitoring network modifications for proposed Module 11.
- Section 7 provides references of documents cited in the report.

The following supporting documentation is provided in the report appendices:

- Appendix A includes borehole logs and well construction diagrams for existing and former wells and borings in the proposed Module 11 area.
- Appendix B presents historical groundwater elevation data for site wells and piezometers, and groundwater elevation hydrographs for monitoring wells and piezometers in the proposed Module 11 area.
- Appendix C includes Module 11 area surficial soil type data sheets.
- Appendix D provides supporting documentation for slug testing of piezometer GT-10-1 and the aquifer pumping testing of production well PW-1.
- Appendix E provides supporting documentation for the water-use survey update.
- Appendix F includes a previously-prepared memorandum presenting an evaluation of historical groundwater elevations in the proposed Module 11 expansion area, dated April 23, 2015.
- Appendix G provides groundwater time-concentration graphs and geochemical diagrams (e.g., Piper [Trilinear] and Stiff plots) for proposed Module 11 area monitoring wells and piezometers.

A PDF copy of the entire report is provided on a compact disk (CD) on the back cover of the report.

2.0 REGIONAL SETTING

The following information related to the regional setting of RL was obtained from the *Additional Hydrogeological Investigation* (AHI) report for RL (EMCON Northwest, Inc. [EMCON], 1994).

2.1 PHYSIOGRAPHY

RL is situated within the northern Willamette Basin physiographic province north of the South Yamhill River. The basin is characterized by a series of uplands bounded by low-lying plains and valleys. The subbasin between the Eola Amity Hills to the east and the foothills of the Coast Range to the west is known as the West Valley Plain (Price, 1967). The West Valley Plain consists of an undulating surface of bedrock hills that outcrop locally from beneath overlying terrace sediments. The sediments were deposited within the Yamhill Valley downwarp, a structural trough trending eastward and generally coinciding with the South Yamhill River for most of its length.

Foothills of the Coast Range outcrop approximately 1.5 miles to the northwest, along the northwest flank of the Willamette Basin. In the local area near RL, there are no bedrock outcrops, and the topography is divided into upper and lower river terraces, which differ in elevation by about 20 feet.

The area drains primarily to the South Yamhill River, which flows east and north from the Coast Range and joins the North Yamhill River about 2 miles northeast of McMinnville, Oregon. From that confluence, the Yamhill River flows east and drains into the Willamette River. Near RL there are various unnamed drainages that originate in uplands to the northeast of RL, dissect the terraces, and drain into the South Yamhill River. An evaluation of geomorphic conditions of the South Yamhill River in the vicinity of the Riverbend Landfill was performed by Waterway Consulting, Inc. (2015) and included as Attachment 5 in the Permit Modifications Application for the Riverbend Landfill Proposed Module 11 Expansion (SCS/Geosyntec, 2015).

2.2 CLIMATE

The McMinnville area has a temperate climate, with mild, wet winters and warm, dry summers. Most precipitation falls between October and May, with over 50 percent of the average annual precipitation occurring from November through January. Average rainfall for McMinnville, Oregon, is about 44 inches. The average annual temperature in McMinnville is about 52 degrees Fahrenheit (^{o}F). The hottest month is July, with an average temperature of about 65 ^{o}F, and the coldest month is January, with an average temperature of about 38 ^{o}F.

2.3 REGIONAL GEOLOGY AND HYDROGEOLOGY

The regional geologic units in the vicinity of RL include, from oldest to youngest, the upper Eocene Nestucca Formation (which comprises the bedrock beneath RL), Pliocene sands and gravels, Quaternary Willamette Silt, and younger (Recent) fine-grained alluvium associated with the Willamette River and its tributaries (Price, 1967). Detailed descriptions of these geologic units are provided in Section 3.0.

Groundwater occurs under various hydrogeologic conditions in both bedrock and surficial geological materials in the vicinity of RL. In the Nestucca Formation, groundwater moves through a network of interconnected fractures, which, because of the low permeability associated with fractured rocks, generally provides low yields to wells. Locally, however, well yields may be sufficient for domestic water supply use. Groundwater in the bedrock occurs under confined to semi-confined conditions.

Of the overlying surficial units, the Pliocene sand and gravel unit represents the region's primary WBZ because it is relatively permeable. The Quaternary, fine-grained deposits are not considered a significant regional WBZ because of their low permeability; nevertheless, some well have been documented to draw groundwater from this WBZ.

3.0 EXISTING GEOLOGIC AND HYDROGEOLOGIC INFORMATION AND DATA

This section summarizes background information on the geology, hydrogeology, and groundwater chemistry at RL and its relevance to the proposed Module 11 expansion. The background information is based on (1) information collected as part of previous hydrogeologic investigations (EMCON, 1993b, 1994, 1995, 1996; CH2M Hill, 2000; SCS, 2011), and (2) groundwater data (elevations and chemistry) collected since 1993 that is presented and evaluated in the annual environmental monitoring reports (AEMRs). In general, the investigations included drilling exploratory borings, installing monitoring wells and piezometers, conducting geophysical investigations, collecting and analyzing soil and groundwater samples, and evaluating aquifer hydraulic parameters.

3.1 INVESTIGATION HISTORY IN PROPOSED MODULE 11

As shown in Figure 3-1, numerous historical exploratory boreholes, monitoring wells, and piezometers have been advanced throughout the RL site. Many of these borehole locations are within or in close proximity to proposed Module 11, including numerous geotechnical borings, monitoring wells MW-1A, MW-1B, MW-10A, MW-10B, MW-18A, MW-18B, MW-20A, MW-20B, and piezometers P-05A, P-06A, and GT10-1. Table 3-1 summarizes construction information for existing wells and piezometers at RL.[1] Borehole logs and well construction diagrams for existing and former monitoring wells, piezometers, and borings within or in close proximity to proposed Module 11 are also provided in Appendix A.

Key reports summarizing the hydrogeologic conditions at RL, with descriptions of work specifically performed in the proposed Module 11 area, are summarized in Table 3-2 and discussed below.

- AHI (EMCON, 1994). This report presented a comprehensive hydrogeologic characterization of the current permitted footprint of the landfill in support of a lateral expansion. The AHI involved extensive subsurface drilling, monitoring well installations, geophysical methods (borehole geophysics, cone penetrometer soundings, and seismic refraction studies), and groundwater monitoring, including the following performed in proposed Module 11:
    - Well pair MW-10A and MW-10B was installed on the upgradient (west) edge of proposed Module 11. Wells MW-10A and MW-10B have been sampled for background water quality data from 1993 through 1997, from 2000 to 2003, and most recently in 2008 and 2013 as part of RL's approved five-year comprehensive monitoring events.

[1] The "A" designation denotes wells screened in the upper (shallow) silt-clay WBZ, and the "B" designation denotes wells screened in the lower (deep) sand-gravel WBZ. One exception is the monitoring well pair MW-1A and MW-1B whose designations are reversed from this nomenclature.

- Former piezometer pair P-04A/P-04B (decommissioned in 2013) was installed to monitor groundwater levels and was located near the southeast corner of proposed Module 11. Piezometer P-04B was drilled into the depth of bedrock.

- Exploratory boring EW-1 was drilled along the eastern edge of proposed Module 11. This boring was advanced into the depth of bedrock.

- Technical Memorandum (re: Installation of Eight Monitoring Wells at Riverbend Landfill) (CH2M Hill, 2000). This memorandum described the installation of eight monitoring wells, including monitoring well pairs MW-18A/MW-18B and MW-20A/MW-20B in proposed Module 11. These wells were installed to expand the RL's monitoring network for monitoring groundwater quality in the poplar tree farm irrigation areas. Wells MW-20A and MW-20B were incorporated into RL's detection monitoring program after they were installed and have since been sampled on a routine (semiannual basis). Well pair MW-18A/MW-18B was sampled for background groundwater quality data from 2001 to 2003 and most recently in 2008 and 2013 as part of RL's approved five-year comprehensive monitoring events.

- Water Quality Assessment of the North Poplar Tree Farm (Shaw Environmental, Inc. [Shaw], 2006). A water-quality assessment was conducted in 2005 to further investigate changes in groundwater conditions observed in the vicinity of the north poplar tree farm area. As part of this assessment, two shallow piezometers (P-05A and P-06A) were installed and four direct-push borings were drilled and sampled in the area of the north poplar tree farm area (i.e., proposed Module 11 expansion area) to provide additional groundwater quality information and refine the interpretation of groundwater flow in this area. These piezometers were incorporated in RL's detection monitoring program after they were installed and have since been sampled on a routine basis (i.e., semiannual or annual).

- Report of Drilling and Piezometer/Monitoring Well Installations for Hydrogeologic Site Characterization in Support of Landfill Expansion Permitting (SCS, 2011). A hydrogeologic site characterization and geotechnical investigation were performed in 2010 associated with expansion permitting in 2010 for a former proposed expansion design. The work included drilling and sampling three geotechnical boreholes (GT-10-01, GT10-02, and GT10-03) within proposed Module 11. Borehole GT-10-01 was converted to a piezometer for groundwater elevation monitoring. Boreholes GT10-02 and GT10-03 were drilled into bedrock.

- Phase 1 MSE Berm – Updated Permit Design Report (Geosyntec Consultants, 2012). Two phases of geotechnical investigations were performed in 2011 and 2012 by Geosyntec Consultants (Geosyntec) to characterize geotechnical subsurface conditions and to address geotechnical landfill design considerations for Phase 1 of the mechanically stabilized earthen (MSE) berm adjacent to the existing western landfill boundary. Several boreholes were drilled in or surrounding proposed Module 11: GT11-01, GT11-02, GT12-01A through GT12-06A, GT12-01B through GT12-06B, and GT12-07 through GT12-13. Boreholes GT12-05A and GT12-06A were drilled into bedrock.

- Module 11: Summary of Field Investigation and Laboratory Testing Programs (Geosyntec, 2015). Geosyntec conducted geotechnical investigations in 2013 and 2014 for proposed Module 11 permitting. This work included: 1) drilling/sampling 6 boreholes in 2013 (GT13-01 through GT13-05, GT13-16, and GT13-17) for planned enhancement of the existing flood control berm along the southwestern edge of the landfill, and 2) drilling/sampling 15 boreholes (GT14-01 through GT14-15) in the proposed Module 11 area. Soil samples were collected during drilling for geotechnical laboratory testing. Boreholes GT14-02 through GT14-07 were drilled into bedrock. The investigation report included, for completeness, all geotechnical investigation boring logs from 2010 through 2014 in support of proposed Module 11 landfill expansion permitting, including logs for boreholes identified above.[2]

- Annual Environmental Monitoring Reports. Existing piezometers and monitoring wells installed in or near proposed Module 11 have provided extensive information on background groundwater quality and groundwater flow conditions based on routine monitoring, in some cases since 1993. Currently, routine semiannual groundwater monitoring is performed as part of RL's environmental monitoring program consistent with the site's EMP (SCS, 2014). The results of routine groundwater monitoring, including wells/piezometers located in and surrounding proposed Module 11, are presented and interpreted in RL's AEMRs, including most recently in the 2014 AEMR (SCS, 2015c).

3.2 SITE GEOLOGY

Four geologic units beneath and in the vicinity of RL are important from a hydrogeologic perspective. From oldest to youngest, these geologic units include:

- Eocene-age Nestucca Formation bedrock.
- Pliocene-age sands and gravels, which overlie the Nestucca Formation and underlie more recent alluvial sediments.
- Early to middle Quaternary-age Willamette Silt alluvium. The Willamette Silt comprises the upper and lower river terraces near RL.
- Late Quaternary (Recent)-age alluvium associated with the recent floodplain of the South Yamhill River.

In general, these geologic units are flat-lying and relatively uniform across the entire site.

[2] Additional borings were drilled in 2013 and 2014 along the existing flood control berm or in the area of formerly proposed Module 10 north of the existing landfill near the entrance facilities (these borings are shown in Figure 3-1). The boring logs for these additional boreholes are not included in Appendix A. .

3.2.1 Nestucca Formation

Select borings at the RL site penetrated Nestucca Formation bedrock only to confirm its presence, and therefore the borings did not extend more than 11 feet into bedrock (typically less than 5 feet). The Nestucca Formation bedrock underlying RL is composed of basaltic lava flows or marine sediments primarily consisting of siltstone. Nestucca Formation bedrock was encountered in several boreholes (EW-1, P-04B, GT10-02, GT10-03, GT12-05A, GT12-06A, and GT14-03 through GT14-07) in the proposed Module 11 area at depths ranging from approximately 46 to 84 feet below ground surface (bgs).

3.2.2 Sand-Gravel Unit

Overlying the Nestucca Formation is a mostly laterally continuous Pliocene unit consisting of sandy gravels and gravelly sands, with localized interbeds of clayey and silty gravels and clay and silt lenses. The sand-gravel material is generally well-graded, angular to subrounded, and in places, cemented. The gravel consists primarily of fine-grained volcanic and marine sedimentary rocks. Silty and clayey sands and gravels of variable thickness occur near or at the top of the unit.

The elevation of the top of the sand-gravel unit is relatively uniform across RL, ranging from approximately 87 to 112 feet msl. The overall thickness of the unit, however, varies widely due to variations in the elevation of the underlying bedrock surface. The thickest deposits occur in the northwest part of RL in proposed Module 11 where the unit was found to be greater than 44 feet thick in borehole GT14-02. The unit generally thins towards the east to southeast where it was found to be less than 10 feet thick in some boreholes along the eastern and southern edges of the existing landfill, and towards the southwest where it was absent in borehole GT10-10.

The thickest deposits within proposed Module 11 were found to be 43.5 feet thick in boring EW-1 (western edge) and greater than 44 feet thick in borehole GT14-02 (northern corner). The unit's thickness along the southern edge of proposed Module 11 ranges from 34.5 feet in borehole GT14-07 to 5.5 feet in the well MW-18B borehole.

3.2.3 Quaternary Alluvial Deposits (Silt-Clay Unit)

Two Quaternary alluvial units are present at RL: early to middle Quaternary Willamette Silt and Late Quaternary silt-clay unit. The materials in both units are similar and consist of bedded silts, clays, clayey silts, silty clays, and minor amounts of silty fine sand. The deposits range in thickness from 17 feet near MW-21A, in the southern portion of the site, to 63 feet near SB-17B, in the extreme southwest part of the site (CH2M Hill, 2000). Within the proposed Module 11 area, the unit ranges in thickness from approximately 31 feet at borehole GT14-07 in the southern portion of Module 11, to approximately 50 feet at borehole GT12-01A in the far northern corner of Module 11.

3.3 SITE HYDROGEOLOGY

The shallow silt-clay alluvial deposits (both the Willamette Silt and the late-Quaternary alluvium) and underlying deep sand-gravel deposits contain either localized or regionally extensive, near-surface WBZs. As a result, groundwater monitoring at RL is performed in the shallow silt-clay WBZ and the hydraulically separate deep sand-gravel WBZ. Groundwater elevations and hydraulic characteristics of these WBZs are described in this section.

As previously mentioned, the Nestucca Formation bedrock has typically low permeability, and groundwater has not been encountered in the uppermost portion of this unit beneath the RL site. As such, groundwater monitoring of the Nestucca Formation bedrock is not performed at RL.

3.3.1 Shallow Silt-Clay Water-Bearing Zone

Groundwater elevations, flow directions, and hydraulic gradient in the silt-clay WBZ at RL have been previously determined based on historical depth-to-groundwater measurements from the existing groundwater monitoring network of wells and piezometers. Historical depth-to-groundwater measurements and corresponding groundwater elevations for the site monitoring wells and piezometers, including those in the proposed Module 11 area are provided in Appendix B.

Groundwater elevations are highest at the northwest corner of the RL property (i.e., northern portion of proposed Module 11) and decrease towards the river. Groundwater elevations typically fluctuate seasonally in response to precipitation, with groundwater elevations showing seasonal variations typically between 5 to 10 feet in individual monitoring wells or piezometers. The seasonal fluctuations are exhibited in the groundwater elevation hydrographs in Appendix B (for Module 11 area monitoring wells and piezometers) that are paired with site precipitation data.

Figures 3-2 and 3-3 show typical groundwater flow directions in the shallow silt-clay WBZ across the site based on depth-to-groundwater measurements in April and November 2014, respectively. The direction of groundwater flow in the shallow silt-clay WBZ is predominantly south-southeast, towards the South Yamhill River. In the extreme southwestern portion of the site, groundwater flow is predominantly toward the east following topography and groundwater discharge features. The contour maps show that groundwater within proposed Module 11 flows southeasterly. Across most of RL, the groundwater flow direction and hydraulic gradient in the shallow silt-clay WBZ show minor seasonal and spatial variability, typically in response to variations in seasonal precipitation patterns.

Groundwater gradients in the shallow silt-clay WBZ historically ranged from approximately 0.005 to 0.01 foot per foot (ft/ft) (SCS, 2014). Average groundwater flow velocities in the shallow WBZ ranged from 0.1 to 16.2 feet per year (ft/yr).[3]

[3] Groundwater flow velocities in the shallow WBZ were estimated using (1) an average seasonal gradient of 0.005 to 0.007 ft/ft, (2) hydraulic conductivity values ranging from 4.68×10^{-4} to 2.08×10^{-6} centimeters per second (cm/sec), as determined from slug tests performed as part of the AHI (EMCON, 1994), and (3) an effective porosity of 15 percent.

Historical groundwater-level data for monitoring wells screened in the shallow silt-clay WBZ near the South Yamhill River indicate groundwater elevations in those wells are higher than the river elevation, indicating that groundwater in the shallow silt-clay WBZ discharges to the river. This relationship between the South Yamhill River and groundwater indicates that the South Yamhill River acts as a hydraulic boundary to groundwater flow in the shallow silt-clay WBZ (SCS, 2014).

3.3.2 Deep Sand-Gravel Water-Bearing Zone

Groundwater elevations, flow directions, and hydraulic gradient in the sand-gravel WBZ at RL have been previously determined based on historical depth-to-groundwater measurements (provided in Appendix B) from the existing groundwater monitoring network of wells and piezometers. Similar to the shallow WBZ, groundwater elevations are highest at the northwest corner of the RL property (i.e., northern portion of proposed Module 11) and decrease towards the river, and groundwater elevations typically fluctuate seasonally in response to precipitation (see groundwater elevation hydrographs in Appendix B).

Figures 3-4 and 3-5 show typical groundwater flow directions in the deep sand-gravel WBZ across the site based on depth-to-groundwater measurements in April and November 2014, respectively. In most areas of RL, including the proposed Module 11 area, groundwater flow is toward the southeast, in the direction of the South Yamhill River, and shifts southward as it approaches the river. The groundwater flow direction and gradient in the deep sand-gravel WBZ do not vary significantly as a result of seasonal changes in precipitation. The historical seasonal range of groundwater gradients was generally from 0.0088 to 0.012 ft/ft. The average groundwater flow velocity in the lower sand-gravel WBZ was approximately 124 ft/yr.[4]

RL has two production wells, designated as PW-1 and MB-1, located near the facility entrance. The wells were constructed and draw groundwater from the deep sand-gravel WBZ. Former production well MB-2 was located near the facility entrance and was decommissioned in June 2015. During the dry season, when PW-1 and MB-1 are used most frequently, groundwater elevations in the sand-gravel WBZ are affected in the northwest corner of RL by production well pumping.

3.3.3 Hydraulic Conductivities

Slug testing has previously been performed to evaluate hydraulic conductivities in the shallow and deep WBZs across the site, including wells and piezometers located within or in close proximity to proposed Module 11. These included slug tests performed in wells MW-10A, MW-10B, and P-04A as part of the AHI (EMCON, 1994), and wells MW-18B, MW-20A, and MW-20B (and MW-17A and MW-19A to the south) as part of the expansion of RL's groundwater monitoring network in the north and south poplar tree farm areas (CH2M Hill, 2000). Table 3-3 presents a summary of slug testing results for these and other former or existing wells and piezometers at RL.

[4] Groundwater flow velocities in the deep WBZ were estimated using an average seasonal gradient of 0.01 ft/ft, a hydraulic conductivity value of 3.6×10^{-3} cm/sec, as determined from a variable discharge test performed as part of the AHI (EMCON, 1994), and an effective porosity of 30 percent (SCS, 2013).

The slug testing results showed hydraulic conductivities in the shallow WBZ in the area of proposed Module 11 were 1.88 x 10^{-4} to 2.55 x 10^{-3} cm/sec at the monitoring well P-04A and MW-10A locations, respectively. These values are consistent with the average hydraulic conductivity value of 1.72 x 10^{-3} cm/sec for the shallow WBZ across the site (based on values presented in Table 3-3). Slug testing of deep WBZ wells located generally upgradient and downgradient of proposed Module 11 showed hydraulic conductivity values of 4.38 x 10^{-3} and 4.66 x 10^{-2} cm/sec, respectively. These values are generally consistent with the average hydraulic conductivity value of 6.94 x 10^{-3} cm/sec for the deep WBZ across the site (based on values presented in Table 3-3).

3.3.4 Vertical Hydraulic Gradients and Hydraulic Connection Between WBZs

Trends in groundwater elevations between the shallow silt-clay and deep sand-gravel WBZs (exhibited by adjacent shallow and deep monitoring well pairs) are generally similar, with periods of high and low elevations occurring seasonally at the same time of the year (see hydrographs in Appendix B). Groundwater elevations in shallow WBZ wells/piezometers are typically higher than those in the associated deep WBZ wells/piezometers. This relationship is illustrated in Figure 3-6 that presents groundwater elevation hydrographs for shallow and deep well pairs in the proposed Module 11 area. The magnitude of the water-level fluctuations can vary across the site in response to recharge (SCS, 2014).

The relative degree of hydraulic connection between the shallow and deep WBZs was evaluated by conducting a pumping test using monitoring well MW-3B (EMCON, 1994). The results of the EMCON evaluation indicated that there was no response to pumping in the shallow WBZ, indicating a very low degree or no hydraulic connection between the two WBZs and that groundwater within the deep WBZ occurs under confined conditions. It should be noted that a new pumping test using production well PW-1 was completed as part of the Module 11 HSC in July 2014, as requested by the DEQ, to evaluate the relative degree of hydraulic connection between the shallow and deep WBZs in the proposed Module 11 area. The results from the pumping test are discussed in Section 4.3, and details of the pumping test procedures and presentation of data are provided in Appendix D. The results of the pumping test corroborate the previous studies performed in 1994 and confirm that the two WBZs are hydraulically isolated from one another.

3.4 GROUNDWATER QUALITY

The following information related to the general groundwater chemistry in the target WBZs was obtained from the 2013 EMP (SCS, 2013) and recent AEMRs, and is based in part on groundwater chemistry data collected from wells installed near or within the proposed Module 11 area.

3.4.1 Shallow Silt-Clay Water-Bearing Zone

Shallow WBZ groundwater has a pH generally less than 8.0, is classified as moderately hard to hard (EMCON, 1994), and is characterized by the predominance of calcium (Ca), magnesium (Mg), and bicarbonate ions (HCO_3). Manganese (Mn) is routinely detected above the secondary regulatory standard (0.05 milligrams per liter [mg/L]) in groundwater collected from most upgradient and downgradient monitoring wells screened in the silt-clay WBZ. Iron (Fe) is commonly detected in

groundwater samples collected from the shallow WBZ; however it is found at concentrations above the secondary standard detected (0.3 mg/L) only in samples collected from a few upgradient and downgradient wells.

While the relative concentrations of inorganic parameters in groundwater samples collected from the silt-clay WBZ are generally consistent among wells, some parameter concentrations vary spatially, with higher concentrations detected in both upgradient and downgradient wells (e.g., Fe). The variability can be attributed to the lithologic heterogeneity of the shallow silt-clay WBZ. The spatial variability also reflects potential variations in hydraulic conductivity, which may serve to increase groundwater residence time in localized zones across RL.

The most common trace metals detected in groundwater samples from the silt-clay WBZ are arsenic (As), barium (Ba), chromium (Cr), copper (Cu), and zinc (Zn), each of which occurs naturally in soil (EMCON, 1994). The metals are widely distributed and have been detected in samples collected from both upgradient and downgradient wells. The correlation between total metals and high levels of total suspended solids (TSS) indicates that the detected metals represent naturally-occurring elements in the fine-grained soils. Higher concentrations that have historically been detected are most likely related to high concentrations of particulates in unfiltered samples.

Analytical results of groundwater samples collected from detection monitoring well MW-20A located downgradient of the north poplar tree farm area (i.e., proposed Module 11) have shown increasing concentration trends for several inorganic parameters (including Ca, Cl, Mg, Na, and total dissolved solids [TDS]) (SCS, 2015c). Leachate irrigation of the poplar tree farms was voluntarily terminated by RLC in 2013 (CH2M Hill, 2013); the poplar trees have been irrigated exclusively by precipitation since 2013.

3.4.2 Deep Sand-Gravel Water-Bearing Zone

Groundwater in the deep sand-gravel WBZ is classified as hard to very hard (EMCON, 1994), and is characterized by the predominance of Ca, Mg, and HCO_3 ions (similar to the shallow WBZ). Groundwater samples collected from upgradient and downgradient monitoring wells screened in the sand-gravel WBZ typically contain Mn, and to a less frequent degree Fe, at concentrations above the secondary standard. In addition, Cl and TDS have been detected above their secondary drinking water standards (250 and 500 mg/L, respectively) in groundwater collected from former upgradient well MW-8B and compliance well MW-12B. Previous site investigations showed that (1) the higher concentrations of inorganic constituents in groundwater samples collected from compliance well MW-12B were representative of natural groundwater conditions influenced by the vertical flow from the underlying bedrock (marine sedimentary rocks), and (2) the degree of spatial and temporal variation in groundwater chemistry in the sand-gravel WBZ beneath the site is pronounced.

Eleven metals have previously been detected at low-to-trace concentrations in groundwater samples collected at RL from the sand-gravel WBZ. The most commonly detected metals are Ba, cobalt (Co), Cu, nickel (Ni), vanadium (V), and Zn. The presence of these metals in unfiltered samples from upgradient wells demonstrates that they occur naturally in the sand-gravel WBZ.

3.5 WATER-USE SURVEY

Water uses in the vicinity of RL were previously assessed as part of a water-use survey performed in 1993 (EMCON, 1993a). The survey included:

- Reviewing agency files to compile information on water wells on site and within a 1-mile radius of RL, extending south to the South Yamhill River (i.e., southern extent of survey area).
- Performing a door-to-door survey to identify undocumented groundwater use.
- Identifying groundwater wells and surface water rights on a location map.
- Compiling well construction data from driller's logs and from oral reports provided by well owners.

Additional water-use information was collected in 1993 and 1994 and summarized in the AHI report (EMCON, 1994). Results of the water-use surveys as presented in the AHI report (EMCON, 1994) are provided below. An updated water-use survey was performed as part of the Module 11 HSC and the results are presented in Section 4.4 of this report.

Twenty-five active wells were identified within a 1-mile radius of RL, with pumping principally from the Pliocene sand and gravel deposits and lesser quantities derived from underlying marine sediments and basalts. Drillers' logs indicated that eight wells were screened in the sand-gravel WBZ, and six wells were inferred to be pumping groundwater from this WBZ based on their completion depths. Four wells pumped groundwater from bedrock zones as indicated by drillers' logs, and one well was inferred to be screened in bedrock from its completion depth. An older water-supply well on the landfill was decommissioned in 1989. Insufficient information was available for six wells to assess what groundwater zone they were screened in.

Regional groundwater studies documented that wells completed in the sand-gravel WBZ can yield up to 75 gallons per minute (gpm). The bedrock aquifer generally yields less than 10 gpm (Price, 1967). Average pumping rates for wells within a 1-mile radius of RL, estimated from short term pumping tests reported on drillers' logs, were generally within these ranges. Driller's logs for four wells screened in the sand-gravel WBZ documented pumping rates ranging from 20 to 40 gpm. Drawdowns recorded during the tests were noted to range from 22 to 57 feet.

Groundwater was reportedly used primarily for domestic purposes; a secondary use was for agricultural purposes including irrigation and livestock watering. A few wells were shared by several residences, and one supplied domestic and irrigation water to trailer park residents.

Water quality information was not recorded on drillers' logs. In response to the door-to-door survey, two residences described the water quality from their wells as hard, saline, or having a sulfur smell. The well described as producing hard and saline water appears to penetrate bedrock WBZs based on its depth and location. Such water quality is consistent with regional water quality data from wells that produce groundwater from bedrock WBZs.

3.6 SITE CONCEPTUAL HYDROGEOLOGIC MODEL

The shallow silt-clay alluvial deposits (both the Willamette Silt and the late-Quaternary alluvium) and underlying deep sand-gravel deposits contain either localized or regionally extensive, near-surface WBZs. Therefore, the site CHM summarizes what is known about the nature and characteristics of these hydrostratigraphic units.

The shallow silt-clay WBZ comprises the primary target hydrostratigraphic unit at the site with respect to groundwater quality monitoring for early detection of a potential release from the landfill. The shallow WBZ is laterally continuous across the site and extends to depths ranging from approximately 17 feet (in the southern portion of the site) to 63 feet (in the extreme southwest part of the site). Shallow WBZ groundwater occurs under unconfined conditions and receives direct recharge from infiltration of precipitation. Groundwater elevations fluctuate seasonally in response to precipitation amounts during wet and dry seasonal cycles. Shallow WBZ groundwater generally flows south and southeast towards the South Yamhill River, which functions as a discharge boundary (i.e., shallow WBZ groundwater discharges to the river). This discharge boundary acts as a hydraulic barrier that prevents shallow WBZ groundwater beneath the site from migrating to areas south of the South Yamhill River.

The deep sand-gravel WBZ underlies the shallow silt-clay unit and represents a secondary target hydrostratigraphic unit at the site with respect to groundwater-quality monitoring. The deep WBZ is laterally continuous across most of the site; however, its overall thickness varies widely due to variations in the elevation of the underlying bedrock surface. For example, the deep WBZ is greater than 44 feet thick in the northwest area of the site that includes proposed Module 11. The WBZ thins towards the southwest where it was found to be absent in one borehole. Deep WBZ groundwater occurs under confined conditions (perhaps semi-confined locally) and likely receives recharge from infiltration and very slow percolation of groundwater from the overlying shallow WBZ (predominantly from areas upgradient of RL), and possibly to a lesser extent from upward leakage of confined groundwater in the underlying Nestucca Formation bedrock. Groundwater elevations fluctuate seasonally in response to precipitation amounts during wet and dry seasonal cycles. Deep WBZ groundwater generally flows to the south and southeast beneath RL and has been shown to have a very low degree or no hydraulic connection with the shallow WBZ beneath the site.

The deep WBZ represents the primary, beneficial use WBZ in the vicinity of RL because it is relatively permeable and provides appreciable quantities of water to wells. The shallow WBZ is not considered a significant regional aquifer because of its low permeability. It is important to note, however, that there are no beneficial uses of groundwater in either WBZ in the small, undeveloped area between the existing landfill and the South Yamhill River. This area is owned by RLC and beneficial use of groundwater in this area is unlikely in the future.

4.0 HSC TASK METHODS AND RESULTS

This section describes methods and results of additional data collection efforts performed for this HSC to augment the existing hydrogeologic information for the proposed Module 11 area. Specifically, the following four tasks were performed consistent with the methods and procedures described in the DEQ-approved HSC work plans (SCS, 2015a and 2015b):

- Identify near-surface geology and surficial soil types.
- Conduct hydraulic conductivity testing in piezometer GT-10-1.
- Perform a pumping test of production well PW-1.
- Update the water-use survey.

4.1 NEAR-SURFACE GEOLOGY AND SURFICIAL SOIL TYPES

The near-surface geology within the proposed Module 11 area was evaluated by reviewing existing borehole logs for exploratory borings and monitoring wells drilled in this area. Information from all borehole logs indicates that the near-surface geology is comprised of the shallow silt-clay alluvial deposits. This hydrostratigraphic unit was previously described in Sections 3.2 and 3.3.

Surficial soil types were identified and delineated using the Web Soil Survey maintained by the Natural Resource Conservation Service (NRCS), a division of the U.S. Department of Agriculture (NRCS, 2015). Four soil types were identified within proposed Module 11 as follows: 1) Wapato silt clay loam, 2) Amity silt loam, (3) Woodburn silt loam (0 to 3 percent slopes), and (4) Woodburn silt loam (3 to 12 percent slopes). The areal distribution of these soil types within the proposed Module 11 area are shown in Figure 4-1. Data sheets describing in detail each of the soil types, downloaded from the Web Soil Survey website, are provided in Appendix C. Information provided in the data sheets include but is not limited to setting, composition, soil profile, soil properties, and soil qualities.

These findings indicate that the general surficial soil type (i.e., loam) and near-surface geology are laterally continuous across the proposed Module 11 area.

4.2 PIEZOMETER GT-10-1 HYDRAULIC CONDUCTIVITY TESTING

As previously mentioned, slug tests to evaluate hydraulic conductivity values were previously performed in shallow WBZ wells MW-10A, MW-20A, and former P-04A located generally at the upgradient and downgradient margins of proposed Module 11. Slug tests were also previously performed in deep WBZ wells MW-18B and MW-20B located generally at the upgradient and downgradient margins of proposed Module 11 (see Table 3-3), respectively. This current HSC included performing an additional slug test in shallow WBZ piezometer GT-10-1 (see Figure 1-2) on July 10, 2015, to provide an estimate of hydraulic conductivity in the central portion of proposed Module 11.

Rising head and falling head slug tests were performed in piezometer GT-10-11, consistent with the methodology described in the HSC work plan (SCS, 2015b). The slug testing field procedures, test data, and data evaluation methods are presented in Appendix D. The hydraulic conductivity values determined from the slug tests were 1.79 x 10^{-4} and 2.25 x 10^{-4} cm/sec (3.53 x 10^{-4} and 4.43 x 10^{-4} ft/min). These values are generally consistent with the average hydraulic conductivity value of 1.72 x 10^{-3} cm/sec for the shallow WBZ across the site (based on values presented in Table 3-3).

4.3 PRODUCTION WELL PW-1 PUMPING TEST

This sections summarizes the general methods and results of a pumping test using production well PW-1 (screened in the deep WBZ). The primary objective of this task was to evaluate the extent of hydraulic connection, if any, between the shallow and deep WBZs in the proposed Module 11 area. The testing was also performed to further evaluate hydraulic conductivity of the deep WBZ. The pumping test field procedures and data evaluation methods are described in detail in Appendix D, which also includes the pumping test raw data and relevant data analysis graphical plots.

The pumping test was conducted from July 6 to 10, 2015, consistent with the methodology presented in the HSC work plan (SCS, 2015b). The following summarizes the general test procedures:

- Nearby monitoring wells were used as water-level observation wells during the pumping test. Electronic pressure transducers/data loggers were deployed on July 4, 2015, into the following observation wells: (1) monitoring well pair MW-1A (deep)/MW-1B (shallow) located 55 and 60 feet, respectively, from well PW-1, and (2) the next closest monitoring well pair MW-10A (shallow)/MW-10B (deep) located approximately 600 feet from well PW-1 (see Figure 1-2). A transducer was also placed in pumping well PW-1 to monitor background water levels (prior to conducting the step-discharge and constant-discharge pumping tests) and water-level drawdown and recovery during and after the pumping test.

- Groundwater levels were also measured manually during the pumping test in monitoring well pair MW-18A and MW-18B and piezometers P05-A and GT-10-1, located between approximately 1,100 to 1,850 feet from well PW-1 (see Figure 1-2).

- Initially, a step drawdown pumping test was performed on July 6, 2015, to establish a sustainable pumping rate (i.e., a rate at which well PW-1 would not pump dry) for a follow-up constant rate discharge pumping test. Approximately 54 feet of water column above the transducer was available for water-level drawdown.

- A 24-hour, constant rate pumping test was initiated on July 7, 2015. After the pump was shut off on July 8, 2015, water-level recovery was recorded with the transducers until July 10, 2015.

The following summarizes the pumping test results:

- Based on the step drawdown pumping test, a pumping rate of 20 gpm was conservatively chosen for the constant rate pumping test to ensure that the well would not be pumped dry. This rate was maintained during the constant rate pumping test.

- Graphs of water-level drawdown and recovery data for wells PW-1 and MW-1A (deep WBZ) are provided in Figure 4-2. Total water-level drawdown in wells PW-1 and MW-1A were 24.0 and 11.0 feet, respectively. The drawdown curves are consistent with drawdown response in a confined WBZ. The storativity values calculated from the well MW-1A data (0.00021 to 0.00031 [dimensionless]) are also consistent with a confined WBZ (typically 0.005 or less [Fetter, 1988]), and are consistent with results obtained from the well MW-3B pumping test in 1993 (EMCON, 1993b) that ranged from 0.00027 to 0.00037.

- Transmissivity values for the deep WBZ range from 0.123 to 0.139 square feet per minute (ft^2/min) (1,325 to 1,493 gallons per day per foot [gpd/ft]). These values are consistent with results obtained from the well MW-3B pumping test in 1993 (EMCON, 1993b) that ranged from 359 to 1,920 gpd/ft.

- Hydraulic conductivity values for the deep WBZ, calculated using the transmissivity values noted above, range from 1.68×10^{-3} to 4.67×10^{-3} cm/sec (3.30×10^{-3} to 9.20×10^{-3} ft/min).[5] These values are generally consistent with the average hydraulic conductivity value of 6.94×10^{-3} cm/sec for the deep WBZ across the site (based on values presented in Table 3-3).

- A groundwater elevation hydrograph for shallow WBZ well MW-1B during the period of July 4 through July 10, 2015, is provided in Figure 4-3. Decreasing groundwater elevations were observed before the pumping test began (approximately 0.25 feet), and elevations were stable or increasing during the step drawdown and constant rate drawdown pumping tests. These data indicate there was no response to pumping in well MW-1B.

- Groundwater elevation hydrographs for well pair MW-10A (shallow) and MW-10B (deep) are also provided in Figure 4-3. Water-level drawdown response was observed in well MW-10B during both the step drawdown test (0.78 feet of drawdown) and constant rate test (2.1 feet of drawdown), and water-level recovery response was observed when the pump was shut off. No response to pumping was observed in well MW-10A; this well exhibited a general increasing groundwater elevation trend (with minor fluctuations) before and after the pumping tests began.

[5] Hydraulic conductivity was calculated using the equation K = T/b, where K is hydraulic conductivity, T is transmissivity, b is aquifer thickness. The aquifer thickness for wells PW-1 and MW-1A (37 and 15 feet, respectively) were determined from well log information.

The results of the pumping test corroborate the previous studies and confirm that the two WBZs are hydraulically isolated from one another.

4.4 UPDATE WATER-USE SURVEY

The updated water-use survey consisted of conducting an internet search of records available on the Oregon Water Resources Department (OWRD) website to (1) confirm the location and use of groundwater and surface water rights identified during the previous water-use surveys in 1993 and 1994 (EMCON, 1993a and 1994), and (2) identify any new groundwater users and surface water rights within a 1-mile radius of proposed Module 11 (excluding areas south of the Yamhill River) since the previous water-use surveys were performed.

4.3.1 Surface Water Rights

Records available from the OWRD Water Rights Information System (WRIS) webpage (OWRD, 2015a) were reviewed in June 2015 to evaluate surface water rights. The records were queried according the township, range, and section along the length of the South Yamhill River within a 1-mile radius of the landfill and proposed Module 11. The location queries included (1) Sections 11 and 12 of Township 5 South/Range 4 West (e.g., T5S/R4W), and (2) Section 6 of T4S/R4W (shown in Figure 4-4). The query search output results are provided in Appendix E.

SCS verified that all of the water rights originally identified in 1993 and 1994 (EMCON, 1993a; 1994) are active, except for EMCON No. 1 that was canceled in March 1998 (see Table 4-1). The diversion points for these surface water rights (from EMCON, 1993) are shown in Figure 4-4. SCS identified that (1) four of the water rights (Nos. 4, 14, 15, and 27 in Table 4-1) were transferred to new users and (2) three other water rights (Nos. 25, 26 and 28 in Table 4-1) were transferred to new stream diversion points located outside of the 1-mile radius. It should be noted that Water Right No. 2, which is a groundwater right, was determined to be outside the 1-mile radius from the proposed Module 11 area, and is therefore not shown in Figure 4-4. Documentation regarding these surface water rights was previously presented in the EMCON report (EMCON, 1993a) and therefore is not included in this HSC report.

SCS identified the following two new surface water rights within the evaluation area (see Table 4-1) that were issued after the 1993 and 1994 water use surveys were completed (EMCON, 1993a; 1994):

- **Water Right No. 31:** South Yamhill River stream diversion permit No. S51712 issued to John Bernards in 1994 for irrigation use.

- **Water Right Nos. 32 and 33:** Reservoir permit No. R11583 and associated surface water diversion permit No. S51714 issued to McPhillips Farms, Inc., in 1994 for irrigation use.

The diversion points for these two new water rights are shown in Figure 4-4. Copies of the permits and maps showing the two new diversion points are provided in Appendix E.

4.3.2 Water Well Records

Water Well Reports available from the OWRD's well log query webpage (OWRD, 2015b) were accessed and reviewed in June 2015. The records were queried for the following locations (shown in Figure 4-4):

- Sections 35 and 36 of T4S/R5W
- Section 31 of T4S/R4W
- Sections 1, 2, 11, and 12 of T5S/R5W
- Section 6 of T5S/R4W.

Only water supply wells were included in the query searches; monitoring wells and geotechnical borings were excluded. The Water Well Report query search output results are provided in Appendix E.

Table 4-2 presents previously-reported water supply well information, and Figure 4-4 shows their locations (Well Nos. 1 through 32; from EMCON, 1993a and 1994). The locations (and some supplemental information) for Well Nos. 1 through 27 were field verified through door-to-door surveys. Well Nos. 28 through 32 could not be matched to locations visited during the door-to-door surveys and were therefore identified on a map by well location information provided in the Water Well Reports.[6]

Water Well Reports were available on the OWRD website for 15 of the 27 water wells previously identified by EMCON (1993a and 1994). The 15 water wells are identified in Table 4-2 with an OWRD identification number (denoted with "YAMH"). The query search outputs do not indicate that any of the 15 water wells were abandoned and they are therefore presumed to still be in place and active (the query search outputs indicate if a well is new, abandoned, deepened, or altered). Additionally, there is no indication that the remaining water wells have been abandoned because well abandonments require a new start card and Water Well Report, and therefore would likely be listed in the query search outputs.

Of particular interest with respect to these previously identified water wells are those located in close proximity to and/or hydraulically downgradient of proposed Module 11 (i.e., between Module 11 and the South Yamhill River). The following describes wells matching these criteria:

- One domestic water well is located within proposed Module 11 affiliated with an abandoned residence (Well No. 8 ["Sanifill" well] in Table 4-2 and Figure 4-4). This well will have to be abandoned during development of proposed Module 11.
- There are two active water wells affiliated with the landfill operations that are located in the northwestern portion of the landfill in close proximity to proposed Module 11 (Well

[6] The OWRD Reports for wells included in the 1993 and 1994 surveys were presented in EMCON reports (1993a and 1994) and therefore are not included in this HSC report.

Nos. 4 and 6, referred to as MB-1 and PW-1, respectively, in Table 4-2 and Figure 1-2).[7] Both wells are screened within the sand-gravel WBZ and bedrock. These water wells are located hydraulically crossgradient of the proposed Module 11 area.

- Two community water wells are located south (generally downgradient) of proposed Module 11 that are affiliated with the RV Park on the RL property (Well Nos. 10 and 11 in Table 4-2 and Figure 4-4). These wells are approximately 950 and 1,150 feet, respectively, from the southern border of proposed Module 11. RL reported that these wells are currently in use. Both wells draw groundwater from bedrock strata (basalt, sandstone, shale) and were constructed with well seals to depths of 62 and 66 feet, respectively, which extend through the shallow and deep WBZs and into bedrock.

SCS identified eight new Water Well Reports (SCS Nos. 33 through 40), including one well drilled in 1981 (SCS No. 36; Smith well) and seven drilled after the 1993/1994 water use surveys were completed. The locations of these wells (shown in Figure 4-4) were identified based on well location information provided in the Water Well Reports. Copies of the Water Well Reports for these newly-identified wells are provided in Appendix E. All of the newly-identified water wells are used for domestic water use, are apparently screened or perforated within the alluvial sand-gravel WBZ or bedrock (basalt or marine deposits), and are located at least one-half mile from and hydraulically upgradient or crossgradient to the proposed Module 11 area. These wells are unlikely to be affected by proposed Module 11 given their location and distance with respect to proposed Module 11.

[7] Water well MB-2 (Well No. 3 in Table 4-2 and Figure 4-4) was formerly located in close proximity to well PW-1 and was recently abandoned on June 30 and July 1, 2015.

5.0 FINDINGS FROM MODULE 11 HSC

This section presents the findings of the proposed Module 11 HSC based on interpretation and evaluation of the extensive existing hydrogeologic information and data (discussed in Section 3.0), and the results of the additional HSC tasks (discussed in Section 4.0).

5.1 HYDROGEOLOGY

5.1.1 Hydrostratigraphy

Existing borehole logs for exploratory borings and monitoring features in the proposed Module 11 area were used to develop geologic cross sections A-A' and B-B' (Figure 5-1) and C-C' (Figure 5-2). The cross section lines, shown in Figure 3-1, run along the three sides of the proposed "triangular-shaped" Module 11. Copies of the logs used to develop the cross sections are provided in Appendix A. Each of the cross sections show that the three geologic units identified at RL (i.e., alluvial shallow silt-clay unit, alluvial deep sand-gravel unit, and Nestucca Formation bedrock) are laterally continuous across the proposed Module 11 area. The lithologies of these geologic units within proposed Module 11 are consistent with other characterized portions of RL, as previously described in Section 3.2.

Groundwater is first encountered in the shallow silt-clay unit where it occurs under unconfined conditions. Groundwater in the underlying deep sand-gravel unit occurs under confined conditions. Groundwater within these two units has been monitored within the proposed Module 11 area in some cases dating back to 1993. The existing network of monitoring wells and piezometers within proposed Module 11 are shown in Figure 1-2.

The Nestucca Formation bedrock has typically low permeability, and groundwater has not been encountered in the uppermost portion of this unit beneath the RL site. As such, groundwater monitoring of the Nestucca Formation bedrock is not performed at RL.

5.1.2 Shallow Water-Bearing Zone Characteristics

The shallow silt-clay WBZ within proposed Module 11 ranges in thickness from approximately 31 feet at borehole GT14-07 in the southern portion of Module 11, to approximately 50 feet at borehole GT12-01A in the far northern corner of Module 11. The bottom of this unit occurs at a relatively uniform elevation of about 100 to 110 feet amsl.

Shallow WBZ groundwater elevations in the proposed Module 11 area (see Table 5-1) and interpreted groundwater elevation contours (see Figures 3-2 and 3-3) are consistent with the overall groundwater flow patterns and hydraulic gradients across the RL site. The following are noteworthy findings related to groundwater elevations and hydraulic characteristics of the shallow WBZ in the proposed Module 11 area:

- Historical high groundwater elevations ranged from 127.25 feet amsl at well MW-20A (in April 2011) near the southeast corner of proposed Module 11, to 150.27 feet amsl at well MW-1B (in December 1994) near the northern corner of proposed Module 11. The historical

high groundwater elevations corresponded to depth-to-groundwater measurements that were typically less than 5 feet bgs. Groundwater elevation hydrographs (Appendix B) show that groundwater elevations exhibit typical seasonal fluctuations. It should be noted that an evaluation of historical high groundwater elevations in the proposed Module 11 expansion was completed in support of the design of base grade elevations for the proposed Module 11 landfill cell(s) presented in the Permit Modification Application (SCS/Geosyntec, 2015). A copy of the technical memorandum presenting the findings of this evaluation is included in Appendix F.

- Historical interpretations of groundwater elevations (presented in past AEMRs) indicate that groundwater within the shallow WBZ consistently flows southeasterly across the proposed Module 11 area.

- Horizontal hydraulic gradients ranged from approximately 0.004 to 0.017 ft/ft based on groundwater elevation data and interpretation of groundwater flow, with an average value of 0.012 ft/ft.

- Horizontal hydraulic conductivities within proposed Module 11 range from 3.53×10^{-4} to 5.02×10^{-3} ft/min based on historical and recent slug testing results (see Table 3-3).

An estimate of the average groundwater velocity was calculated using the following equation ("Darcy's Equation") and input values:

$$V = (ki)/n$$

Where:

V = average groundwater velocity (ft/min)
k = horizontal hydraulic conductivity (high/low values noted above, ft/min)
i = average hydraulic gradient (0.012 ft/ft, as noted above)
n = effective porosity (15 percent based on values used for the RI and AHI (EMCON, 1993b and 1994, respectively)

The estimated average groundwater velocity in the shallow WBZ within proposed Module 11 ranges from 2.82×10^{-5} to 4.02×10^{-4} ft/min (15 to 211 feet per year [ft/yr]).

5.1.3 Deep Water-Bearing Zone Characteristics

The deep sand-gravel WBZ within proposed Module 11 has a variable thickness due to the irregular surface of the top of the underlying bedrock unit. A top-of-bedrock surface elevation contour map for the site is provided in Figure 5-3 that illustrates the irregular nature of the top-of-bedrock surface (including within proposed Module 11). In the northern portion of proposed Module 11, the deep WBZ was found to be 43.5 feet thick as encountered in boring EW-1, and greater than 41.5 and 44.0 feet in borings GT14-01 and GT14-02, respectively, where bedrock was not penetrated. It's likely that the depth to bedrock in borings GT14-01 and GT14-02 is not significantly lower than the total depth drilled at these locations (as discussed in Section 5.1.4). In the southern portion of Module 11,

the thickness of the deep WBZ was found to range from 14.5 feet in boring GT14-04 to 34.5 feet in boring GT14-07.

Deep WBZ groundwater elevations in the proposed Module 11 area (see Table 5-1) and interpreted groundwater elevation contours (see Figures 3-4 and 3-5) are consistent with the overall groundwater flow patterns and hydraulic gradients across the RL site. The following are noteworthy findings related to groundwater elevations and hydraulic characteristics of the deep WBZ in the proposed Module 11 area:

- Historical groundwater elevations ranged from 108.98 feet amsl at well MW-20B (in November 2009) near the southeast corner of proposed Module 11, to 146.32 feet amsl at well MW-10 (in March 1994) near the northwestern edge of proposed Module 11. Groundwater levels and pumping test data indicate groundwater within the deep WBZ occurs under confined conditions. Groundwater elevation hydrographs (Appendix B) show that groundwater elevations exhibit seasonal fluctuations consistent with those observed in other deep WBZ wells installed and monitored at RL.

- Historical interpretations of groundwater elevations (presented in past AEMRs) indicate that groundwater within the deep WBZ consistently flows southeasterly across the proposed Module 11 area.

- Horizontal hydraulic gradients ranged from approximately 0.001 to 0.016 ft/ft based on groundwater elevation data and interpretation of groundwater flow, with an average value of 0.006 ft/ft.

- Horizontal hydraulic conductivities within proposed Module 11 range from 3.30×10^{-3} to 9.17×10^{-2} ft/min based on historical and recent slug testing or pumping testing results (see Table 3-3).

An estimate of the average groundwater velocity was calculated using the equation noted in the previous section and following input values:

V = average groundwater velocity (ft/min)
k = horizontal hydraulic conductivity (high/low values noted above, ft/min)
i = average hydraulic gradient (0.006 ft/ft as noted above)
n = effective porosity (30 percent based on values used for the RI and AHI (EMCON, 1993b and 1994, respectively)

The estimated average groundwater velocity in the deep WBZ within proposed Module 11 ranges from 6.60×10^{-5} to 1.83×10^{-3} ft/min (35 to 962 ft/yr).

5.1.4 Nestucca Formation Surface Elevations

Select borings at the RL site penetrated bedrock only to confirm its presence, and therefore the borings did not extend more than 11 feet into bedrock (typically less than 5 feet). The top-of-bedrock surface elevation contour map in Figure 5-3 shows that Nestucca Formation bedrock was encountered in several borehole (EW-1, P-04B, GT10-02, GT10-03, GT12-05A, GT12-06A, and

GT14-03 through GT14-07) in the proposed Module 11 area at depths ranging from approximately 46 to 84 feet bgs. The top-of-bedrock surface elevations range from approximately 64.5 to 93.5 feet amsl in the southern and eastern portions of proposed Module 11. The bedrock surface was not penetrated in boreholes located in the northern and western portions of proposed Module 11. However, interpolation between data points suggests that the bedrock surface occurs at an elevation of approximately 65 to 70 feet amsl in the northern and western portions of proposed Module 11.

5.1.5 Hydraulic Connection Between Water Bearing Zones

The relative degree of hydraulic connection between the shallow and deep WBZs in the proposed Module 11 area was evaluated by a pumping test using production well PW-1 at the northern tip of proposed Module 11. The results from the pumping test were previously discussed in Section 4.3, and details of the pumping test procedures and presentation of data are provided in Appendix D. The results of the pumping test corroborate the previous studies and confirm that the two WBZs are hydraulically isolated from one another.

5.2 GROUNDWATER QUALITY

Existing monitoring wells and piezometers in the proposed Module 11 area have been monitored for groundwater quality in some cases since 1993. The monitoring wells and piezometers have been sampled historically on a variable frequency basis. The groundwater analytical data compiled to date for these wells and piezometers provide extensive historical data to establish background groundwater quality conditions in the proposed Module 11 area and to compare the chemistries of groundwater collected from the Module 11 wells with that of groundwater collected from the site compliance wells. The current groundwater quality monitoring program in the proposed Module 11 area, as described in the approved EMP (SCS, 2014), consists of the following:

- **Background monitoring:** Evaluation of groundwater quality hydraulically upgradient or crossgradient of the existing landfill cells has been performed at monitoring well pairs MW-1A/MW-1B and MW-10A/MW-10B since 1993, and monitoring well pair MW-18A/MW-18B since 2001. These wells are currently sampled during 5-year comprehensive monitoring events. The last 5-year comprehensive monitoring event was performed during the Spring (April) 2013 monitoring event.

- **Poplar tree farm detection monitoring wells.** Detection monitoring wells MW-20A and MW-20B and piezometers P-05A and P-06A are currently sampled on a routine basis (annually or semiannually) as part of the ongoing assessment of water-quality changes in this area.

Historical groundwater analytical data are routinely updated and presented in the AEMRs prepared for RL, including most recently in the 2014 AEMR (SCS, 2015c).

5.2.1 Shallow Water-Bearing Zone Groundwater

The following are noteworthy results regarding groundwater quality in the shallow WBZ in the proposed Module 11 area based on evaluations of extensive analytical data collected as part of RL's groundwater monitoring program and previously presented and evaluated in the AEMRs:

- VOCs have historically not been detected.
- Shallow WBZ groundwater in the Module 11 area is generally characterized by the predominance of Ca, Mg, and HCO_3 ions, similar to groundwater collected at most other shallow groundwater wells (see Piper [Trilinear] and Stiff diagrams[8] in Figures 5-4 and 5-5, respectively). [9]
- Time-concentration plots and well-specific geochemical (Piper and Stiff) diagrams (see Appendix G) show that groundwater collected from shallow WBZ monitoring wells in the proposed Module 11 area have consistent inorganic chemistries over time, except for MW-20A groundwater (as discussed below).
- Trace metals have historically not been detected above regulatory levels.
- Fe and Mn have historically been detected at concentrations above secondary groundwater quality standards in some Module 11 area monitoring wells and piezometers. These include background (upgradient) monitoring wells MW-1A, MW-10A, and MW-18A located in the proposed Module 11 area. Previous investigations concluded that the elevated Fe and Mn concentrations in groundwater samples at the RL site were attributable to natural variations in groundwater chemistry and reflective of background groundwater conditions (HWA Geosciences, Inc., 2001). Analytical results supporting this conclusion included the detection of elevated Fe and Mn concentration in groundwater collected from the background monitoring wells MW-1B and MW-18A in the proposed Module 11 area.

[8] The ionic composition of groundwater is represented by the common anions (HCO_3, sulfate [SO_4], and chloride [Cl]) and major dissolved cations (Ca, Mg, potassium [K], and sodium [Na]). The major ions used to prepare Piper diagrams typically account for the vast majority of the total dissolved solids in different water types. Different water quality types will plot in different areas on the Piper diagrams. Whereas Piper diagrams illustrate the relative concentrations of the major cations and anions, Stiff diagrams provide absolute concentrations of the ions (in milliequivalents per liter [meq/L]).

[9] Spatial variations in shallow WBZ groundwater chemistry are reflected in Figures 5-4 and 5-5, most notably in differences in the ionic chemistries of MW-12A and MW-15A compared to the other shallow WBZ wells. The elevated Cl concentrations reflected in the ionic signature of MW-20A groundwater is attributed to the localized changes in shallow WBZ groundwater chemistry downgradient of the north poplar tree farm area, as previously discussed.

- As previously discussed in Section 3.4.1, analytical results of samples collected from detection well MW-20A, located downgradient of the north poplar tree farm area (i.e., the proposed Module 11 area), showed localized changes in the shallow WBZ at this location (SCS, 2015c). This is reflected in increasing concentration trends for several inorganic parameters (see time-concentration graphs in Appendix G) and the shift in the ionic chemistry of MW-20A groundwater (see MW-20A geochemical diagrams in Appendix G). Leachate irrigation of the poplar tree farms was voluntarily terminated in 2013, and some water quality parameters are showing signs of stabilization since that time (e.g., Ca, Mg, Mn, and Na). It is expected that the localized water quality changes in the vicinity of well MW-20A will attenuate relatively quickly in response to the termination of leachate irrigation and the development of Module 11 that will remove near-surface soils in the former leachate irrigation area and prevent infiltration of precipitation in the unsaturated zone soils in this area.

- The water quality changes observed in shallow WBZ well MW-20A have not been observed in deep WBZ well MW-20B.

5.2.2 Deep Water-Bearing Zone Groundwater

The following are noteworthy results regarding groundwater quality in the deep WBZ in the proposed Module 11 area based on evaluations of analytical data previously presented in the AEMRs:

- VOCs have historically not been detected.

- Deep WBZ groundwater in the Module 11 area is also typically characterized by the predominance of Ca, Mg, and HCO_3 ions, similar to groundwater collected at most other deep groundwater wells (see Piper and Stiff diagrams in Figures 5-6 and 5-7, respectively). The minor differences in the ionic signatures at different well locations are characteristic of the spatial variability found at the RL site. The AHI report (EMCON, 1994) noted that the spatial variability may be due in part to localized mixing of more brackish water derived from underlying marine sediments.

- Time-concentration plots and well-specific geochemical (Piper and Stiff) diagrams (see Appendix G) show that groundwater collected from deep WBZ monitoring wells in the Module 11 area have consistent inorganic chemistries over time.

- Trace metals have historically not been detected above regulatory levels.

5.3 SITE VICNITY WATER USE

The majority of water wells identified from the previous and updated water use surveys are distal to (at least one-quarter mile) and/or hydraulically upgradient to crossgradient from the proposed Module 11 area. Of particular interest with respect to this HSC are water wells located within, in close proximity to, or directly downgradient of proposed Module 11 (i.e., between Module 11 and the South Yamhill River). The following describes wells matching these criteria:

- There are two active water wells affiliated with the landfill operations that are located in the northern portion of the landfill (Well Nos. 4 and 6, referred to as MB-1 and PW-1, respectively, in Table 4-2 and Figure 1-2). Both wells are screened within the sand-gravel WBZ and bedrock. These water wells are located hydraulically crossgradient of proposed Module 11.

- One domestic water well is located within proposed Module 11 affiliated with an abandoned residence (Well No. 8 ["Sanifill" well] in Table 4-2 and Figure 4-4). This well will have to be properly abandoned as part of the proposed Module 11 development.

- Two community water wells are located south (generally downgradient) of proposed Module 11 and are affiliated with the RV Park on the RL property (Well Nos. 10 and 11 in Table 4-2 and Figure 4-4). Both wells draw groundwater from bedrock strata (basalts, sandstone, and shale) and were constructed with well seals to depths of 62 and 66 feet, respectively, that extend through the shallow and deep WBZs and into bedrock.

5.4 MODULE 11 CONCEPTUAL HYDROGEOLOGIC MODEL (CHM)

The CHM developed for proposed Module 11 is consistent with the CHM previously developed for the RL site as described in detail in Section 3.6. The following are key elements of the CHM specific to proposed Module 11:

- The shallow silt-clay hydrostratigraphic unit comprises the primary target WBZ with respect to groundwater quality monitoring. Groundwater in the shallow WBZ generally flows southeasterly towards the South Yamhill River, which functions as a discharge boundary (i.e., shallow WBZ groundwater discharges to the river).

- The deep sand-gravel hydrostratigraphic unit underlies the shallow silt-clay unit and represents a secondary target WBZ with respect to groundwater quality monitoring. Deep WBZ groundwater generally flows southeasterly towards the South Yamhill River.

- Pumping test data indicate that (1) the deep WBZ groundwater beneath proposed Module 11 occurs under confined conditions, and (2) the deep and shallow WBZs are hydraulically isolated from one another.

- Current beneficial groundwater use downgradient of proposed Module 11 includes two community water wells affiliated with the RV Park on the RL property. These wells draw groundwater from bedrock strata (basalts, sandstone, and shale) and were constructed with well seals to depths that extend through the shallow and deep WBZs and into bedrock. As a result, there is a low potential for these wells to be affected by proposed Module 11 development and operations.

- Current beneficial surface water uses downgradient of proposed Module 11 include water right points of diversion from the South Yamhill River. However, there is a low potential that the South Yamhill River would be affected by proposed Module 11 development and operations because (1) current and future environmental monitoring networks and programs at RL are designed to provide early detection of a potential release from the landfill before it would reach the river, and (2) it would be expected that a release would significantly attenuate over the substantial distance (about ¼ mile) between proposed Module 11 and the river.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 CONCLUSIONS

The hydrogeologic conditions of the proposed Module 11 area have been sufficiently characterized to meet the requirements of RL's SWDP and Section 3, Phase II Landfill Site Characterization, of the DEQ's Solid Waste Guidance Document (DEQ, 1996). The following HSC elements were appropriately characterized for the proposed Module 11 area based on the findings from the previous investigations, groundwater monitoring pursuant to the site's EMP, and the supplemental work conducted as part of this HSC:

- Hydrogeologic characteristics including hydrostratigraphy; nature, extent and hydraulic characteristics of target WBZs (i.e., shallow silt-clay WBZ and deep sand-gravel WBZ); seasonal groundwater levels and fluctuations; groundwater flow directions and velocity, and hydraulic connection between the target WBZs.

- The significance of the target WBZs with respect to a potential release of chemical constituents from future Module 11 and the ability to adequately monitor for a release.

- The chemistry and quality of background (i.e., naturally occurring) groundwater conditions of the target WBZs.

Based on the findings of this HSC, the characterized hydrogeologic conditions within the proposed Module 11 were demonstrated to be consistent with the site CHM previously developed for the RL site. The HSC findings allow for an appropriate evaluation of the existing (and proposed) groundwater monitoring network in the proposed Module 11 area and its effectiveness at monitoring groundwater quality in target WBZs hydraulically downgradient of proposed Module 11 (discussed in Section 6.2).

Localized changes to groundwater quality occur in the shallow WBZ in the southeast corner of proposed Module 11 due to former leachate irrigation of the north poplar tree farm. It is expected that the localized water quality changes in the vicinity of well MW-20A will attenuate relatively quickly in response to the termination of leachate irrigation and the development of Module 11 that will remove near-soils that are affected by the former leachate irrigation.

6.2 RECOMMENDATIONS FOR MONITORING NETWORK MODIFICATIONS

The findings of this HSC provide the basis to assess whether any changes to RL's current compliance monitoring networks are required in consideration of the proposed Module 11 area. Evaluation of the current monitoring networks indicates that additional groundwater monitoring wells and LFG compliance probes are needed to provide early identification of a potential release from proposed Module 11 and to ensure that the objectives and regulatory requirements for environmental monitoring are met. In addition, other existing wells/piezometers and a LFG probe

will need to be decommissioned to accommodate cell construction and associated site development activities.

All proposed modifications to the groundwater and LFG monitoring networks, along the field methods to be employed, will be described in work plans to be submitted to the DEQ for approval prior to implementing the modifications. All work will be performed in accordance with requirements specified in RL's SWDP and EMP. An updated EMP will need to be prepared that describes and shows the monitoring network modifications according to a schedule established by the DEQ after the Permit Modification Application is approved.

6.2.1 Groundwater Monitoring Network

Proposed modifications to RL's groundwater monitoring network are described below.

- Existing piezometers GT-10-1 and P-05A and the "Sanifill" water well will need to be properly abandoned due to their location within the proposed Module 11 footprint.
- Existing detection monitoring wells MW-20A/MW-20B and piezometer P-06A will need to be properly abandoned due to their location within the proposed stream enhancement and wetlands mitigation area adjacent to the southern boundary of Module 11.
- Two new downgradient compliance monitoring well pairs should be installed downgradient of proposed Module 11 within approximately 450 feet from its southern boundary. One well pair (MW-27A/MW-27B) will be installed to replace detection wells MW-20A/MW-20B. An additional compliance well pair (MW-26A/MW-26B) will be installed further west of the replacement wells for MW-20A/MW-20B. The approximate locations of the new compliance well pairs are shown in Figure 6-1.

The remaining monitoring wells/piezometers in this area (MW-1A/MW-1B, MW-10A/MW-10B, and MW-18A/MW-18B) are situated around the perimeter of the proposed Module 11 footprint and may be used for future groundwater monitoring purposes (e.g., for groundwater elevation and/or background groundwater quality monitoring). Monitoring wells MW-10A/MW-10B and MW-18A/MW-18B may require modifications if they are located in areas of future grading associated with landfill cell development.

6.2.2 Landfill Gas Monitoring Network

Existing LFG monitoring probe PGP-06 will need to be appropriately abandoned due to its location within the proposed Module 11 footprint. A network of new compliance LFG monitoring probes should be installed around the perimeter of the future Module 11 development, including two probes south of Module 11 (between future Module 11 and the RV Park) and three probes along the western edge of future Module 11 (adjacent to Highway 18). The approximate locations of the new probes are shown in Figure 6-1.

6.2.3 Leachate Management System

All future waste cells will be constructed with primary leachate collection and removal systems (LCRSs) in accordance with federal and state requirements.

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TABLES

Table 3-1
Construction Information for Site Groundwater Monitoring Wells and Piezometers
Riverbend Landfill

Well Designation	Lithologic Unit Screened	Date Installation Completed	Eastings[a]	Northings[a]	Ground Elevation[a] (ft-msl)	TOC Elevation[a] (ft-msl)	Boring Depth (ft-bgs)	Boring Diameter (inches)	Well Diameter (inches)	Well Screen Interval (ft-bgs)	Sand Pack Interval (ft-bgs)	Well Seal Interval (ft-bgs)
Monitoring Wells												
MW-1A	Sand-Gravel	6-Sep-89	3999.9	4210.2	153.40	155.30	61.5	10	2	50.0 to 60.0	48.0 to 61.5	3.0 to 48.0
MW-1B	Silt-Clay	8-Sep-89	4001.1	4214.5	153.40	155.00	26.5	10	2	15.0 to 25.0	13.0 to 26.5	3.0 to 13.0
MW-2	Silt-Clay	26-Jan-81	5123.7	4126.2	146.30	148.30	40.0	NA	2	NA	NA	NA
MW-5A	Silt-Clay	8-Sep-92	5490.7	2069.0	132.00	138.73	28.0	10	2	18.0 to 28.0	16.0 to 28.0	3.0 to 16.0
MW-5B	Sand-Gravel	9-Mar-92	5481.2	2073.1	132.80	138.88	44.7	10	2	42.0 to 45.0	40.0 to 45.0	3.0 to 40.0
MW-9A	Silt-Clay	21-Oct-93	6486.5	3663.2	128.10	128.42	24.5	8	2	14.3 to 23.8	27.0 to 40.0	2.0 to 11.0
MW-9BR	Sand-Gravel	24-Aug-94	5903.2	3760.8	124.76	127.40	36.5	10	2	28.2 to 33.7	27.0 to 37.5	2.0 to 26.0
MW-10A	Silt-Clay	28-Oct-93	3501.0	3805.0	150.75	153.21	28.3	8	2	17.3 to 26.8	14.0 to 28.3	2.2 to 14.0
MW-10B	Sand-Gravel	27-Oct-93	3492.5	3795.5	150.76	152.87	69.0	10	2	44.3 to 53.8	40.9 to 55.3	2.0 to 40.9
MW-12A	Silt-Clay	19-Jul-95	5650.8	1676.5	123.80	126.00	25.5	10	2	15.3 to 24.8	12.0 to 25.5	0.5 to 15.3
MW-12B	Sand-Gravel	19-Jul-95	5643.6	1676.5	124.00	126.54	49.9	10	2	34.3 to 43.8	31.0 to 45.0	0.5 to 31.0
MW-14A	Silt-Clay	16-Oct-96	4863.8	1652.6	118.80	121.87	21.0	10	2	10.7 to 20.2	7.8 to 21.0	2.2 to 7.8
MW-14B	Sand-Gravel	15-Oct-96	4854.1	1653.7	119.10	123.32	42.0	10	2	31.7 to 41.2	2.85 to 42.0	2.2 to 28.5
MW-15A	Silt-Clay	21-Oct-96	6385.5	2209.1	126.00	130.07	22.8	10	2	12.5 to 22.0	10.0 to 22.8	2.0 to 10.0
MW-15B	Sand-Gravel	21-Oct-96	6393.5	2214.7	126.00	129.73	44.0	10	2	33.2 to 42.7	30.2 to 44.0	2.0 to 30.2
MW-16A	Silt-Clay	23-Oct-96	7010.7	2675.6	126.30	128.89	23.5	10	2	13.5 to 23.0	11.0 to 23.5	1.5 to 11.0
MW-16B	Sand-Gravel	23-Oct-96	7004.3	2670.7	126.30	128.95	45.0	10	2	34.8 to 44.3	31.6 to 45.0	2.0 to 31.6
MW-17A	Silt-Clay	26-Sep-00	1221.4	1431.4	151.12	153.83	24.5	10	2	14.0 to 24.0	11.5 to 24.5	0.5 to 11.5
MW-18A	Silt-Clay	26-Sep-00	2612.9	2938.0	146.77	148.77	26.0	10	2	13.5 to 23.5	11.0 to 24.0	0.5 to 11.0
MW-18B	Sand-Gravel	26-Sep-00	2621.6	2931.1	146.58	148.57	62.0	10	2	47.0 to 53.0	45.0 to 53.0	0.5 to 45.0
MW-19A	Silt-Clay	27-Sep-00	2537.0	1437.0	149.05	151.27	30.0	10	2	18.0 to 28.0	18 .5 to 28.5	0.5 to 16.5
MW-20A	Silt-Clay	26-Sep-00	3776.2	2490.1	127.20	129.92	21.0	10	2	10.0 to 20.0	8.5 to 21.0	0.5 to 8.5
MW-20B	Sand-Gravel	26-Sep-00	3759.5	2491.2	127.10	129.72	40.0	10	2	29.0 to 34.0	26.5 to 95.3	0.5 to 26.5
MW-21A	Silt-Clay	26-Sep-00	4645.5	1945.3	116.18	120.02	13.0	10	2	8.0 to 13.0	7.0 to 23.0	0.5 to 7.0
MW-21B	Sand-Gravel	26-Sep-00	4631.3	1941.6	116.56	119.53	34.0	10	2	21.0 to 26.0	18.5 to 27.0	0.5 to 18.5
MW-22A	Silt-Clay	23-Sep-10	4105.3	1578.5	123.50	125.38	22.5	10	2	10.0 to 20.0	8.0 to 21.0	2.0 to 8.0
MW-22B	Sand-Gravel	23-Sep-10	4110.8	1584.6	123.50	125.43	38.0	10	2	27.0 to 37.0	25.0 to 38.0	2.0 to 25.0
MW-23A	Silt-Clay	18-Aug-10	3281.9	1515.9	129.00	131.79	28.0	10	2	16.0 to 26.0	14.0 to 28.0	2.0 to 14.0
MW-23B	Sand-Gravel	17-Aug-10	3290.0	1516.5	129.00	131.60	42.0	10	2	36.5 to 41.5	34.5 to 42.0	2.0 to 34.5
MW-24A	Silt-Clay	20-Aug-10	2140.0	984.2	147.50	149.93	26.0	10	2	15.0 to 25.0	13.0 to 26.0	2.0 to 13.0
Piezometers												
MW-3A	Silt-Clay	23-Jun-93	4430.9	2493.9	138.20	140.81	35.0	8	2	24.0 to 34.0	21.0 to 35.0	2.2 to 21.0
MW-3B	Sand-Gravel	28-Jun-93	4415.6	2496.3	137.80	140.57	63.5	10	2	45.0 to 55.0	42.0 to 56.0	36.8 to 42.0
MW-4A	Silt-Clay	25-May-93	4798.0	2238.7	139.46	142.31	36.0	8	2	26.0 to 36.0	22.5 to 36.0	2.0 to 22.5
MW-4B	Sand-Gravel	10-Jun-93	4805.5	2239.4	139.24	141.81	72.0	10	2	52.0 to 62.0	49.0 to 63.0	47.0 to 49.0
MW-6A	Silt-Clay	24-May-93	6043.5	2437.7	127.00	128.95	22.5	8	2	11.5 to 21.5	8.5 to 22.5	2.0 to 8.5
MW-6B	Sand-Gravel	9-Jun-93	6054.4	2443.0	127.00	128.59	56.0	8	2	36.0 to 46.0	34.2 to 47.0	2.5 to 34.2
P-01	Silt-Clay	21-Dec-92	5482.1	2038.3	123.20	125.93	19.0	8	2	8.0 to 18.0	5.9 to 19.0	2.0 to 5.9
P-02	Silt-Clay	22-Dec-92	5498.5	1994.0	121.10	123.88	18.0	8	2	6.8 to 16.8	5.0 to 18.0	1.0 to 5.0

Table 3-1
Construction Information for Site Groundwater Monitoring Wells and Piezometers
Riverbend Landfill

Well Designation	Lithologic Unit Screened	Date Installation Completed	Eastings[a]	Northings[a]	Ground Elevation[a] (ft-msl)	TOC Elevation[a] (ft-msl)	Boring Depth (ft-bgs)	Boring Diameter (inches)	Well Diameter (inches)	Well Screen Interval (ft-bgs)	Sand Pack Interval (ft-bgs)	Well Seal Interval (ft-bgs)
Piezometers (continued)												
P-03	Silt-Clay	23-Jun-93	5601.9	1754.2	120.90	123.63	19.5	8	2	9.0 to 19.0	7.3 to 19.5	2.0 to 9.3
P-05A	Silt-Clay	13-Oct-05	3612.4	2875.1	138.60	140.74	20.0	3.5	1	9.7 to 19.5	7.5 to 20.0	0.5 to 7.5
P-06A	Silt-Clay	13-Oct-05	3363.7	2566.2	129.30	131.58	20.0	3.5	1	9.7 to 19.5	7.5 to 20.0	0.5 to 7.5
P-07A	Silt-Clay	3-Feb-12	3804.2	2168.8	145.70	147.90	31.0	10	2	16.0 to 26.0	14.0 to 26.5	2.0 to 14.0
GT10-1	Silt-Clay	10-Sep-10	3444.2	3211.7	143.80	145.56	66.5	5.9	2	15.0 to 25.0	13.0 to 30.0	2.0 to 13.0/ 30.0 to 65.0
GT10-11	Silt-Clay	9-Sep-10	2518.1	1781.3	149.30	150.08	61.0	5.9	2	15.0 to 25.0	13.0 to 30.0	2.0 to 13.0 / 30.0 to 60.0
GT10-12	Silt-Clay	14-Sep-10	1736.5	1971.4	150.60	152.41	55.0	5.9	2	15.0 to 25.0	13.0 to 30.0	2.0 to 13.0/ 30.0 to 65.0
SA-BH-1	Silt-Clay	24-Aug-10	716.6	3175.5	152.80	155.21	23.0	10	2	12.0 to 22.0	10.0 to 23.0	2.0 to 10.0
SA-BH-3	Silt-Clay	24-Aug-10	813.1	1679.7	152.80	155.07	26.5	10	2	12.0 to 22.0	10.0 to 23.5	2.0 to 10/ 23.5 to 25.0
SA-BH-5	Silt-Clay	23-Aug-10	1773.0	586.9	148.60	151.01	28.5	10	2	18.0 to 28.0	15.5 to 28.5	2.0 to 15.5
SA-BH-6	Silt-Clay	29-Sep-10	2895.0	597.7	123.80	125.93	25.0	10	2	14.0 to 24.0	12.0 to 25.0	2.0 to 12.0
Decommissioned Monitoring Wells and Piezometers												
MW-7A[c]	Silt-Clay	26-May-93	4359.8	3103.9	146.70	149.56	32.5	8	2	16.0 to 26.0	13.0 to 27.0	2.5 to 13.0
MW-7B[c]	Sand-Gravel	17-Jun-93	4369.0	3105.4	146.50	149.34	82.6	8	2	49.0 to 59.0	47.2 to 60.0	2.0 to 47.2
MW-11A[d]	Silt-Clay	21-Oct-93	5340.9	3362.8	143.10	146.33	29.0	8	2	16.3 to 25.8	13.0 to 27.0	2.0 to 13.0
MW-11B[d]	Sand-Gravel	2-Nov-93	5330.6	3357.7	143.10	146.25	73.8	10	2	41.3 to 50.8	38.1 to 51.7	2.0 to 38.1
MW-13A[e]	Silt-Clay	17-Oct-96	4341.2	2093.9	146.60	149.66	44.0	10	2	33.7 to 43.2	31.5 to 44.0	2.0 to 31.5
MW-13B[e]	Sand-Gravel	17-Oct-96	4348.6	2089.7	146.50	149.45	65.5	10	2	55.2 to 64.7	52.1 to 65.5	2.0 to 52.1
P-04A[f]	Silt-Clay	28-Oct-93	4067.0	2530.1	139.00	141.15	32.5	8	2	19.3 to 28.8	15.9 to 29.8	2.0 to 15.9
P-04B[f]	Sand-Gravel	10-Nov-93	4078.5	2531.9	139.00	141.65	75.8	10	2	42.3 to 51.8	39.0 to 52.4	2.0 to 39.0

NOTES:

NA = not available; TOC = top of casing; ft-msl = feet mean sea level; ft-bgs = feet below ground surface.

[a] All monitoring wells and piezometers were re-surveyed in July 2013.

[b] Monitoring wells MW-1A and MW-1B were installed in 1989. Logs for these wells are available but the document source for the logs could not be identified..

[c] MW-7A and MW-7B were decommissioned in June 2009 to accommodate construction of landfill Module 8D.

[d] MW-11A and MW-11B were decommissioned in May 2012 to accommodate construction of landfill Module 8A.

[e] MW-13A and MW-13B were decommissioned in May 2001 to accommodate construction of the leachate pond.

[f] P-04A and P-04B were decommissioned in June 2013 to accommodate construction of the mechanically stabilized earthen (MSE) berm.

Indicates well or piezometer located within or in close proxmity to the proposed Module 11 expansion area.

Table 3-2
Historical Subsurface Explorations in Proposed Module 11 Area
Riverbend Landfill

Investigation Source	Type of Exploratory Feature [a]
MW-1A and MW-1B Installation (source unknown)	Monitoring Wells MW-1A and MW-1B
Additional Hydrogeological Investigation (EMCON, 1994)	Monitoring Wells MW-10A and MW-10, Former Piezometers P-04A and P-04B; Borehole EW-1
Technical Memorandum (re monitoring well installations (CH2M Hill, 2000)	Monitoring Wells MW-18A, MW-18B, MW-20A, and MW-20B
North Poplar Tree Farm Water Quality Assessment (Shaw, 2006)	Piezometers P-05A and P-06A
2010 Hydrogeologic Site Characterization Report (SCS, 2011)	Piezometer GT-10-1; Boreholes GT10-02 and GT10-03
Phase I MSE Berm Report (Geosyntec, 2012)	Boreholes GT11-01 and GT11-02, GT12-01A through GT12-06A GT12-01B through BT12-06B, and GT12-07 through GT12-13
Module 11 Summary of Field Investigation and Laboratory Testing Programs (Geosyntec, 2015)	Boreholes GT13-01 through GT13-20 and GT14-01 through GT14-17

Notes

[a] Borehole logs and construction details for borings, wells, and piezometers relevant to proposed Module 11 are provided in Appendix A. The logs for 2013 and 204 boreholes are draft.

Table 3-3
Summary of In-Situ Hydraulic Testing Results
Riverbend Landfill

Piezometer or Monitoring Well Designation [a]	Test Method [e]	Hydraulic Conductivity (cm/sec)	Hydraulic Conductivity (ft/min)
Silt-Clay Water Bearing Zone			
MW-3A [b]	Falling Head	1.18E-04	2.32E-04
MW4A [b]	Rising Head	3.86E-05	7.60E-05
MW-7A [b]	Rising Head	1.72E-05	3.39E-05
MW-7A [D]	Falling Head	1.51E-05	2.97E-05
MW-8A [c]	Falling Head	4.14E-06	8.15E-06
MW-9A [c]	Rising Head	1.39E-05	2.74E-05
MW-9A [c]	Falling Head	1.91E-05	3.76E-05
MW-10A [c]	Rising Head	2.17E-03	4.27E-03
MW-10A [c]	Falling Head	2.55E-03	5.02E-03
MW-11A [c]	Rising Head	2.29E-05	4.51E-05
MW-11A [c]	Falling Head	3.28E-05	6.46E-05
MW-17A [d]	Rising Head	1.06E-02	2.09E-02
MW-17A [d]	Falling Head	7.61E-03	1.50E-02
MW-19A [d]	Rising Head	9.81E-03	1.93E-02
MW-19A [d]	Falling Head	4.54E-03	8.94E-03
MW-20A [d]	Rising Head	1.52E-03	2.99E-03
P-01 [b]	Falling Head	4.68E-04	9.21E-04
P-02 [b]	Rising Head	1.88E-04	3.70E-04
P-02 [b]	Falling Head	2.23E-04	4.39E-04
P-03 [b]	Rising Head	4.68E-04	9.21E-04
P-04A [c]	Rising Head	1.88E-04	3.70E-04
P-04A [c]	Falling Head	2.23E-04	4.39E-04
GT-10-1	Rising Head	1.79E-04	3.53E-04
GT-10-1	Falling Head	2.25E-04	4.43E-04
Sand-Gravel Water Bearing Zone			
PW-1	Pumping Test (Drawdown)	1.68E-03	3.30E-03
PW-1	Pumping Test (Recovery)	1.88E-03	3.70E-03
MW-1A	Pumping Test (Drawdown)	4.67E-03	9.20E-03
MW-1A	Pumping Test (Recovery)	4.57E-03	9.00E-03

Table 3-3
Summary of In-Situ Hydraulic Testing Results
Riverbend Landfill

Piezometer or Monitoring Well Designation [a]	Test Method [e]	Hydraulic Conductivity (cm/sec)	Hydraulic Conductivity (ft/min)
MW-3B [b]	Rising Head	8.46E-04	1.67E-03
MW-3B [c]	Pumping Test (Recovery)	1.20E-03	2.36E-03
MW-3B [c]	Pumping Test (Drawdown)	4.80E-03	9.45E-03
MW-4B [b]	Rising Head	1.47E-03	2.89E-03
MW-6B [b]	Rising Head	1.22E-03	2.40E-03
MW-7B [b]	Rising Head	8.04E-04	1.58E-03
MW-7B [b]	Falling Head	5.30E-05	1.04E-04
MW-7B [c]	Pumping Test (Drawdown)	2.50E-03	4.92E-03
MW-7B [c]	Pumping Test (Drawdown)	6.00E-03	1.18E-02
MW-8B [c]	Falling Head	1.02E-02	2.01E-02
MW-9B [c]	Falling Head	2.34E-02	4.61E-02
MW-10B [c]	Rising Head	4.73E-03	9.31E-03
MW-10B [c]	Falling Head	4.38E-03	8.62E-03
MW-11B [c]	Rising Head	4.46E-03	8.78E-03
MW-11B [c]	Falling Head	3.99E-03	7.85E-03
MW-18B [d]	Rising Head	1.68E-02	3.31E-02
MW-20B [d]	Rising Head	4.66E-02	9.17E-02
P-04B [c]	Rising Head	5.50E-03	1.08E-02
P-04B [c]	Falling Head	7.94E-03	1.56E-02

NOTES:

cm/sec = centimeters per second; ft = feet; ft-bgs = feet below ground surface; ft/min = feet per minute

[a] Existing monitoring wells include MW-6B, MW-10A, MW-10B, MW-17A, MW-19A, MW-20A, and MW-20B.

[b] EMCON Northwest, Inc., 1993, Remedial Investigation.

[c] EMCON Northwest, Inc., 1994, Additional Hydrogeologic Investigation.

[d] CH2M Hill, 2000, Technical Memorandum.

[e] Falling head or rising head methods indicate slug test.

Indicates well or piezometer located in the area of proposed Module 11.

Table 4-1

Surface Water Rights Information [a]
Updated July 2015
Riverbend Landfill

Water Right Designation	Permit No.	Name	Location	Use	Comment
Water Rights Information As Reported By EMCON in 1993 [b]					
1	S 51497	Marvin Bernards	T5S/R5W, Section 12 (NWN)	Irrigation	Cancelled in March 1998.
2	G 8078 [c]	Marfa Zumin	T5S/R1W, Section 30 (SENW) [d]	Irrigation	Cancelled in Marchy 1982.
3	S 9411	Chester L. Mulkey	T5S/R5W, Section 12 (NWNW)	Irrigation	
4	S 18197	Chester L. Mulkey	T5S/R5W, Section 1 (NWNW)	Irrigation	Transferred to Riverbend Landfill, Inc. in May 2001.
5	S 19196	Chester L. Mulkey	T5S/R5W, Section 1 (SESE)	Irrigation	
6	S 13340	Chester L. Mulkey	T5S/R5W, Section 12 (NWNW)	Irrigation	
7	S 27225	Marvin Bernards	T5S/R5W, Section 12 (NWNE)	Irrigation	
8	S 34487	Eugene Schmidt	T5S/R5W, Section 12 (NENW)	Irrigation	
9	S 13457	George Fuller	T5S/R5W, Section 11 (SESE)	Irrigation	
10	S 34335	Marvin Bernards	T5S/R5W, Section 12 (NWNE)	Irrigation	
11	S 13360	Ralph Bergstrom	T5S/R5W, Section 12 (NWSW)	Irrigation	
12	S 13361	Marie/Ralph Bergstrom	T5S/R5W, Section 12 (NWSW)	Irrigation	
13	S 13362	Carl/Marie Bergstrom	T5S/R5W, Section 12 (NWSW)	Irrigation	
14	S 22231	Ezekiel Williams	T5S/R5W, Section 12 (NWNW)	Irrigation	Transferred to John/Mary Bernards in October 2012.
15	S 36991	Charles/Vivian Headd	T5S/R5W, Section 12 (NW/NW)	Irrigation	Transferred to John/Mary Bernards in October 2012.
16	S 13457	George Fuller	T5S/R5W, Section 11 (SESE)	Irrigation	
17	S 39268	Steven Rice	T5S/R5W, Section 12 (NESW)	Irrigation	
18	S 51312	Steven Rice	T5S/R5W, Section 12 (NESW)	Irrigation	
19	S 13893	Van Lawson	T5S/R5W, Section 12 (NESW)	Irrigation	
20	S 27225	Marvin Bernards	T5S/R5W, Section 12 (NWNE)	Irrigation	
21	S 31306	John Crawford	T5S/R5W, Section 12 (SENE)	Irrigation	
22	S 31062	Jim Burrel	T5S/R5W, Section 12 (NENW)	Irrigation	
23	S 31310	Barbara C. Devine	T5S/R5W, Section 12 (NENW)	Irrigation	
24	S 38520	Elmer/Edwin Sharer	T5S/R4W, Section 6 (SESW)	Irrigation	
25	S 41461	Elmer/Edwin Sharer	T5S/R4W, Section 6 (SESW)	Irrigation	Transferred to Robinson Farm LLC in February 2005 to point of diversion outside of 1-mile radius of landfill (T5S/R4W, Section 5).

Table 4-1

Surface Water Rights Information [a]
Updated July 2015
Riverbend Landfill

Water Right Designation	Permit No.	Name	Location	Use	Comment
26	S 19093	Harold Heller	T5S/R4W, Section 6 (SWSW)	Irrigation	Transferred to Robinson Farm LLC in February 2005 to point of diversion outside of 1-mile radius of landfill (T5S/R4W, Section 5).
27	S 19336	Charlie Reed	T5S/R4W, Section 6 (SESE)	Irrigation	Transferred to Robinson Farm LLC in May 2014.
28	S 22343	Harold Heller	T5S/R4W, Section 6 (SWSW)	Irrigation	Transferred to Robinson Farm LLC in February 2005 to point of diversion outside of 1-mile radius of landfill (T5S/R4W, Section 5).
29	S 31575	Charlie Reed	T5S/R4W, Section 6 (SESE)	Irrigation	
Additional Water Rights Identified by SCS (June 2015)					
30	S 51712	John Bernards	T5S/R5W, Section 12 (NWNW)	Irrigation	Issued October 1995.
31	R 11583 and S 51714	McPhillips Farms, Inc.	T5S/R4W, Section 6 (SWNE)	Irrigation	Issued October 1995 associated with dam/pond construction (R 11583) and diversion of water from pond for irrigation (S 51714).

NOTES:

EMCON = EMCON Northwest, Inc.; SCS = SCS Engineers; G = Groundwater right permit; R = reservoir right permit; S = stream right permit

[a] Information researched by SCS from Oregon Water Resources Department, Water Rights Information System (WRIS), website accessed in June 2015, 2015. SCS was able to verify all water rights previously identified by EMCON.

[b] EMCON, May 19, 1993, Riverbend Landfill, Groundwater and Surface Water Beneficial Use Survey, prepared for Riverbend Landfill Co., Inc., based on 1-mile radius from landfill.

[c] Location is outside the 1-mile radius of the landfill and proposed Module 11 based on information township, range, and section number.

Table 4-2
Water Supply Well Information
Updated July 2015 [a]
Riverbend Landfill

Well No.	Well Location (OWRD Well No.[d])	Owner/Tenant	Well Location Addres	Approximate Land Surface Elevation (feet amsl)	Depth Drilled (feet bgs)	Date Well Completed	Drilling Company	Well Construction Detail	Geologic Unit Screened	Use	Number of Domestic Uses	Well Status in 1993	Approximate Depth to Groundwater and Date Measured (feet bgs)	Other
Water Supply Well Information As Reported By EMCON In 1993 (Locations Field Verified by EMCON) [b,c]														
1	NA	Loulou Gregory	13130 SW Hwy. 18 McMinnville, OR	150	39	NA	NA	NA	NA	Domestic & Garden	2	Active	15.4 ft. 06/29/93	Appears to be a hand-dug well. Supply has run out once at Christmas time.
2	NA	Judee Ward	13450 SW Hwy. 18 McMinnville, OR	150	79	Since 1981	NA	NA	NA	Domestic	NA	Active	15 ft. 06/29/93	Tenant uses bottled drinking water. (Modern drilled well.)
3	NA (YAMH 7318)	Michael Bernards (Production Well MB-1 or MB-2; MB-2 was decommisioned on June 30, 2015)	13465 SW Hwy. 18 McMinnville, OR	150	100	1980s	Bluewater Drilling Co.	Casing: 0 to 100 ft. Surface Seal: 0 to 20 ft. Perforations: 50 to 100 ft. Liner: 60 to 100 ft. Gravel Pack: 20 to 65 ft.	Clay and gravel	Domestic & Stock	13 When In Use	Backup	NA	Owner reports constructed similar to their other well (see EMCON #4).
4	NA (YAMH 7318)	Michael Bernards (Production Well MB-1 or MB-2; MB-2 was decommisioned on June 30, 2015)	13465 SW Hwy. 18 McMinnville, OR	150	100	04/26/81	Bluewater Drilling Co.	Casing: 0 to 100 ft. Surface Seal: 0 to 20 ft. Perforations: 50 to 100 ft. Liner: 60 to 100 ft. Gravel Pack: 20 to 65 ft.	Clay and gravel	Domestic & Stock	13	Active	NA	Also supplies water to 13445 SW Hwy. 18, Nan and Tom Bacon. Livestock usage: 2,400 gal/day for turkey 360 gal/day for cattle 100 gal/day for hogs Uses mostly river water for agriculture.
5	5S/5W-1 (YAMH 7230)	Michael Bernards (leased to Riverbend Landfill)	13465 SW Hwy. 18 McMinnville, OR	150	420	NA	Stephen Schneider (Abandonment)	NA	NA	Industrial	0	Decommisioned	40 ft. 07/20/89	Abandonment log available
6	NA (YAMH 7319)	Michael Bernards (leased to Riverbend Landfill) (Production Well PW-1)	13465 SW Hwy. 18 McMinnville, OR	150	97	10/09/81	Bluewater Drilling Co.	Casing: 0 to 97 ft. Surface Seal: 0 to 20 ft. Perforations: 57 to 97 ft. Liner: 55 to 97 ft. Gravel Pack: 20 to 77 ft.	Clay, gravel	Industrial	NA	Active	25 ft. 10/09/81	Near MW-1 monitoring well cluster
7	4S/4W-1 (YAMH 5925)	Tom Schmidt (formerly owned by Eugene Schmidt)	13940 SW Hwy. 18 McMinnville, OR	150	97	07/21/65	John Meeker Well Drilling	Casing: 0 to 95.5 ft. Surface Seal: 0 to 20 ft. Perforations: 35 to 55 ft. and 35 to 95 ft.	Clay, clay with gravel; Sandy clayey gravel	Domestic	4	Active	15 ft. 07/21/65	40 gpm with 22 feet drawdown. Uses river water for agriculture.
8	NA	Sanifill (Tenant, Loren Michey)	13965 SW Hwy. 18 McMinnville, OR	150	39.5	NA	NA	24-inch diameter brick lined hand-dug well	Unconsolidated sediment	Domestic	NA	Active	20 ft. 06/29/93	Well dries occasionally during the summer. 24-inch hand-dug well.
9	NA	Eugene Schmidt	14280 SW Hwy. 18 McMinnville, OR	150	180	1986	Shelburn (Bluewater Drilling)	6-inch Casing	NA	Domestic	NA	Active	NA	10 gpm; hard, saline water
10	5S/5W-11	Sanifill (Tenant, Wally Brosamble)	14325 SW Hwy. 18 McMinnville, OR	150	85	03/31/76	Cornelius Drilling	Surface Casing: 0 to 75 Surface Seal: 0 to 62	Sandstone (marine sediment)	Community	NA	Active	32 ft. 03/31/76	8 gpm with 44 feet drawdown
11	5S/5W-1 cc SW-SW (YAMH 7228)	Sanifill (Tenant, Mr. & Mrs. Walter Brosamble)	14325 SW Hwy. 18 McMinnville, OR	150	217	12/20/89	Wilcox Drilling & Pump Co.	Surface Casing: 0 to 66 ft. Surface Seal: 0 to 66 ft. Liner: 0 to 217 ft. Perforations: 127 to 147 ft. and 177 to 217 ft.	Clay, basalt, shale (marine sediment)	Community	NA	Inactive	48 ft. 12/20/89	13.5 gpm
12	55/5W-1 ad	John Bernards	14611 SW Hwy. 18 McMinnville, OR	152	NA	06/08/83	Wilcox Drilling & Pump Co.	NA	Basalt and shale	Domestic	--	Active	30 ft. 06/08/83	The original log is not available. The deepening log is included. (Also supplies water to 14615 SW Hwy. 18)
13	NA	Seifert	14705 SW Delashmutt Lane McMinnville, OR	150	70	NA	NA	NA	NA	Domestic	--	Active	12 ft. 04/04/93	The owner has not been contacted aft.er additional efforts.
14	NA	Estill Dill	14880 SW Delashmutt Ln McMinnville, OR (Also supplies water to 14930 Delashmutt Ln and 1501 SW Hwy. 18)	150	NA	NA	NA	NA	NA	Domestic	--	Active	NA	Provides adequate water. Water is hard with sulfur smell.
15	NA	Carl and Linda Bergstrom	14815 Delashmutt Ln McMinnville, OR	150	50 to 75 ft.	1900s	NA	NA	NA	Domestic	--	Active	NA	

Table 4-2
Water Supply Well Information
Updated July 2015 [a]
Riverbend Landfill

Well No.	Well Location (OWRD Well No.[d])	Owner/Tenant	Well Location Addres	Approximate Land Surface Elevation (feet amsl)	Depth Drilled (feet bgs)	Date Well Completed	Drilling Company	Well Construction Detail	Geologic Unit Screened	Use	Number of Domestic Uses	Well Status in 1993	Approximate Depth to Groundwater and Date Measured (feet bgs)	Other
16	NA	Carl and Linda Bergstrom	15225 Delashmutt Ln McMinnville, OR	150	86	before 1950	NA	NA	NA	Domestic	--	Active	NA	
17	4S/5W-36 (YAMH 6308)	Tom Schmidt	12970 SW Masonville Rd. McMinnville, OR	150	110.0	05/08/81	Bluewater Drilling Co.	Surface Casing: 0 to 80 ft. Surface Seal: 0 to 20 ft. Liner: 0 to 110 ft. Perforations: 53 to 110 ft.	Clay, sand, and gravel	Domestic	--	Active	NA	Potentially two wells on site
18	NA	Tom Schmidt	12970 SW Masonville Rd. McMinnville, OR	150	NA	NA	NA	NA	NA	NA	--	NA	NA	
19	NA	Steve Sandercock	13200 SW Masonville Rd. McMinnville, OR	150	95	76	Corvallis Drilling	6-inch Casing	--	Domestic	--	Active	Approx. 50 ft. (date not available)	
20	4S/5W-36	Ed Pritchert	13550 SW Masonville Rd. McMinnville, OR	150	65	09/14/70	Casey Jones Well Drilling Co. Inc.	Surface Casing: 0 to 52 ft. Surface Seal: 0 to 52 ft.	Shale and sand	Domestic and Stock	2	Active	18 ft. 09/14/70	33 gpm with 40 feet drawdown Livestock usage: 21 gallons per day An unused hand-dug well is also on site.
21	4S/5W-36 N SW-SW (YAMH 6314)	Cornelius Depuy	13760 SW Masonville Rd. McMinnville, OR	150	79	09/26/68	Wilcox Drilling & Pump Co.	Casing: 0 to 77 ft. Surface Seal: 0 to 18 ft. Perforations: 59 to 77 ft. Gravel Pack: 18 to 79 ft.	Clay, sand & gravel	Domestic/ Irrigation	NA	Active	14 ft. 09/26/68	20 gpm with 55 ft. drawdown
22	NA	Cornelius Depuy	13760 SW Masonville Rd. McMinnville, OR	150	NA	NA	NA	NA	NA	Inactive	NA	Inactive	NA	Not in use
23	NA	Smith	1400 SW Masonville Rd. McMinnville, OR	150	52	1950 +/-	Wilcox Drilling & Pump Co.	6-inch Casing	NA	Domestic	--	Active	NA	
24	NA	Smith	1400 SW Masonville Rd. McMinnville, OR	150	26	NA	NA	NA	NA	Irrigation	--	Active	NA	Hand-dug well
25	5S/5W-2 (YAMH 624)	Marvin Bernards	14295 SW Masonville Rd. McMinnville, OR (Also supplies water to 14265 SW Masonville Rd. and 14735 SW Masonville Rd.)	155	140	02/26/75	Bluewater Drilling Co.	Casing: 0 to 53 ft. Surface Seal: 0 to 53 ft.	Clay and shale	Domestic & Commercial Livestock	--	Active	15 ft. 02/26/75	There is also a well of unknown construction and a decommisioned hand-dug well.
26	NA	Marvin Bernards	14735 SW Masonville Rd.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	No well on property; water obtained from 14295 SW Masonville Rd.
27	5S/4W-6 cb (YAMH 6865)	B. A. McPhillip, McPhillips Farms	Rt. 3, McMinnville, OR	150	75	12/02/66	Wilcox Drilling & Pump Co.	Casing: 0 to 75 ft. Surface Seal: 0 to 19 ft. Perforations: 64 to 75 ft. Gravel Pack: 19 to 75 ft.	Clay and gravel	Domestic	NA	NA	31 ft. 11/08/66	20 gpm with 37 ft. drawdown. No trespasing on property without prior permision.
Water Supply Well Information As Reported By EMCON In 1993 And 1994 (Locations Not Field Verified by EMCON) [b]														
28	4S/5W-36 dd SE-SE (YAMH 6310)	John Fuhrer	NA	150	140	12/23/78	Wilcox Drilling & Pump Co.	Surface Casing: 0 to 60 ft. Surface Seal: 0 to 60 ft. Open Hole: 60 to 140 ft. Liner: 60 to 140 ft. Perforations: 100 to 140 ft.	Basalt & marine sediments	Domestic	NA	NA	7 ft. 12/23/78	25 gpm with 128 ft. drawdown
29	4S/5W-36 ca NE-SW (YAMH 6313)	Wm. Armstrong	NA	155	310	11/07/71	Wilcox Drilling & Pump Co.	Surface Casing: 0 to 40 ft. Surface Seal: 0 to 40 ft. Open Hole: 40 to 150 ft. Unknown: 150 to 310 ft. Asumed Backfilled	Marine sediments	Domestic	NA	NA	22 ft. 11/06/71	12 gpm with 122 ft. drawdown
30	5S/5W-11 bb NW-NW (YAMH 7287)	Bob Hamilton	NA	165	170	04/12/84	Blue Water Drilling Co.	Surface Casing: 0 to 36 ft. Surface Seal: 0 to 36 ft. Open Hole: 36 to 120 ft. Unknown: 120 to 170 ft. Asumed Backfilled	Basalt	Domestic	NA	NA	8 ft. 04/12/84	Saline water (driller comment) at 160 ft. bgs 4 gpm

Table 4-2
Water Supply Well Information
Updated July 2015 [a]
Riverbend Landfill

Well No.	Well Location (OWRD Well No.[d])	Owner/Tenant	Well Location Addres	Approximate Land Surface Elevation (feet amsl)	Depth Drilled (feet bgs)	Date Well Completed	Drilling Company	Well Construction Detail	Geologic Unit Screened	Use	Number of Domestic Uses	Well Status in 1993	Approximate Depth to Groundwater and Date Measured (feet bgs)	Other
31	5S/5W-11 ac NE-SW (YAMH 7290)	Doug Munro	NA	145	61	06/12/75	Wilcox Drilling & Pump Co.	Casing: 0 to 58 ft. Surface Seal: 0 to 19 ft. Perforations: 38 to 58 ft.	Shale (marine sediments)	Domestic	NA	NA	10 ft. 06/12/75	30 gpm with 45 ft. drawdown
32	5S/5W-11 ad SE-NE (YAMH 7293)	Ron Turley	Rt. 3, Box 57 McMinnville, OR	140	143 to 202	Installed 1971 Deepened 06/08/83	Wilcox Drilling & Pump Co.	NA	Basalt & shale (marine sediments)	Domestic	NA	NA	30 ft. 06/08/83	6 gpm with 193 ft. drawdown
Additional Water Supply Well Information From OWRD Water Well Reports Reviewed by SCS (June 2015)														
33	4S/5W-35 SE-SE L60750 (YAMH 53782)	Gil & Sharon Depuy	13780 SW Masonville Rd. McMinnville, OR 97128	150	62	06/11/04	Wilcox Drilling & Pump Co.	Casing: +1 to 62 ft. Surface Seal: 0 to 35 ft. Perforations: 42 to 62 ft. Gravel Pack: 35 to 62 ft.	Gravel	Domestic	NA	NA	17 ft. 6/11/04	Well yield of 50 gpm
34	4S/5W-35 SE-SE L108409 (YAMH 56692)	Mrs. Fay Smith	14000 SW Masonville Rd. McMinnville, OR 97128	NA	75	12/23/13	Wilcox Drilling & Pump Co.	Casing: 2 to 54 ft. Surface Seal: 0 to 35 ft. Liner: 3 to 75 ft. Perforations: 35 to 54 ft. and 55 to 75 ft. Gravel Pack: 35 to 48 ft.	Sandstone	Domestic	NA	NA	10 ft. 12/28/2013	Well yield of 30 gpm
35	5S/5W-1 L76201 (YAMH 54035)	John Bernards	13801 SW Masonville Rd. McMinnville, OR 97128	NA	69	02/14/05	Blue Water Drilling Co.	Surface Casing: +2 to 69 ft. Surface Seal: 0 to 21 ft. Perforations: 59 to 65 ft. Gravel Pack: 21 to 69 ft.	Sand and coarse gravel (with clay)	Domestic	NA	NA	4 ft. 02/14/05	28 gpm with 20 ft. drawdown
36	5S/5W-2 bc SW-NW (YAMH 7321)	Ernie Smith	Rt. 1 Box 262 McMinnville, OR	NA	200	08/13/81	Wilcox Drilling & Pump Co.	Surface Casing: 0 to 19 ft. Surface Seal: 0 to 19 ft. Liner: 10 to 200 ft. Perforations: 160 to 200 ft. Gravel Pack: none	Coarse grained basalt	Domestic	NA	NA	162 ft. 09/01/81	
37	5S/5W-11 SE-NW L72050 (YAMH 54030)	Mary Beth Bernards	15000 SW Oldsville Road McMinnville, OR 97128	NA	120	02/08/05	Blue Water Drilling Co.	Surface Casing: +1.5 to 62 ft. Surface Seal: 0 to 22 ft. Perforations: 54 to 61 ft. Gravel Pack: 22 to 62 ft. Caving/Slough: 62 to 120 ft.	Sand, some gravel	Domestic	NA	NA	8 ft. 02/08/05	Well yield of 60 gpm
38	5S/5W-11 bc (YAMH 3887)	Ron & Rhonda Larson	14815 SW Delashmutt Ln. McMinnville, OR 97128	NA	100	05/18/95	Blue Water Drilling Co.	Surface Casing: +1 to 39 ft. Surface Seal: 0 to 39 ft. Liner: 0 to 100 ft. Perforations: 80 to 100 ft. Gravel Pack: unknown	Marine Rock	Domestic	NA	NA	18 ft. 05/18/95	Well yield of 7 gpm
39	5S/5W-11 SE-NW L106618 (YAMH 56263)	Robert Greenwood	15000 SW Delashmutt Ln. McMinnville, OR 97128	NA	125	05/10/12	Wilcox Drilling & Pump Co.	Surface Casing: +2 to 50 ft. Surface Seal: 0 to 50 ft. Liner: 4 to 105 ft. Screen: 105 to 125 ft. Gravel Pack: 40 to 125 ft.	Gravel and Clay	Domestic	NA	NA	7 ft. 5/10/12	Well yield of 30 gpm
40	5S/5W-11 db NW-SE (YAMH 3138)	Lester Robuck	16401 SW Gopher Vally Rd. Sheridan, OR 97378	NA	86	07/15/94	Wilcox Drilling & Pump Co.	Surface Casing: +2 to 18 ft. Surface Seal: 0 to 18 ft. Liner: 6 to 86 ft. Perforations: 46 to 86 Gravel Pack: none	Basalt	Domestic	NA	NA	20 ft. 7/15/94	Well yield of 100 gpm

Notes:

EMCON = EMCON Northwest, Inc.; feet bgs = feet below ground surface; feet amsl; feet above mean sea level; gpm = gallons per minute; NA = not available; OWRD = Oregon Water Resources Department; SCS = SCS Engineers

[a] Information was researched by SCS from Water Well Reports (i.e., well logs) maintained by the OWRD that were accesed through the OWRD internet-based well log query in June 2015.

[b] EMCON, May 19, 1993, Riverbend Landfill, Groundwater and Surface Water Beneficial Use Survey, prepared for Riverbend Landfill Co., Inc., based on 1-mile radius from landfill.

EMCON, July 29, 1994, Additional Hydrogeological Investigation, Riverbend Landfill, Yamhill County, Oregon, prepared for Riverbend Landfill Co., Inc., based on 1-mile radius from landfill.

[c] Locations field verified during door-to-door surveys.

[d] An OWRD well number identified by "YAMH" is not available for all wells.

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-01A (Deep)	11-Feb-93	155.30	20.72	134.58
MW-01A (Deep)	12-May-93	155.30	22.37	132.93
MW-01A (Deep)	12-Jul-93	155.30	26.49	128.81
MW-01A (Deep)	10-Aug-93	155.30	28.08	127.22
MW-01A (Deep)	14-Sep-93	155.30	28.39	126.91
MW-01A (Deep)	12-Oct-93	155.30	29.33	125.97
MW-01A (Deep)	4-Dec-93	155.30	28.97	126.33
MW-01A (Deep)	5-Jan-94	155.30	22.76	132.54
MW-01A (Deep)	22-Feb-94	155.30	20.92	134.38
MW-01A (Deep)	25-Mar-94	155.30	21.83	133.47
MW-01A (Deep)	26-Apr-94	155.30	22.25	133.05
MW-01A (Deep)	26-May-94	155.30	31.57	123.73
MW-01A (Deep)	1-Jul-94	155.30	29.88	125.42
MW-01A (Deep)	2-Aug-94	155.30	33.00	122.30
MW-01A (Deep)	2-Sep-94	155.30	33.27	122.03
MW-01A (Deep)	13-Oct-94	155.30	30.12	125.18
MW-01A (Deep)	11-Nov-94	155.30	28.38	126.92
MW-01A (Deep)	21-Dec-94	155.30	23.22	132.08
MW-01A (Deep)	20-Jan-95	155.30	21.85	133.45
MW-01A (Deep)	23-Feb-95	155.30	21.49	133.81
MW-01A (Deep)	28-Mar-95	155.30	21.79	133.51
MW-01A (Deep)	14-Apr-95	155.30	23.00	132.30
MW-01A (Deep)	18-May-95	155.30	20.12	135.18
MW-01A (Deep)	20-Jun-95	155.30	26.24	129.06
MW-01A (Deep)	26-Jul-95	155.30	27.54	127.76
MW-01A (Deep)	22-Aug-95	155.30	32.40	122.90
MW-01A (Deep)	11-Sep-95	155.30	28.53	126.77
MW-01A (Deep)	24-Oct-95	155.30	27.29	128.01
MW-01A (Deep)	20-Dec-95	155.30	21.64	133.66
MW-01A (Deep)	11-Jan-96	155.30	22.19	133.11
MW-01A (Deep)	16-Feb-96	155.30	21.39	133.91
MW-01A (Deep)	30-Mar-96	155.30	22.58	132.72
MW-01A (Deep)	9-Apr-96	155.30	27.30	128.00
MW-01A (Deep)	28-May-96	155.30	26.72	128.58
MW-01A (Deep)	28-Jun-96	155.30	30.90	124.40
MW-01A (Deep)	30-Jul-96	155.30	33.72	121.58
MW-01A (Deep)	29-Aug-96	155.30	31.58	123.72
MW-01A (Deep)	30-Sep-96	155.30	32.63	122.67
MW-01A (Deep)	31-Oct-96	155.30	32.20	123.10
MW-01A (Deep)	12-Dec-96	155.30	23.20	132.10
MW-01A (Deep)	22-Jan-97	155.30	21.23	134.07
MW-01A (Deep)	31-Mar-97	155.30	23.33	131.97
MW-01A (Deep)	19-May-97	155.30	32.13	123.17
MW-01A (Deep)	9-Sep-97	155.30	28.95	126.35
MW-01A (Deep)	18-Dec-97	155.30	21.79	133.51
MW-01A (Deep)	17-Mar-98	155.30	25.42	129.88
MW-01A (Deep)	8-Jun-98	155.30	30.90	124.40
MW-01A (Deep)	18-Aug-98	155.30	32.21	123.09
MW-01A (Deep)	5-Nov-98	155.30	26.93	128.37

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-01A (Deep)	22-Mar-99	155.30	21.93	133.37
MW-01A (Deep)	7-Sep-99	155.30	31.58	123.72
MW-01A (Deep)	9-Dec-99	155.30	NR	---
MW-01A (Deep)	7-Feb-00	155.30	20.38	134.92
MW-01A (Deep)	29-May-00	155.30	29.43	125.87
MW-01A (Deep)	21-Aug-00	155.30	33.01	122.29
MW-01A (Deep)	6-Nov-00	155.30	27.14	128.16
MW-01A (Deep)	29-Jan-01	155.30	23.97	131.33
MW-01A (Deep)	23-Apr-01	155.30	23.59	131.71
MW-01A (Deep)	27-Aug-01	155.30	28.95	126.35
MW-01A (Deep)	5-Nov-01	155.30	29.45	125.85
MW-01A (Deep)	7-Feb-02	155.30	21.81	133.49
MW-01A (Deep)	8-Apr-02	155.30	25.93	129.37
MW-01A (Deep)	22-Jul-02	155.30	30.21	125.09
MW-01A (Deep)	7-Oct-02	155.30	30.21	125.09
MW-01A (Deep)	24-Feb-03	155.30	24.89	130.41
MW-01A (Deep)	12-May-03	155.30	27.77	127.53
MW-01A (Deep)	18-Aug-03	155.30	42.78	112.52
MW-01A (Deep)	17-Nov-03	155.30	32.69	122.61
MW-01A (Deep)	19-Apr-04	155.30	29.88	125.42
MW-01A (Deep)	8-Nov-04	155.30	29.16	126.14
MW-01A (Deep)	23-May-05	155.30	28.77	126.53
MW-01A (Deep)	24-Oct-05	155.30	29.76	125.54
MW-01A (Deep)	8-May-06	155.30	33.75	121.55
MW-01A (Deep)	16-Oct-06	155.30	32.05	123.25
MW-01A (Deep)	7-May-07	155.30	28.31	126.99
MW-01A (Deep)	5-Nov-07	155.30	30.35	124.95
MW-01A (Deep)	19-May-08	155.30	46.09	109.21
MW-01A (Deep)	10-Nov-08	155.30	40.69	114.61
MW-01A (Deep)	4-May-09	155.30	24.81	130.49
MW-01A (Deep)	16-Nov-09	155.30	28.06	127.24
MW-01A (Deep)	19-Apr-10	155.30	31.96	123.34
MW-01A (Deep)	4-Oct-10	155.30	34.29	121.01
MW-01A (Deep)	12-Apr-11	155.30	24.57	130.73
MW-01A (Deep)	1-Nov-11	155.30	29.60	125.70
MW-01A (Deep)	30-Apr-12	155.30	23.35	131.95
MW-01A (Deep)	12-Nov-12	155.30	40.50	114.80
MW-01A (Deep)	8-Apr-13	155.30	22.65	132.65
MW-01A (Deep)	18-Nov-13	155.30	25.57	129.73
MW-01A (Deep)	28-Apr-14	155.30	23.28	132.02
MW-01A (Deep)	17-Nov-14	155.30	38.92	116.38
MW-01B (Shallow)	11-Feb-93	155.00	7.02	147.98
MW-01B (Shallow)	12-May-93	155.00	7.12	147.88
MW-01B (Shallow)	12-Jul-93	155.00	11.63	143.37
MW-01B (Shallow)	10-Aug-93	155.00	12.56	142.44
MW-01B (Shallow)	14-Sep-93	155.00	14.30	140.70
MW-01B (Shallow)	12-Oct-93	155.00	14.52	140.48
MW-01B (Shallow)	4-Dec-93	155.00	9.43	145.57
MW-01B (Shallow)	5-Jan-94	155.00	4.74	150.26

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-01B (Shallow)	22-Feb-94	155.00	6.14	148.86
MW-01B (Shallow)	25-Mar-94	155.00	5.85	149.15
MW-01B (Shallow)	26-Apr-94	155.00	8.54	146.46
MW-01B (Shallow)	26-May-94	155.00	10.90	144.10
MW-01B (Shallow)	1-Jul-94	155.00	13.78	141.22
MW-01B (Shallow)	2-Aug-94	155.00	14.64	140.36
MW-01B (Shallow)	2-Sep-94	155.00	15.67	139.33
MW-01B (Shallow)	13-Oct-94	155.00	17.17	137.83
MW-01B (Shallow)	11-Nov-94	155.00	17.77	137.23
MW-01B (Shallow)	21-Dec-94	155.00	4.73	150.27
MW-01B (Shallow)	20-Jan-95	155.00	5.16	149.84
MW-01B (Shallow)	23-Feb-95	155.00	5.70	149.30
MW-01B (Shallow)	28-Mar-95	155.00	6.44	148.56
MW-01B (Shallow)	14-Apr-95	155.00	6.42	148.58
MW-01B (Shallow)	18-May-95	155.00	9.07	145.93
MW-01B (Shallow)	20-Jun-95	155.00	9.72	145.28
MW-01B (Shallow)	26-Jul-95	155.00	11.75	143.25
MW-01B (Shallow)	22-Aug-95	155.00	13.13	141.87
MW-01B (Shallow)	11-Sep-95	155.00	16.10	138.90
MW-01B (Shallow)	24-Oct-95	155.00	13.83	141.17
MW-01B (Shallow)	22-Nov-95	155.00	6.97	148.03
MW-01B (Shallow)	20-Dec-95	155.00	5.16	149.84
MW-01B (Shallow)	11-Jan-96	155.00	5.22	149.78
MW-01B (Shallow)	16-Feb-96	155.00	6.22	148.78
MW-01B (Shallow)	30-Mar-96	155.00	8.00	147.00
MW-01B (Shallow)	9-Apr-96	155.00	8.49	146.51
MW-01B (Shallow)	28-May-96	155.00	6.85	148.15
MW-01B (Shallow)	28-Jun-96	155.00	9.83	145.17
MW-01B (Shallow)	30-Jul-96	155.00	12.51	142.49
MW-01B (Shallow)	29-Aug-96	155.00	12.18	142.82
MW-01B (Shallow)	30-Sep-96	155.00	11.02	143.98
MW-01B (Shallow)	31-Oct-96	155.00	7.04	147.96
MW-01B (Shallow)	12-Dec-96	155.00	5.31	149.69
MW-01B (Shallow)	22-Jan-97	155.00	5.01	149.99
MW-01B (Shallow)	31-Mar-97	155.00	6.73	148.27
MW-01B (Shallow)	19-May-97	155.00	9.16	145.84
MW-01B (Shallow)	9-Sep-97	155.00	11.53	143.47
MW-01B (Shallow)	18-Dec-97	155.00	4.96	150.04
MW-01B (Shallow)	17-Mar-98	155.00	5.98	149.02
MW-01B (Shallow)	8-Jun-98	155.00	8.10	146.90
MW-01B (Shallow)	18-Aug-98	155.00	10.71	144.29
MW-01B (Shallow)	5-Nov-98	155.00	11.97	143.03
MW-01B (Shallow)	22-Mar-99	155.00	5.13	149.87
MW-01B (Shallow)	7-Sep-99	155.00	14.43	140.57
MW-01B (Shallow)	9-Dec-99	155.00	NR	---
MW-01B (Shallow)	7-Feb-00	155.00	6.00	149.00
MW-01B (Shallow)	29-May-00	155.00	8.50	146.50
MW-01B (Shallow)	21-Aug-00	155.00	NR	---
MW-01B (Shallow)	6-Nov-00	155.00	NR	---

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-01B (Shallow)	29-Jan-01	155.00	9.09	145.91
MW-01B (Shallow)	23-Apr-01	155.00	8.61	146.39
MW-01B (Shallow)	27-Aug-01	155.00	NR	---
MW-01B (Shallow)	5-Nov-01	155.00	NR	---
MW-01B (Shallow)	7-Feb-02	155.00	5.08	149.92
MW-01B (Shallow)	8-Apr-02	155.00	7.43	147.57
MW-01B (Shallow)	22-Jul-02	155.00	NR	---
MW-01B (Shallow)	7-Oct-02	155.00	NR	---
MW-01B (Shallow)	24-Feb-03	155.00	5.75	149.25
MW-01B (Shallow)	12-May-03	155.00	7.33	147.67
MW-01B (Shallow)	18-Aug-03	155.00	NR	---
MW-01B (Shallow)	17-Nov-03	155.00	20.62	134.38
MW-01B (Shallow)	19-Apr-04	155.00	7.54	147.46
MW-01B (Shallow)	8-Nov-04	155.00	17.53	137.47
MW-01B (Shallow)	23-May-05	155.00	7.57	147.43
MW-01B (Shallow)	24-Oct-05	155.00	22.25	132.75
MW-01B (Shallow)	8-May-06	155.00	9.24	145.76
MW-01B (Shallow)	16-Oct-06	155.00	23.22	131.78
MW-01B (Shallow)	7-May-07	155.00	8.10	146.90
MW-01B (Shallow)	5-Nov-07	155.00	19.03	135.97
MW-01B (Shallow)	19-May-08	155.00	8.49	146.51
MW-01B (Shallow)	10-Nov-08	155.00	17.43	137.57
MW-01B (Shallow)	4-May-09	155.00	6.90	148.10
MW-01B (Shallow)	16-Nov-09	155.00	9.70	145.30
MW-01B (Shallow)	19-Apr-10	155.00	6.55	148.45
MW-01B (Shallow)	5-Oct-10	155.00	18.01	136.99
MW-01B (Shallow)	12-Apr-11	155.00	5.16	149.84
MW-01B (Shallow)	1-Nov-11	155.00	13.34	141.66
MW-01B (Shallow)	30-Apr-12	155.00	7.09	147.91
MW-01B (Shallow)	12-Nov-12	155.00	10.14	144.86
MW-01B (Shallow)	8-Apr-13	155.00	6.54	148.46
MW-01B (Shallow)	18-Nov-13	155.00	9.81	145.19
MW-01B (Shallow)	28-Apr-14	155.00	5.51	149.49
MW-01B (Shallow)	17-Nov-14	155.00	7.70	147.30
MW-10A (Shallow)	4-Dec-93	153.21	16.35	136.86
MW-10A (Shallow)	5-Jan-94	153.21	4.08	149.13
MW-10A (Shallow)	22-Feb-94	153.21	3.96	149.25
MW-10A (Shallow)	25-Mar-94	153.21	4.62	148.59
MW-10A (Shallow)	26-Apr-94	153.21	6.22	146.99
MW-10A (Shallow)	26-May-94	153.21	8.31	144.90
MW-10A (Shallow)	1-Jul-94	153.21	15.49	137.72
MW-10A (Shallow)	2-Aug-94	153.21	19.44	133.77
MW-10A (Shallow)	2-Sep-94	153.21	20.72	132.49
MW-10A (Shallow)	13-Oct-94	153.21	21.71	131.50
MW-10A (Shallow)	11-Nov-94	153.21	14.42	138.79
MW-10A (Shallow)	21-Dec-94	153.21	4.82	148.39
MW-10A (Shallow)	20-Jan-95	153.21	4.65	148.56
MW-10A (Shallow)	23-Feb-95	153.21	4.88	148.33
MW-10A (Shallow)	28-Mar-95	153.21	5.41	147.80

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-10A (Shallow)	14-Apr-95	153.21	5.60	147.61
MW-10A (Shallow)	18-May-95	153.21	8.05	145.16
MW-10A (Shallow)	20-Jun-95	153.21	9.54	143.67
MW-10A (Shallow)	26-Jul-95	153.21	14.69	138.52
MW-10A (Shallow)	22-Aug-95	153.21	17.20	136.01
MW-10A (Shallow)	11-Sep-95	153.21	18.32	134.89
MW-10A (Shallow)	24-Oct-95	153.21	17.85	135.36
MW-10A (Shallow)	22-Nov-95	153.21	7.00	146.21
MW-10A (Shallow)	20-Dec-95	153.21	4.39	148.82
MW-10A (Shallow)	11-Jan-96	153.21	4.46	148.75
MW-10A (Shallow)	16-Feb-96	153.21	5.16	148.05
MW-10A (Shallow)	30-Mar-96	153.21	6.24	146.97
MW-10A (Shallow)	9-Apr-96	153.21	6.49	146.72
MW-10A (Shallow)	28-May-96	153.21	5.66	147.55
MW-10A (Shallow)	28-Jun-96	153.21	9.63	143.58
MW-10A (Shallow)	30-Jul-96	153.21	15.73	137.48
MW-10A (Shallow)	29-Aug-96	153.21	18.35	134.86
MW-10A (Shallow)	30-Sep-96	153.21	10.01	143.20
MW-10A (Shallow)	31-Oct-96	153.21	17.97	135.24
MW-10A (Shallow)	12-Dec-96	153.21	4.56	148.65
MW-10A (Shallow)	22-Jan-97	153.21	4.55	148.66
MW-10A (Shallow)	31-Mar-97	153.21	5.67	147.54
MW-10A (Shallow)	19-May-97	153.21	6.74	146.47
MW-10A (Shallow)	9-Sep-97	153.21	15.49	137.72
MW-10A (Shallow)	18-Dec-97	153.21	3.93	149.28
MW-10A (Shallow)	17-Mar-98	153.21	5.00	148.21
MW-10A (Shallow)	8-Jun-98	153.21	6.20	147.01
MW-10A (Shallow)	18-Aug-98	153.21	11.35	141.86
MW-10A (Shallow)	5-Nov-98	153.21	14.03	139.18
MW-10A (Shallow)	22-Mar-99	153.21	5.29	147.92
MW-10A (Shallow)	7-Sep-99	153.21	18.22	134.99
MW-10A (Shallow)	9-Dec-99	153.21	NR	---
MW-10A (Shallow)	7-Feb-00	153.21	5.00	148.21
MW-10A (Shallow)	29-May-00	153.21	6.70	146.51
MW-10A (Shallow)	21-Aug-00	153.21	17.19	136.02
MW-10A (Shallow)	6-Nov-00	153.21	19.82	133.39
MW-10A (Shallow)	29-Jan-01	153.21	8.34	144.87
MW-10A (Shallow)	23-Apr-01	153.21	7.26	145.95
MW-10A (Shallow)	27-Aug-01	153.21	13.70	139.51
MW-10A (Shallow)	5-Nov-01	153.21	19.78	133.43
MW-10A (Shallow)	7-Feb-02	153.21	4.62	148.59
MW-10A (Shallow)	8-Apr-02	153.21	5.98	147.23
MW-10A (Shallow)	22-Jul-02	153.21	15.39	137.82
MW-10A (Shallow)	7-Oct-02	153.21	21.01	132.20
MW-10A (Shallow)	24-Feb-03	153.21	5.00	148.21
MW-10A (Shallow)	12-May-03	153.21	6.02	147.19
MW-10A (Shallow)	18-Aug-03	153.21	18.81	134.40
MW-10A (Shallow)	17-Nov-03	153.21	27.01	126.20
MW-10A (Shallow)	19-Apr-04	153.21	5.97	147.24

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-10A (Shallow)	8-Nov-04	153.21	19.61	133.60
MW-10A (Shallow)	23-May-05	153.21	5.70	147.51
MW-10A (Shallow)	24-Oct-05	153.21	20.74	132.47
MW-10A (Shallow)	8-May-06	153.21	7.44	145.77
MW-10A (Shallow)	16-Oct-06	153.21	22.55	130.66
MW-10A (Shallow)	7-May-07	153.21	6.21	147.00
MW-10A (Shallow)	5-Nov-07	153.21	20.39	132.82
MW-10A (Shallow)	19-May-08	153.21	7.15	146.06
MW-10A (Shallow)	10-Nov-08	153.21	19.75	133.46
MW-10A (Shallow)	4-May-09	153.21	5.51	147.70
MW-10A (Shallow)	16-Nov-09	153.21	12.95	140.26
MW-10A (Shallow)	19-Apr-10	153.21	4.81	148.40
MW-10A (Shallow)	4-Oct-10	153.21	19.05	134.16
MW-10A (Shallow)	12-Apr-11	153.21	3.94	149.27
MW-10A (Shallow)	1-Nov-11	153.21	19.07	134.14
MW-10A (Shallow)	30-Apr-12	153.21	4.84	148.37
MW-10A (Shallow)	12-Nov-12	153.21	17.95	135.26
MW-10A (Shallow)	8-Apr-13	153.21	4.65	148.56
MW-10A (Shallow)	18-Nov-13	153.21	17.96	135.25
MW-10A (Shallow)	28-Apr-14	153.21	4.38	148.83
MW-10A (Shallow)	17-Nov-14	153.21	14.95	138.26
MW-10B (Deep)	4-Dec-93	152.87	23.61	129.26
MW-10B (Deep)	5-Jan-94	152.87	18.59	134.28
MW-10B (Deep)	22-Feb-94	152.87	12.53	140.34
MW-10B (Deep)	25-Mar-94	152.87	6.55	146.32
MW-10B (Deep)	26-Apr-94	152.87	17.44	135.43
MW-10B (Deep)	26-May-94	152.87	20.31	132.56
MW-10B (Deep)	1-Jul-94	152.87	21.99	130.88
MW-10B (Deep)	2-Aug-94	152.87	25.65	127.22
MW-10B (Deep)	2-Sep-94	152.87	25.20	127.67
MW-10B (Deep)	13-Oct-94	152.87	25.83	127.04
MW-10B (Deep)	11-Nov-94	152.87	22.60	130.27
MW-10B (Deep)	21-Dec-94	152.87	18.13	134.74
MW-10B (Deep)	20-Jan-95	152.87	17.11	135.76
MW-10B (Deep)	23-Feb-95	152.87	16.71	136.16
MW-10B (Deep)	28-Mar-95	152.87	17.06	135.81
MW-10B (Deep)	14-Apr-95	152.87	17.44	135.43
MW-10B (Deep)	18-May-95	152.87	18.64	134.23
MW-10B (Deep)	20-Jun-95	152.87	19.00	133.87
MW-10B (Deep)	26-Jul-95	152.87	22.52	130.35
MW-10B (Deep)	22-Aug-95	152.87	23.88	128.99
MW-10B (Deep)	11-Sep-95	152.87	23.74	129.13
MW-10B (Deep)	24-Oct-95	152.87	23.23	129.64
MW-10B (Deep)	22-Nov-95	152.87	20.78	132.09
MW-10B (Deep)	20-Dec-95	152.87	16.44	136.43
MW-10B (Deep)	11-Jan-96	152.87	16.25	136.62
MW-10B (Deep)	16-Feb-96	152.87	15.57	137.30
MW-10B (Deep)	30-Mar-96	152.87	17.07	135.80
MW-10B (Deep)	9-Apr-96	152.87	19.30	133.57

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-10B (Deep)	28-May-96	152.87	17.15	135.72
MW-10B (Deep)	28-Jun-96	152.87	19.86	133.01
MW-10B (Deep)	30-Jul-96	152.87	22.85	130.02
MW-10B (Deep)	29-Aug-96	152.87	24.53	128.34
MW-10B (Deep)	30-Sep-96	152.87	22.39	130.48
MW-10B (Deep)	31-Oct-96	152.87	23.31	129.56
MW-10B (Deep)	12-Dec-96	152.87	16.38	136.49
MW-10B (Deep)	22-Jan-97	152.87	16.15	136.72
MW-10B (Deep)	31-Mar-97	152.87	16.17	136.70
MW-10B (Deep)	19-May-97	152.87	19.86	133.01
MW-10B (Deep)	9-Sep-97	152.87	22.91	129.96
MW-10B (Deep)	18-Dec-97	152.87	16.94	135.93
MW-10B (Deep)	17-Mar-98	152.87	15.75	137.12
MW-10B (Deep)	8-Jun-98	152.87	19.47	133.40
MW-10B (Deep)	18-Aug-98	152.87	22.70	130.17
MW-10B (Deep)	5-Nov-98	152.87	22.89	129.98
MW-10B (Deep)	22-Mar-99	152.87	14.86	138.01
MW-10B (Deep)	7-Sep-99	152.87	25.29	127.58
MW-10B (Deep)	9-Dec-99	152.87	19.41	133.46
MW-10B (Deep)	7-Feb-00	152.87	15.87	137.00
MW-10B (Deep)	29-May-00	152.87	19.08	133.79
MW-10B (Deep)	21-Aug-00	152.87	24.45	128.42
MW-10B (Deep)	6-Nov-00	152.87	23.13	129.74
MW-10B (Deep)	29-Jan-01	152.87	18.78	134.09
MW-10B (Deep)	23-Apr-01	152.87	18.50	134.37
MW-10B (Deep)	27-Aug-01	152.87	23.88	128.99
MW-10B (Deep)	5-Nov-01	152.87	25.06	127.81
MW-10B (Deep)	7-Feb-02	152.87	16.15	136.72
MW-10B (Deep)	8-Apr-02	152.87	18.32	134.55
MW-10B (Deep)	22-Jul-02	152.87	26.14	126.73
MW-10B (Deep)	7-Oct-02	152.87	26.75	126.12
MW-10B (Deep)	24-Feb-03	152.87	17.52	135.35
MW-10B (Deep)	12-May-03	152.87	19.45	133.42
MW-10B (Deep)	18-Aug-03	152.87	29.72	123.15
MW-10B (Deep)	17-Nov-03	152.87	22.86	130.01
MW-10B (Deep)	19-Apr-04	152.87	21.34	131.53
MW-10B (Deep)	8-Nov-04	152.87	24.13	128.74
MW-10B (Deep)	23-May-05	152.87	20.86	132.01
MW-10B (Deep)	24-Oct-05	152.87	26.07	126.80
MW-10B (Deep)	8-May-06	152.87	24.46	128.41
MW-10B (Deep)	16-Oct-06	152.87	26.44	126.43
MW-10B (Deep)	7-May-07	152.87	19.64	133.23
MW-10B (Deep)	5-Nov-07	152.87	24.89	127.98
MW-10B (Deep)	19-May-08	152.87	30.87	122.00
MW-10B (Deep)	10-Nov-08	152.87	34.44	118.43
MW-10B (Deep)	4-May-09	152.87	19.43	133.44
MW-10B (Deep)	16-Nov-09	152.87	23.95	128.92
MW-10B (Deep)	19-Apr-10	152.87	20.14	132.73
MW-10B (Deep)	4-Oct-10	152.87	24.70	128.17

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-10B (Deep)	12-Apr-11	152.87	16.88	135.99
MW-10B (Deep)	1-Nov-11	152.87	25.77	127.10
MW-10B (Deep)	30-Apr-12	152.87	17.50	135.37
MW-10B (Deep)	12-Nov-12	152.87	27.25	125.62
MW-10B (Deep)	8-Apr-13	152.87	17.57	135.30
MW-10B (Deep)	18-Nov-13	152.87	21.99	130.88
MW-10B (Deep)	28-Apr-14	152.87	17.71	135.16
MW-10B (Deep)	17-Nov-14	152.87	30.34	122.53
MW-18A (Shallow)	6-Nov-00	148.77	17.05	131.72
MW-18A (Shallow)	29-Jan-01	148.77	12.87	135.90
MW-18A (Shallow)	23-Apr-01	148.77	13.59	135.18
MW-18A (Shallow)	27-Aug-01	148.77	18.59	130.18
MW-18A (Shallow)	5-Nov-01	148.77	17.73	131.04
MW-18A (Shallow)	7-Feb-02	148.77	7.01	141.76
MW-18A (Shallow)	8-Apr-02	148.77	12.13	136.64
MW-18A (Shallow)	22-Jul-02	148.77	17.12	131.65
MW-18A (Shallow)	7-Oct-02	148.77	21.25	127.52
MW-18A (Shallow)	24-Feb-03	148.77	8.80	139.97
MW-18A (Shallow)	12-May-03	148.77	12.54	136.23
MW-18A (Shallow)	18-Aug-03	148.77	19.52	129.25
MW-18A (Shallow)	17-Nov-03	148.77	17.31	131.46
MW-18A (Shallow)	19-Apr-04	148.77	12.56	136.21
MW-18A (Shallow)	8-Nov-04	148.77	16.15	132.62
MW-18A (Shallow)	23-May-05	148.77	12.93	135.84
MW-18A (Shallow)	24-Oct-05	148.77	19.29	129.48
MW-18A (Shallow)	8-May-06	148.77	13.75	135.02
MW-18A (Shallow)	16-Oct-06	148.77	21.40	127.37
MW-18A (Shallow)	7-May-07	148.77	13.00	135.77
MW-18A (Shallow)	5-Nov-07	148.77	17.58	131.19
MW-18A (Shallow)	19-May-08	148.77	13.86	134.91
MW-18A (Shallow)	10-Nov-08	148.77	17.20	131.57
MW-18A (Shallow)	4-May-09	148.77	12.18	136.59
MW-18A (Shallow)	16-Nov-09	148.77	12.16	136.61
MW-18A (Shallow)	19-Apr-10	148.77	10.27	138.50
MW-18A (Shallow)	4-Oct-10	148.77	18.76	130.01
MW-18A (Shallow)	12-Apr-11	148.77	7.24	141.53
MW-18A (Shallow)	1-Nov-11	148.77	18.95	129.82
MW-18A (Shallow)	30-Apr-12	148.77	11.41	137.36
MW-18A (Shallow)	12-Nov-12	148.77	13.61	135.16
MW-18A (Shallow)	8-Apr-13	148.77	8.31	140.46
MW-18A (Shallow)	18-Nov-13	148.77	15.00	133.77
MW-18A (Shallow)	28-Apr-14	148.77	7.55	141.22
MW-18A (Shallow)	17-Nov-14	148.77	14.62	134.15
MW-18B (Deep)	6-Nov-00	148.57	20.67	127.90
MW-18B (Deep)	29-Jan-01	148.57	16.01	132.56
MW-18B (Deep)	23-Apr-01	148.57	15.91	132.66
MW-18B (Deep)	27-Aug-01	148.57	21.37	127.20
MW-18B (Deep)	5-Nov-01	148.57	22.13	126.44

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-18B (Deep)	7-Feb-02	148.57	13.15	135.42
MW-18B (Deep)	8-Apr-02	148.57	14.33	134.24
MW-18B (Deep)	22-Jul-02	148.57	24.26	124.31
MW-18B (Deep)	7-Oct-02	148.57	24.75	123.82
MW-18B (Deep)	24-Feb-03	148.57	14.29	134.28
MW-18B (Deep)	12-May-03	148.57	16.19	132.38
MW-18B (Deep)	18-Aug-03	148.57	24.93	123.64
MW-18B (Deep)	17-Nov-03	148.57	23.42	125.15
MW-18B (Deep)	19-Apr-04	148.57	16.86	131.71
MW-18B (Deep)	8-Nov-04	148.57	21.12	127.45
MW-18B (Deep)	23-May-05	148.57	19.10	129.47
MW-18B (Deep)	24-Oct-05	148.57	23.03	125.54
MW-18B (Deep)	8-May-06	148.57	17.99	130.58
MW-18B (Deep)	16-Oct-06	148.57	23.53	125.04
MW-18B (Deep)	7-May-07	148.57	15.95	132.62
MW-18B (Deep)	5-Nov-07	148.57	21.15	127.42
MW-18B (Deep)	19-May-08	148.57	25.31	123.26
MW-18B (Deep)	10-Nov-08	148.57	30.83	117.74
MW-18B (Deep)	4-May-09	148.57	15.83	132.74
MW-18B (Deep)	16-Nov-09	148.57	20.50	128.07
MW-18B (Deep)	19-Apr-10	148.57	14.47	134.10
MW-18B (Deep)	4-Oct-10	148.57	21.15	127.42
MW-18B (Deep)	12-Apr-11	148.57	13.30	135.27
MW-18B (Deep)	1-Nov-11	148.57	22.48	126.09
MW-18B (Deep)	30-Apr-12	148.57	13.75	134.82
MW-18B (Deep)	12-Nov-12	148.57	22.20	126.37
MW-18B (Deep)	8-Apr-13	148.57	14.40	134.17
MW-18B (Deep)	18-Nov-13	148.57	18.67	129.90
MW-18B (Deep)	28-Apr-14	148.57	14.27	134.30
MW-18B (Deep)	17-Nov-14	148.57	21.77	126.80
MW-20A (Shallow)	6-Nov-00	129.92	7.00	122.92
MW-20A (Shallow)	29-Jan-01	129.92	3.85	126.07
MW-20A (Shallow)	23-Apr-01	129.92	3.93	125.99
MW-20A (Shallow)	27-Aug-01	129.92	4.93	124.99
MW-20A (Shallow)	5-Nov-01	129.92	6.18	123.74
MW-20A (Shallow)	7-Feb-02	129.92	2.84	127.08
MW-20A (Shallow)	8-Apr-02	129.92	3.31	126.61
MW-20A (Shallow)	22-Jul-02	129.92	6.53	123.39
MW-20A (Shallow)	7-Oct-02	129.92	9.71	120.21
MW-20A (Shallow)	24-Feb-03	129.92	3.54	126.38
MW-20A (Shallow)	12-May-03	129.92	3.66	126.26
MW-20A (Shallow)	18-Aug-03	129.92	8.75	121.17
MW-20A (Shallow)	17-Nov-03	129.92	8.86	121.06
MW-20A (Shallow)	19-Apr-04	129.92	4.38	125.54
MW-20A (Shallow)	8-Nov-04	129.92	6.67	123.25
MW-20A (Shallow)	23-May-05	129.92	4.04	125.88
MW-20A (Shallow)	24-Oct-05	129.92	6.73	123.19
MW-20A (Shallow)	8-May-06	129.92	4.59	125.33
MW-20A (Shallow)	16-Oct-06	129.92	9.14	120.78

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-20A (Shallow)	7-May-07	129.92	4.49	125.43
MW-20A (Shallow)	5-Nov-07	129.92	5.19	124.73
MW-20A (Shallow)	19-May-08	129.92	4.99	124.93
MW-20A (Shallow)	10-Nov-08	129.92	5.67	124.25
MW-20A (Shallow)	4-May-09	129.92	3.47	126.45
MW-20A (Shallow)	16-Nov-09	129.92	3.88	126.04
MW-20A (Shallow)	19-Apr-10	129.92	3.25	126.67
MW-20A (Shallow)	4-Oct-10	129.92	6.44	123.48
MW-20A (Shallow)	12-Apr-11	129.92	2.67	127.25
MW-20A (Shallow)	1-Nov-11	129.92	6.40	123.52
MW-20A (Shallow)	30-Apr-12	129.92	3.09	126.83
MW-20A (Shallow)	12-Nov-12	129.92	5.85	124.07
MW-20A (Shallow)	8-Apr-13	129.92	3.27	126.65
MW-20A (Shallow)	18-Nov-13	129.92	6.11	123.81
MW-20A (Shallow)	28-Apr-14	129.92	3.11	126.81
MW-20A (Shallow)	17-Nov-14	129.92	5.35	124.57
MW-20B (Deep)	6-Nov-00	129.72	8.80	120.92
MW-20B (Deep)	29-Jan-01	129.72	5.26	124.46
MW-20B (Deep)	23-Apr-01	129.72	5.44	124.28
MW-20B (Deep)	27-Aug-01	129.72	8.93	120.79
MW-20B (Deep)	5-Nov-01	129.72	9.45	120.27
MW-20B (Deep)	7-Feb-02	129.72	1.62	128.10
MW-20B (Deep)	8-Apr-02	129.72	2.96	126.76
MW-20B (Deep)	22-Jul-02	129.72	9.49	120.23
MW-20B (Deep)	7-Oct-02	129.72	11.19	118.53
MW-20B (Deep)	24-Feb-03	129.72	2.78	126.94
MW-20B (Deep)	12-May-03	129.72	4.20	125.52
MW-20B (Deep)	18-Aug-03	129.72	12.08	117.64
MW-20B (Deep)	17-Nov-03	129.72	11.01	118.71
MW-20B (Deep)	19-Apr-04	129.72	5.57	124.15
MW-20B (Deep)	8-Nov-04	129.72	8.59	121.13
MW-20B (Deep)	23-May-05	129.72	4.55	125.17
MW-20B (Deep)	24-Oct-05	129.72	9.60	120.12
MW-20B (Deep)	8-May-06	129.72	6.10	123.62
MW-20B (Deep)	16-Oct-06	129.72	10.73	118.99
MW-20B (Deep)	7-May-07	129.72	4.75	124.97
MW-20B (Deep)	5-Nov-07	129.72	8.54	121.18
MW-20B (Deep)	19-May-08	129.72	9.24	120.48
MW-20B (Deep)	10-Nov-08	129.72	13.09	116.63
MW-20B (Deep)	4-May-09	129.72	4.44	125.28
MW-20B (Deep)	16-Nov-09	129.72	20.74	108.98
MW-20B (Deep)	19-Apr-10	129.72	3.07	126.65
MW-20B (Deep)	4-Oct-10	129.72	8.45	121.27
MW-20B (Deep)	12-Apr-11	129.72	1.71	128.01
MW-20B (Deep)	1-Nov-11	129.72	8.99	120.73
MW-20B (Deep)	30-Apr-12	129.72	2.55	127.17
MW-20B (Deep)	12-Nov-12	129.72	9.53	120.19
MW-20B (Deep)	8-Apr-13	129.72	3.22	126.50
MW-20B (Deep)	18-Nov-13	129.72	6.57	123.15

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-20B (Deep)	28-Apr-14	129.72	2.77	126.95
MW-20B (Deep)	17-Nov-14	129.72	9.44	120.28
P-04A (Shallow)	4-Dec-93	141.15	16.67	124.48
P-04A (Shallow)	5-Jan-94	141.15	15.13	126.02
P-04A (Shallow)	22-Feb-94	141.15	15.33	125.82
P-04A (Shallow)	25-Mar-94	141.15	15.42	125.73
P-04A (Shallow)	26-Apr-94	141.15	16.22	124.93
P-04A (Shallow)	26-May-94	141.15	17.23	123.92
P-04A (Shallow)	1-Jul-94	141.15	18.07	123.08
P-04A (Shallow)	2-Aug-94	141.15	19.26	121.89
P-04A (Shallow)	2-Sep-94	141.15	19.67	121.48
P-04A (Shallow)	11-Nov-94	141.15	13.18	127.97
P-04A (Shallow)	21-Dec-94	141.15	12.79	128.36
P-04A (Shallow)	20-Jan-95	141.15	12.11	129.04
P-04A (Shallow)	23-Feb-95	141.15	13.64	127.51
P-04A (Shallow)	28-Mar-95	141.15	13.93	127.22
P-04A (Shallow)	14-Apr-95	141.15	13.91	127.24
P-04A (Shallow)	18-May-95	141.15	15.18	125.97
P-04A (Shallow)	20-Jun-95	141.15	15.23	125.92
P-04A (Shallow)	26-Jul-95	141.15	16.92	124.23
P-04A (Shallow)	22-Aug-95	141.15	17.87	123.28
P-04A (Shallow)	11-Sep-95	141.15	18.35	122.80
P-04A (Shallow)	24-Oct-95	141.15	15.37	125.78
P-04A (Shallow)	22-Nov-95	141.15	14.39	126.76
P-04A (Shallow)	20-Dec-95	141.15	13.01	128.14
P-04A (Shallow)	11-Jan-96	141.15	13.44	127.71
P-04A (Shallow)	16-Feb-96	141.15	13.33	127.82
P-04A (Shallow)	30-Mar-96	141.15	15.18	125.97
P-04A (Shallow)	9-Apr-96	141.15	14.88	126.27
P-04A (Shallow)	28-May-96	141.15	14.50	126.65
P-04A (Shallow)	28-Jun-96	141.15	16.62	124.53
P-04A (Shallow)	30-Jul-96	141.15	17.65	123.50
P-04A (Shallow)	29-Aug-96	141.15	18.34	122.81
P-04A (Shallow)	30-Sep-96	141.15	17.18	123.97
P-04A (Shallow)	31-Oct-96	141.15	17.33	123.82
P-04A (Shallow)	12-Dec-96	141.15	13.57	127.58
P-04A (Shallow)	22-Jan-97	141.15	13.61	127.54
P-04A (Shallow)	31-Mar-97	141.15	14.32	126.83
P-04A (Shallow)	19-May-97	141.15	15.54	125.61
P-04A (Shallow)	9-Sep-97	141.15	17.21	123.94
P-04A (Shallow)	18-Dec-97	141.15	13.12	128.03
P-04A (Shallow)	17-Mar-98	141.15	13.35	127.80
P-04A (Shallow)	8-Jun-98	141.15	15.03	126.12
P-04A (Shallow)	18-Aug-98	141.15	NR	---
P-04A (Shallow)	5-Nov-98	141.15	15.82	125.33
P-04A (Shallow)	22-Mar-99	141.15	13.73	127.42
P-04A (Shallow)	7-Sep-99	141.15	19.37	121.78
P-04A (Shallow)	9-Dec-99	141.15	11.49	129.66
P-04A (Shallow)	7-Feb-00	141.15	13.51	127.64

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-04A (Shallow)	29-May-00	141.15	14.78	126.37
P-04A (Shallow)	21-Aug-00	141.15	17.53	123.62
P-04A (Shallow)	6-Nov-00	141.15	15.83	125.32
P-04A (Shallow)	29-Jan-01	141.15	14.55	126.60
P-04A (Shallow)	23-Apr-01	141.15	15.44	125.71
P-04A (Shallow)	27-Aug-01	141.15	17.42	123.73
P-04A (Shallow)	5-Nov-01	141.15	15.30	125.85
P-04A (Shallow)	7-Feb-02	141.15	12.82	128.33
P-04A (Shallow)	8-Apr-02	141.15	15.07	126.08
P-04A (Shallow)	22-Jul-02	141.15	17.27	123.88
P-04A (Shallow)	7-Oct-02	141.15	18.00	123.15
P-04A (Shallow)	24-Feb-03	141.15	12.72	128.43
P-04A (Shallow)	12-May-03	141.15	14.25	126.90
P-04A (Shallow)	18-Aug-03	141.15	17.87	123.28
P-04A (Shallow)	17-Nov-03	141.15	16.00	125.15
P-04A (Shallow)	19-Apr-04	141.15	13.86	127.29
P-04A (Shallow)	8-Nov-04	141.15	13.91	127.24
P-04A (Shallow)	23-May-05	141.15	14.24	126.91
P-04A (Shallow)	24-Oct-05	141.15	21.10	120.05
P-04A (Shallow)	8-May-06	141.15	15.85	125.30
P-04A (Shallow)	16-Oct-06	141.15	19.06	122.09
P-04A (Shallow)	7-May-07	141.15	14.85	126.30
P-04A (Shallow)	5-Nov-07	141.15	16.01	125.14
P-04A (Shallow)	19-May-08	141.15	15.90	125.25
P-04A (Shallow)	10-Nov-08	141.15	14.47	126.68
P-04A (Shallow)	4-May-09	141.15	12.79	128.36
P-04A (Shallow)	16-Nov-09	141.15	13.27	127.88
P-04A (Shallow)	19-Apr-10	141.15	13.52	127.63
P-04A (Shallow)	4-Oct-10	141.15	16.89	124.26
P-04A (Shallow)	12-Apr-11	141.15	14.32	126.83
P-04A (Shallow)	1-Nov-11	141.15	16.91	124.24
P-04A (Shallow)	30-Apr-12	141.15	14.56	126.59
P-04A (Shallow)	12-Nov-12	141.15	14.05	127.10
P-04A (Shallow)	8-Apr-13	141.15	12.65	128.50
P-04A (Shallow)	Decommissioned on June 25, 2013			
P-04B (Deep)	4-Dec-93	141.65	21.63	120.02
P-04B (Deep)	5-Jan-94	141.65	16.98	124.67
P-04B (Deep)	22-Feb-94	141.65	16.37	125.28
P-04B (Deep)	25-Mar-94	141.65	15.45	126.20
P-04B (Deep)	26-Apr-94	141.65	16.74	124.91
P-04B (Deep)	26-May-94	141.65	19.02	122.63
P-04B (Deep)	1-Jul-94	141.65	21.32	120.33
P-04B (Deep)	2-Aug-94	141.65	23.73	117.92
P-04B (Deep)	2-Sep-94	141.65	23.51	118.14
P-04B (Deep)	13-Oct-94	141.65	13.59	128.06
P-04B (Deep)	11-Nov-94	141.65	19.99	121.66
P-04B (Deep)	21-Dec-94	141.65	15.46	126.19
P-04B (Deep)	20-Jan-95	141.65	13.50	128.15
P-04B (Deep)	23-Feb-95	141.65	13.80	127.85

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-04B (Deep)	28-Mar-95	141.65	14.64	127.01
P-04B (Deep)	14-Apr-95	141.65	15.84	125.81
P-04B (Deep)	18-May-95	141.65	17.63	124.02
P-04B (Deep)	20-Jun-95	141.65	19.01	122.64
P-04B (Deep)	26-Jul-95	141.65	21.58	120.07
P-04B (Deep)	22-Aug-95	141.65	21.95	119.70
P-04B (Deep)	11-Sep-95	141.65	22.00	119.65
P-04B (Deep)	24-Oct-95	141.65	21.39	120.26
P-04B (Deep)	22-Nov-95	141.65	18.80	122.85
P-04B (Deep)	20-Dec-95	141.65	13.61	128.04
P-04B (Deep)	11-Jan-96	141.65	14.52	127.13
P-04B (Deep)	16-Feb-96	141.65	12.95	128.70
P-04B (Deep)	30-Mar-96	141.65	16.00	125.65
P-04B (Deep)	9-Apr-96	141.65	16.90	124.75
P-04B (Deep)	28-May-96	141.65	16.09	125.56
P-04B (Deep)	28-Jun-96	141.65	18.62	123.03
P-04B (Deep)	30-Jul-96	141.65	21.09	120.56
P-04B (Deep)	29-Aug-96	141.65	21.95	119.70
P-04B (Deep)	30-Sep-96	141.65	21.39	120.26
P-04B (Deep)	31-Oct-96	141.65	21.47	120.18
P-04B (Deep)	12-Dec-96	141.65	14.63	127.02
P-04B (Deep)	22-Jan-97	141.65	13.75	127.90
P-04B (Deep)	31-Mar-97	141.65	14.60	127.05
P-04B (Deep)	19-May-97	141.65	17.48	124.17
P-04B (Deep)	9-Sep-97	141.65	20.97	120.68
P-04B (Deep)	18-Dec-97	141.65	15.42	126.23
P-04B (Deep)	17-Mar-98	141.65	14.17	127.48
P-04B (Deep)	8-Jun-98	141.65	16.95	124.70
P-04B (Deep)	18-Aug-98	141.65	21.02	120.63
P-04B (Deep)	5-Nov-98	141.65	20.61	121.04
P-04B (Deep)	22-Mar-99	141.65	13.27	128.38
P-04B (Deep)	7-Sep-99	141.65	22.32	119.33
P-04B (Deep)	9-Dec-99	141.65	16.01	125.64
P-04B (Deep)	7-Feb-00	141.65	13.86	127.79
P-04B (Deep)	29-May-00	141.65	17.16	124.49
P-04B (Deep)	21-Aug-00	141.65	22.25	119.40
P-04B (Deep)	6-Nov-00	141.65	21.21	120.44
P-04B (Deep)	29-Jan-01	141.65	17.77	123.88
P-04B (Deep)	23-Apr-01	141.65	17.80	123.85
P-04B (Deep)	27-Aug-01	141.65	21.37	120.28
P-04B (Deep)	5-Nov-01	141.65	21.85	119.80
P-04B (Deep)	7-Feb-02	141.65	13.97	127.68
P-04B (Deep)	8-Apr-02	141.65	15.38	126.27
P-04B (Deep)	22-Jul-02	141.65	21.75	119.90
P-04B (Deep)	7-Oct-02	141.65	23.45	118.20
P-04B (Deep)	24-Feb-03	141.65	15.19	126.46
P-04B (Deep)	12-May-03	141.65	16.63	125.02
P-04B (Deep)	18-Aug-03	141.65	24.37	117.28
P-04B (Deep)	17-Nov-03	141.65	23.34	118.31

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-04B (Deep)	19-Apr-04	141.65	18.02	123.63
P-04B (Deep)	8-Nov-04	141.65	21.02	120.63
P-04B (Deep)	23-May-05	141.65	17.29	124.36
P-04B (Deep)	24-Oct-05	141.65	22.00	119.65
P-04B (Deep)	8-May-06	141.65	18.69	122.96
P-04B (Deep)	16-Oct-06	141.65	23.09	118.56
P-04B (Deep)	7-May-07	141.65	17.29	124.36
P-04B (Deep)	5-Nov-07	141.65	20.48	121.17
P-04B (Deep)	19-May-08	141.65	21.60	120.05
P-04B (Deep)	10-Nov-08	141.65	25.34	116.31
P-04B (Deep)	4-May-09	141.65	16.94	124.71
P-04B (Deep)	16-Nov-09	141.65	20.26	121.39
P-04B (Deep)	19-Apr-10	141.65	15.51	126.14
P-04B (Deep)	4-Oct-10	141.65	20.85	120.80
P-04B (Deep)	12-Apr-11	141.65	14.20	127.45
P-04B (Deep)	1-Nov-11	141.65	21.41	120.24
P-04B (Deep)	30-Apr-12	141.65	15.02	126.63
P-04B (Deep)	12-Nov-12	141.65	22.05	119.60
P-04B (Deep)	8-Apr-13	141.65	15.85	125.80
P-04B (Deep)	Decommissioned on June 25, 2013			
P-05A	8-May-06	140.70	7.83	132.87
P-05A	16-Oct-06	140.70	16.20	124.50
P-05A	7-May-07	140.70	6.61	134.09
P-05A	5-Nov-07	140.70	12.01	128.69
P-05A	19-May-08	140.70	7.57	133.13
P-05A	10-Nov-08	140.70	8.04	132.66
P-05A	4-May-09	140.70	5.29	135.41
P-05A	16-Nov-09	140.70	4.41	136.29
P-05A	19-Apr-10	140.70	4.27	136.43
P-05A	4-Oct-10	140.70	14.29	126.41
P-05A	12-Apr-11	140.70	3.61	137.09
P-05A	1-Nov-11	140.70	13.91	126.79
P-05A	30-Apr-12	140.70	4.20	136.50
P-05A	12-Nov-12	140.70	15.54	125.16
P-05A	8-Apr-13	140.74	3.67	137.07
P-05A	18-Nov-13	140.74	18.11	122.63
P-05A	28-Apr-14	140.74	3.49	137.25
P-05A	17-Nov-14	140.74	15.28	125.46
P-06A	8-May-06	131.60	5.83	125.77
P-06A	16-Oct-06	131.60	11.12	120.48
P-06A	7-May-07	131.60	5.59	126.01
P-06A	5-Nov-07	131.60	7.86	123.74
P-06A	19-May-08	131.60	6.13	125.47
P-06A	10-Nov-08	131.60	9.56	122.04
P-06A	4-May-09	131.60	4.51	127.09
P-06A	16-Nov-09	131.60	8.91	122.69
P-06A	19-Apr-10	131.60	4.08	127.52

Table 5-1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-06A	4-Oct-10	131.60	8.62	122.98
P-06A	12-Apr-11	131.60	3.61	127.99
P-06A	1-Nov-11	131.60	9.52	122.08
P-06A	30-Apr-12	131.60	4.15	127.45
P-06A	12-Nov-12	131.60	8.03	123.57
P-06A	8-Apr-13	131.58	4.09	127.49
P-06A	18-Nov-13	131.58	5.95	125.63
P-06A	28-Apr-14	131.58	3.85	127.73
P-06A	17-Nov-14	131.58	5.87	125.71
GT10-1	4-Oct-10	145.56	15.46	130.10
GT10-1	12-Apr-11	145.56	1.55	144.01
GT10-1	1-Nov-11	145.56	15.85	129.71
GT10-1	30-Apr-12	145.56	2.02	143.54
GT10-1	12-Nov-12	145.56	18.45	127.11
GT10-1	8-Apr-13	145.56	1.76	143.80
GT10-1	18-Nov-13	145.56	17.32	128.24
GT10-1	28-Apr-14	145.56	1.40	144.16
GT10-1	17-Nov-14	145.56	14.51	131.05

NOTE:
NR = no reading; --- = null value.
[a] All site monitoring wells and piezometers were resurveyed in July 2013. All reference elevations remained the same except for P-05A, P-06A, and P-07A.

Table 5-2
Bedrock Depths and Elevations
Riverbend Landfill

Boring/Well Location	Ground Elevation (fee amsl)	Total Depth (feet bgs)	Depth to Top of Bedrock (feet bgs)	Top of Bedrock Elevation (feet amsl)	Bedrock Type
1993/1994 Additional Hydrogeological Investigation					
MW-4B	139.2	71.8	61.8	77.4	Basalt
MW-5B	132.8	44.7	44.5	88.3	(Unknown)
MW-6B	125.8	56.0	45.5	80.3	Basalt
MW-7B	146.5	82.6	72.5	74.0	Basalt
MW-8B	124.3	49.5	39.5	84.8	Sandstone (Basalt at 46.5')
MW-9B	125.3	44.5	37.0	88.3	Siltstone
MW-11B	142.1	73.8	65.0	77.1	Siltstone
P-04B	139.0	75.8	65.0	74.0	Basalt
EW-1	148.4	89.2	84.0	64.4	Basalt
TB-21	126.0	39.0	38.0	88.0	Siltstone (Basalt at 39')
TB-22	125.1	44.3	37.0	88.1	Basalt
B-1[a]	NA	NA	NA	80.4	NA
B-2[a]	NA	NA	NA	78.7	NA
2000 Additional Monitoring Well Installation					
MW-17B	151.1	99.5	63.0	88.1	Siltstone (Basalt at 99')
MW-19B	149.1	111.0	54.0	95.1	Siltstone
2010 Hydrogeologic Site Characterization					
GT10-02	135.0	55.8	51.0	84.0	Siltstone
GT10-03	130.5	60.3	55.5	75.0	Basalt
GT10-04	137.9	68.8	68.5	69.4	Basalt
GT10-05	116.3	50.2	49.0	67.3	Basalt
GT10-06	123.6	50.3	39.5	84.1	Basalt
GT10-07	128.1	50.2	44.0	84.1	Siltstone
GT10-08	125.4	34.3	28.0	97.4	Basalt
GT10-09	148.7	55.3	49.0	99.7	Basalt
GT10-10	144.5	51.3	44.0	100.5	Siltstone
GT10-12	150.6	55.7	50.5	100.1	Siltstone
GT10-14	146.4	67.8	67.0	79.4	Basalt
MW-22B	123.5	38.3	37.0	86.5	Basalt
MW-23B	129.0	42.3	42.0	87.0	Siltstone
MW-24A	147.3	55.3	53.3	94.0	Siltstone
2011 and 2012 MSE Berm Investigations					
GT11-05	147.1	66.5	62.0	85.1	Siltstone
GT11-07	147.8	65.9	58.0	89.8	Siltstone
2012 MSE Berm Investigation					
GT12-05A	139.1	70.3	68.0	71.1	Siltstone
GT12-06A	140.0	67.3	66.0	74.0	Siltstone
GT12-05A	139.1	70.3	68.0	71.1	Siltstone
GT12-06A	140.0	67.3	66.0	74.0	Siltstone

Table 5-2
Bedrock Depths and Elevations
Riverbend Landfill

Boring/Well Location	Ground Elevation (fee amsl)	Total Depth (feet bgs)	Depth to Top of Bedrock (feet bgs)	Top of Bedrock Elevation (feet amsl)	Bedrock Type
2013 Landfill Expansion Permit Geotechnical Investigation					
GT13-01	141.7	99.0	95.0	46.7	Siltstone
GT13-02	148.3	73.5	68.5	79.8	Siltstone
GT13-03	145.5	72.5	68.0	77.5	Siltstone
GT13-04	144.1	68.0	63.0	81.1	Siltstone
GT13-05	144.8	66.5	63.0	81.8	Siltstone
GT13-06	144.5	66.5	63.5	81.0	Siltstone
GT13-08	144.3	68.5	61.5	82.8	Siltstone
GT13-09	148.4	71.5	63.0	85.4	Siltstone
GT13-10	146.6	68.5	61.5	85.1	Siltstone
GT13-11	146.7	68.5	62.5	84.2	Siltstone
GT13-12	148.2	67.5	58.5	89.7	Siltstone
GT13-14	148.1	70.0	65.0	83.1	Siltstone
GT13-15	125.4	51.5	43.5	81.9	Siltstone
GT13-16	126.9	51.5	43.0	83.9	Siltstone
GT13-17	126.6	51.5	43.5	83.1	Siltstone
GT13-18	148.9	71.0	62.0	86.9	Basalt
GT13-20	143.0	62.5	58.0	85.0	Basalt
2014 Landfill Expansion Permit Geotechnical Investigation					
GT14-03	136.9	50.5	49.5	87.4	Basalt
GT14-04	139.7	51.5	46.0	93.7	Siltstone
GT14-05	133.8	50.5	47.0	86.8	Basalt
GT14-06	133.5	57.5	56.0	77.5	Basalt
GT14-07	133.2	65.5	65.0	68.2	Siltstone

NOTES:

amsl = above mean sea level (local datum)

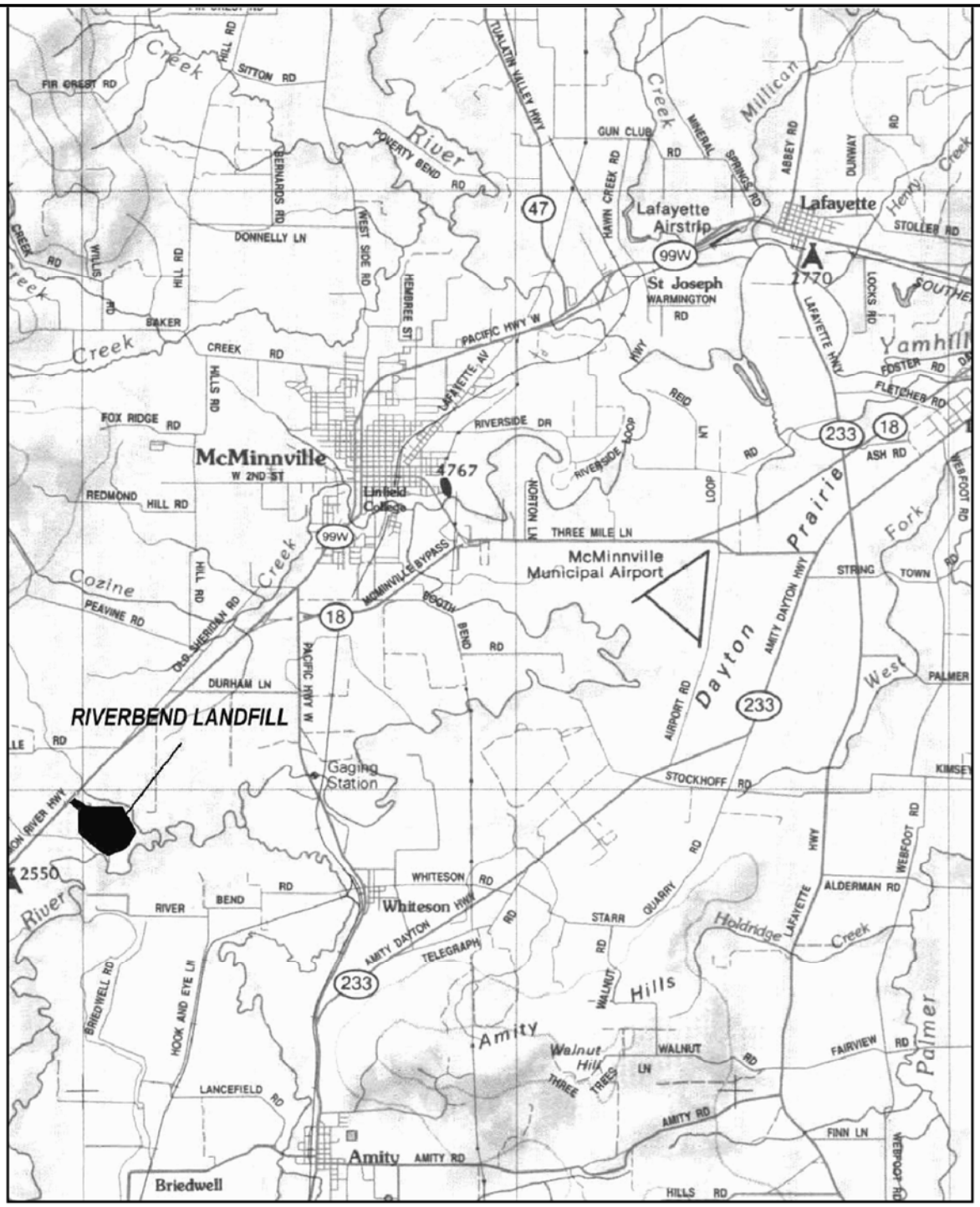
bgs = below ground surface

NA = not available

Indicates well or piezometer located within or in close proximity to the proposed Module 11 expansion area.

[a] Bedrock elevations for borings B-1 and B-2 were obtained from Figure 3-6 (Elevation Contours of the Bedrock Surface) of the July 29, 1994, Additional Hydrogeological Investigation (AHI) report. The borehole logs for borings B-1 and B-2 were not provided in the AHI report to confirm the missing information.

FIGURES



Basemap from Oregon Atlas and Gazetteer (DeLorme)

0 1 2
MILES

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WASTE MANAGEMENT

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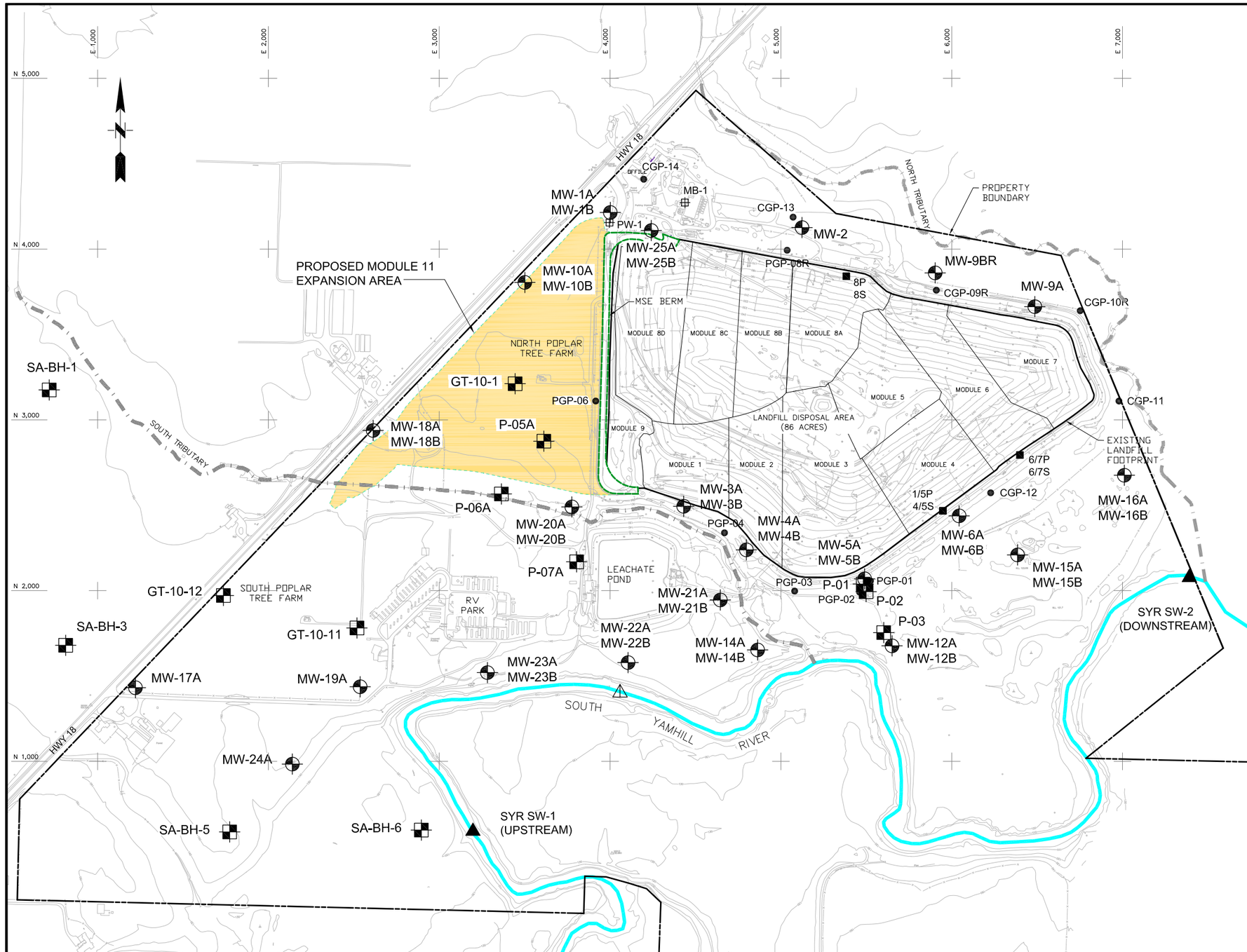
PROJECT NO. 04215015.00	DES BY D.L.	SITE LOCATION MAP	DATE JUNE 2015
SCALE AS SHOWN	CHK BY L.C.	RIVERBEND LANDFILL McMINNVILLE, OREGON	FIGURE 1-1
CAD FILE FIGURE 1-1	APP BY L.C.		



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Tributary Stream
- Proposed Expansion Area
- Mechanically Stabilized Earthen (MSE) Berm
- MW-19A — Groundwater Monitoring Well
- P-05A — Piezometer
- PW-1 — Landfill Water Well
- CGP-11 — Landfill Gas Monitoring Probe
- 6/7P 6/7S — LCRS and LSCS Monitoring Location
- SYR SW-1 — South Yamhill River Sampling Location (Approximate)
- South Yamhill River Gauging Station

BASE MAP SOURCE:

1) Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.

NOTES:

1) Monitoring wells and piezometers with "A" designation are screened in the shallow (silt-clay) water-bearing zone, and monitoring wells and piezometers with "B" designation are screened in the deeper (sand-gravel) water-bearing zone (except wells MW-1A and MW-1B that are reversed).

2) Piezometers with "GT" and "SA-BH" designations are screened in the shallow (silt-clay) water-bearing zone.

3) Leachate Collection and Removal System (LCRS) monitoring locations are identified by a "P" designation and Leak Detection System (LDS) monitoring locations are identified with a "S" designation.

4) Landfill gas monitoring probes with a "CGP" designation are compliance probes. Landfill gas monitoring probes with a "PGP" designation are performance evaluation probes.

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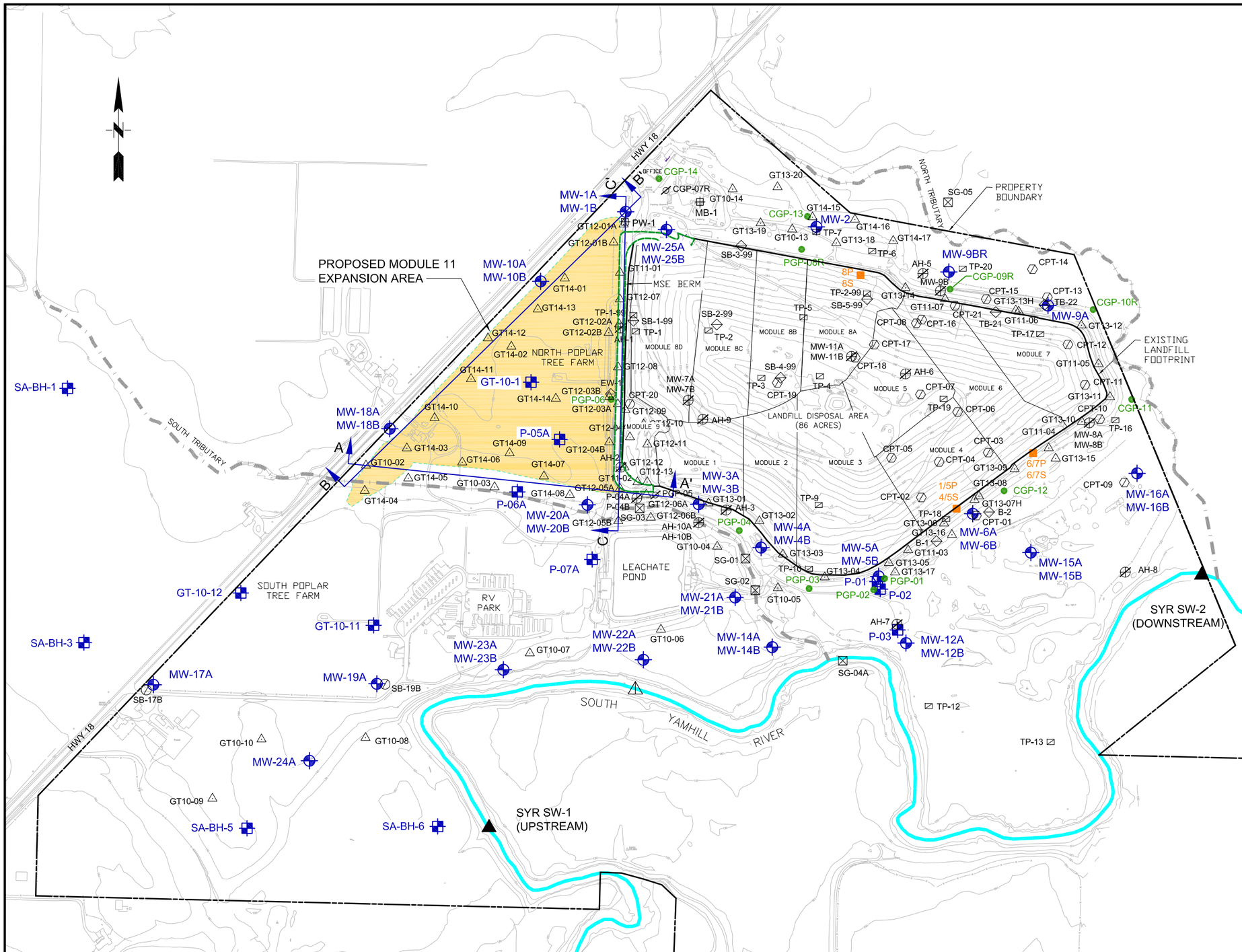
PROJECT NO. 04215015.00	DES BY D.L.
SCALE AS SHOWN	CHK BY L.C.
CAD FILE FIGURE 1-2	APP BY L.C.

SITE PLAN AND EXISTING MONITORING LOCATIONS

RIVERBEND LANDFILL
McMINNVILLE, OREGON

DATE JUNE 2015

FIGURE 1-2



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Unnamed Drainage
- Proposed Expansion Area
- Mechanically Stabilized Earthen (MSE) Berm
- A — A' Hydrogeologic Cross Section Line (Cross Sections are shown on Figures 5-1 and 5-2)

EXISTING MONITORING LOCATIONS

- MW-19A — Groundwater Monitoring Well
- P-05A — Piezometer
- PW-1 — Landfill Water Well
- CGP-14 — Landfill Gas Monitoring Probe
- 6/7P 6/7S — LCRS and LSCS Monitoring Location
- SYR SW-1 — South Yamhill River Sampling Location (Approximate)
- South Yamhill River Gauging Station

FORMER MONITORING OR EXPLORATORY LOCATIONS

- AH-5 — Decommissioned Monitoring Well or Piezometer
- CGP-07A — Decommissioned Landfill Gas Monitoring Probe
- TP-10,TP-2-99 — 1981 or 1999 Test Pit
- B-1, EW-1, TB-21, SB-5-99 — 1993 or 1999 Test Boring
- CPT-10 — 1993 Cone Penetrometer Test Boring
- SB-19B — 2000 Test Boring
- GT14-17 — 2010 - 2014 Geotechnical Borehole
- SG-05 — Former Stream Level Monitoring Location

BASE MAP SOURCE:

1) Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.

NOTES:

1) Monitoring wells and piezometers with "A" designation are screened in the shallow (silt-clay) water-bearing zone, and monitoring wells and piezometers with "B" designation are screened in the deeper (sand-gravel) water-bearing zone (except wells MW-1A and MW-1B that are reversed).

2) Piezometers with "GT" and "SA-BH" designations are screened in the shallow (silt-clay) water-bearing zone.

3) Leachate Collection and Removal System (LCRS) monitoring locations are identified by a "P" designation and Leak Detection System (LDS) monitoring locations are identified with a "S" designation.

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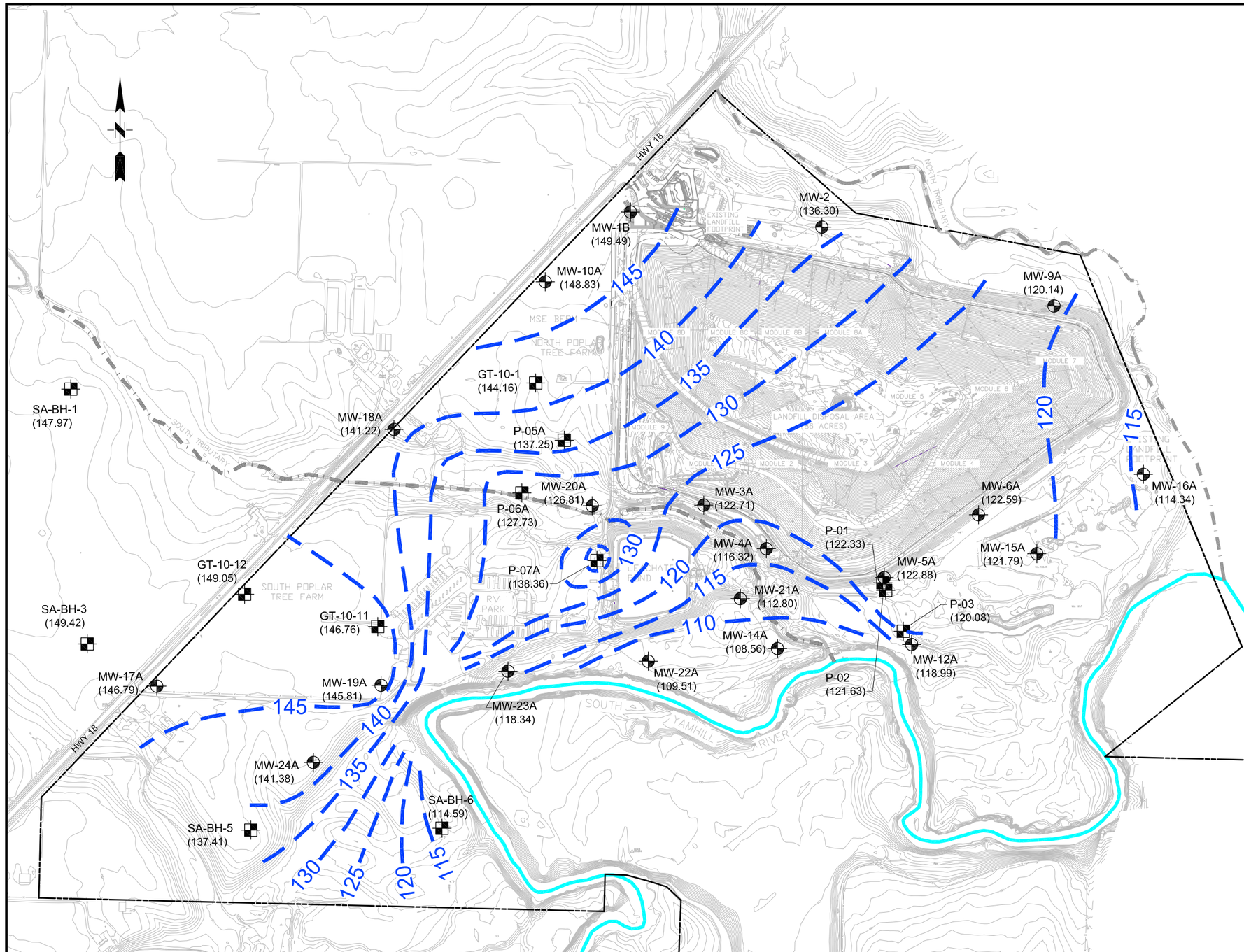
PROJECT NO. 04215015.00	DES BY D.L.
SCALE AS SHOWN	CHK BY L.C.
CAD FILE FIGURE 3-1	APP BY L.C.

SITE PLAN AND HISTORICAL MONITORING/EXPLORATORY LOCATIONS

RIVERBEND LANDFILL
McMINNVILLE, OREGON

DATE JUNE 2015

FIGURE 3-1



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Tributary Stream
- 110 — Potentiometric Surface Contours for shallow water - bearing zone (Feet MSL) Contour Interval = 5 Feet (Quieried where uncertain)
- MW-19A — Groundwater Monitoring Well
- P-05A — Piezometer
- (120.14) — Groundwater Elevation in Feet Above Mean Sea Level on April 28, 2014

BASE MAP SOURCE:

1) Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.

NOTES:

1) Monitoring wells and piezometers with "A" designation are screened in the shallow (silt-clay) water-bearing zone, and monitoring wells and piezometers with "B" designation are screened in the deeper (sand-gravel) water-bearing zone (except wells MW-1A and MW-1B that are reversed).

2) Piezometers with "GT" and "SA-BH" designations are screened in the shallow (silt-clay) water-bearing zone.

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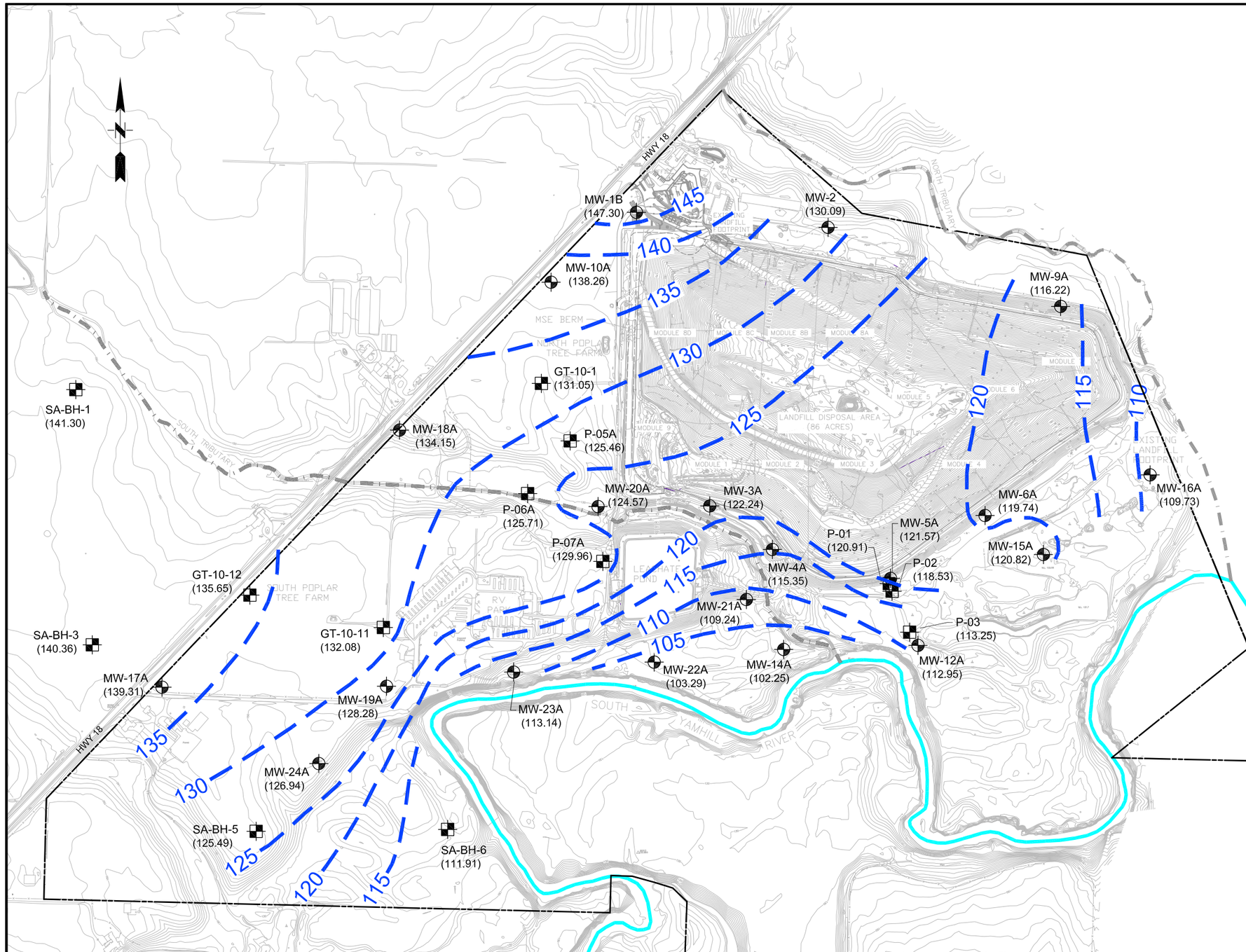
PROJECT NO. 04215015.00	DES BY T.B.
SCALE AS SHOWN	CHK BY D.L.
CAD FILE FIGURE 3-2	APP BY L.C.

SHALLOW WATER - BEARING ZONE POTENTIOMETRIC SURFACE CONTOURS (APRIL 28, 2014)

RIVERBEND LANDFILL
McMINNVILLE, OREGON

DATE JUNE 2015

FIGURE 3-2



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Tributary Stream
- 120 — Potentiometric Surface Contours for shallow water - bearing zone (Feet MSL) Contour Interval = 5 Feet
- MW-19A — Groundwater Monitoring Well
- P-05A — Piezometer
- (116.22) — Groundwater Elevation in Feet Above Mean Sea Level on November 17, 2014

BASE MAP SOURCE:

1) Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.

NOTES:

1) Monitoring wells and piezometers with "A" designation are screened in the shallow (silt-clay) water-bearing zone, and monitoring wells and piezometers with "B" designation are screened in the deeper (sand-gravel) water-bearing zone (except wells MW-1A and MW-1B that are reversed).

2) Piezometers with "GT" and "SA-BH" designations are screened in the shallow (silt-clay) water-bearing zone.

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WASTE MANAGEMENT

0 600 1200
SCALE IN FEET

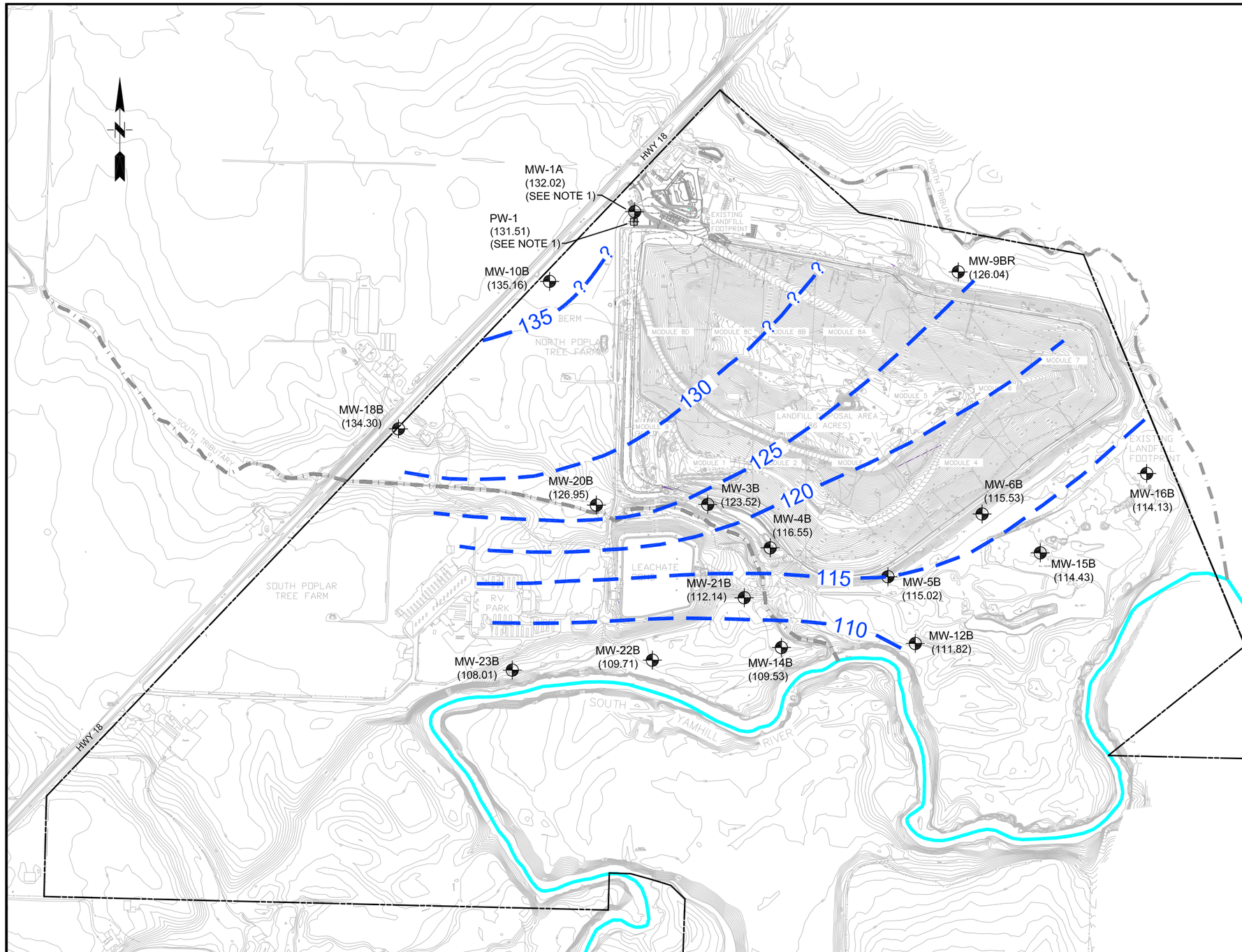
PROJECT NO. 04215015.00	DES BY T.B.
SCALE AS SHOWN	CHK BY D.L.
CAD FILE FIGURE 3-3	APP BY L.C.

SHALLOW WATER - BEARING ZONE
POTENTIOMETRIC SURFACE CONTOURS
(NOVEMBER 17, 2014)

RIVERBEND LANDFILL
McMINNVILLE, OREGON

DATE JUNE 2015

FIGURE 3-3



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Tributary Stream
- 120 — Potentiometric Surface Contours for deep water - bearing zone (Feet MSL) Contour Interval = 5 Feet
- MW-18B — Groundwater Monitoring Well
- PW-1 — Landfill Water Well
- (126.04) — Groundwater Elevation in Feet Above Mean Sea Level on April 28, 2014

BASE MAP SOURCE:

1) Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.

NOTES:

1) Water level in well is depressed due to periodic pumping of the site production well (PW-1). This well was not used in the interpretation of potentiometric contours.

2) Monitoring wells and piezometers with "A" designation are screened in the shallow (silt-clay) water-bearing zone, and monitoring wells and piezometers with "B" designation are screened in the deeper (sand-gravel) water-bearing zone (except wells MW-1A and MW-1B that are reversed).

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WASTE MANAGEMENT

0 600 1200
SCALE IN FEET

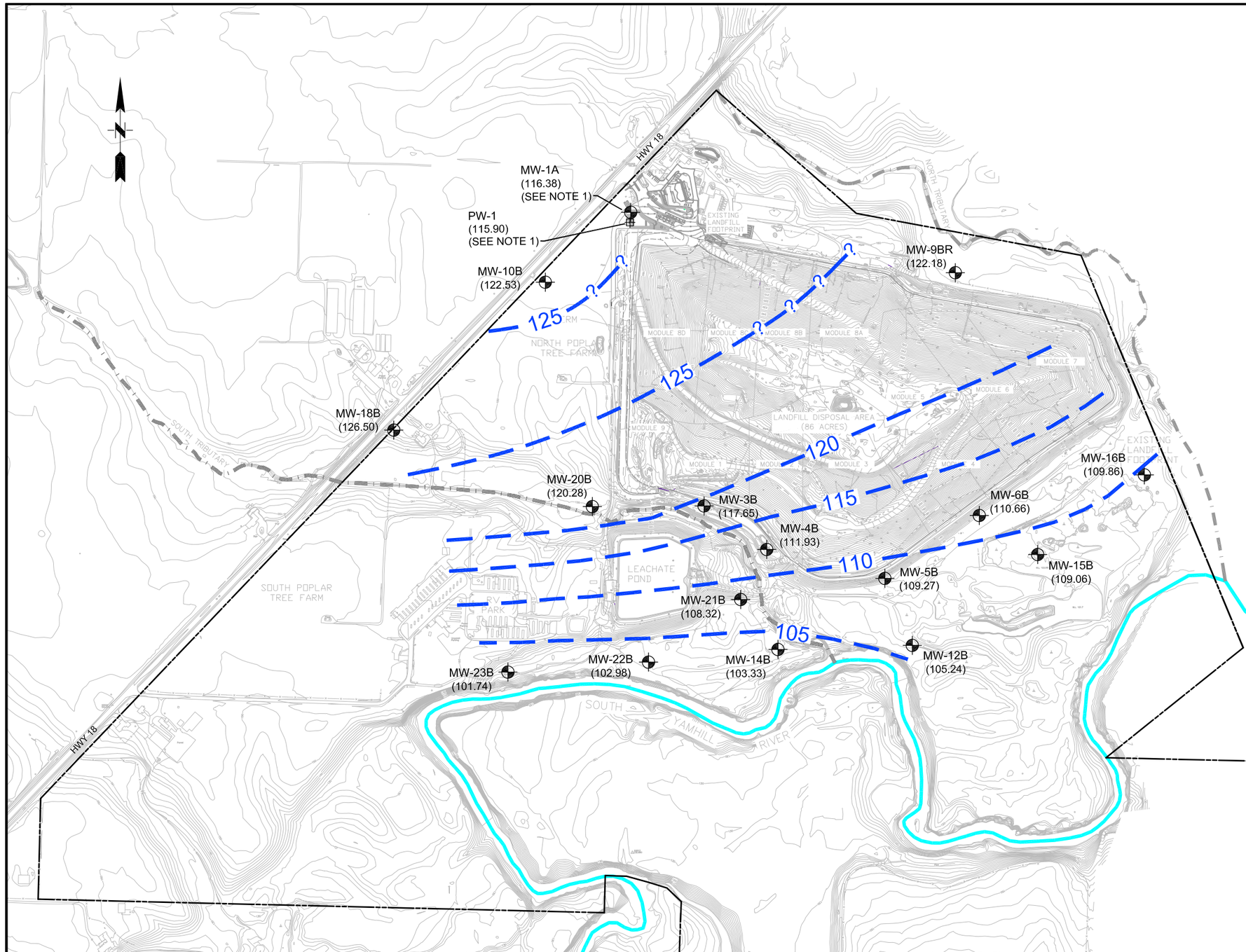
PROJECT NO. 04215015.00	DES BY T.B.
SCALE AS SHOWN	CHK BY D.L.
CAD FILE FIGURE 3-4	APP BY L.C.

DEEP WATER - BEARING ZONE
POTENTIOMETRIC SURFACE CONTOURS
(APRIL 28, 2014)

RIVERBEND LANDFILL
McMINNVILLE, OREGON

DATE JUNE 2015

FIGURE 3-4



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Tributary Stream
- 120 — Potentiometric Surface Contours for deep water - bearing zone (Feet MSL) Contour Interval = 5 Feet
- MW-18B — Groundwater Monitoring Well
- PW-1 — Landfill Water Well
- (122.18) — Groundwater Elevation in Feet Above Mean Sea Level on November 17, 2014

BASE MAP SOURCE:

1) Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.

NOTES:

1) Water level in well is depressed due to periodic pumping of the site production well (PW-1). This well was not used in the interpretation of potentiometric contours.

2) Monitoring wells and piezometers with "A" designation are screened in the shallow (silt-clay) water-bearing zone, and monitoring wells and piezometers with "B" designation are screened in the deeper (sand-gravel) water-bearing zone (except wells MW-1A and MW-1B that are reversed).

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WASTE MANAGEMENT

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SCALE IN FEET

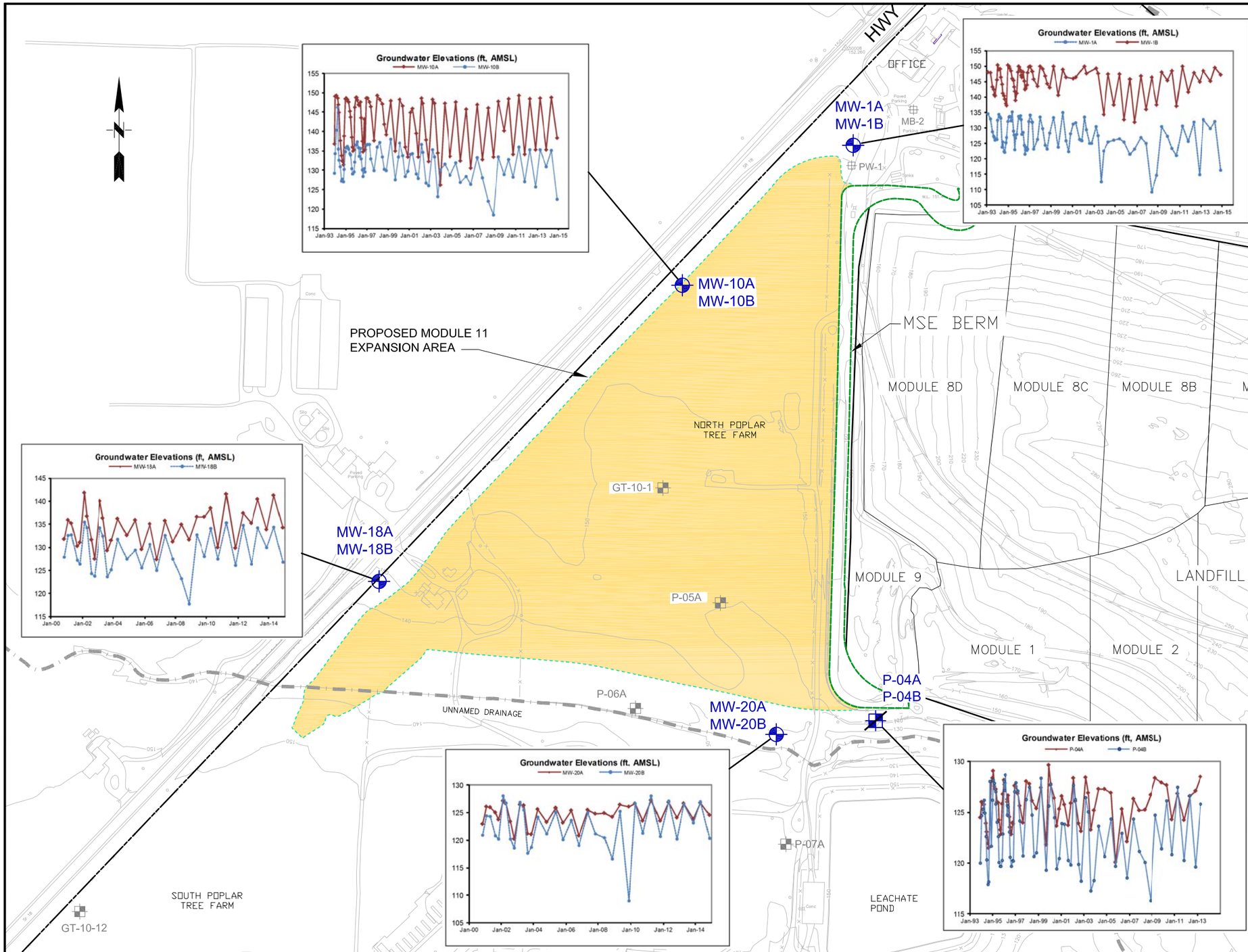
PROJECT NO. 04215015.00	DES BY T.B.
SCALE AS SHOWN	CHK BY D.L.
CAD FILE FIGURE 3-5	APP BY L.C.

DEEP WATER - BEARING ZONE
POTENTIOMETRIC SURFACE CONTOURS
(NOVEMBER 17, 2014)

RIVERBEND LANDFILL
McMINNVILLE, OREGON

DATE JUNE 2015

FIGURE 3-5



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Unnamed Drainage
- Proposed Expansion Area
- Mechanically Stabilized Earthen (MSE) Berm

EXISTING MONITORING LOCATIONS

- MW-20A — Groundwater Monitoring Well
- P-05A — Piezometer
- MB-2 — On-Site Water Well
- P-04A — Decommissioned (Former) Piezometer

BASE MAP SOURCE:

1) Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.

NOTES:

1) Monitoring wells and piezometers with "A" designation are screened in the shallow (silt-clay) water-bearing zone, and monitoring wells and piezometers with "B" designation are screened in the deeper (sand-gravel) water-bearing zone (except wells MW-1A and MW-1B that are reversed).

2) Piezometers with "GT" and "SA-BH" designations are screened in the shallow (silt-clay) water-bearing zone. .

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SCALE IN FEET

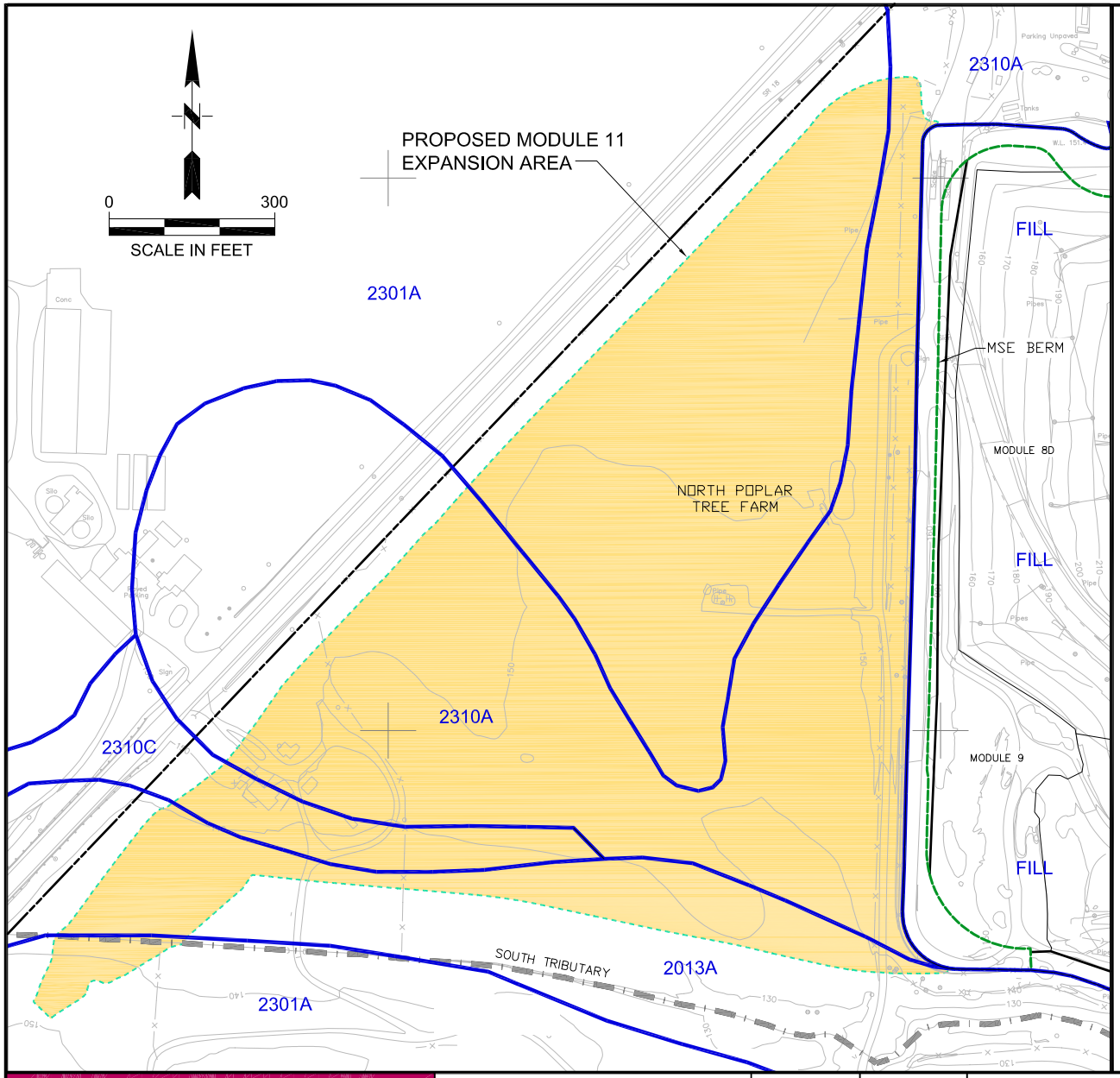
PROJECT NO. 04215015.00	DES BY D.L.
SCALE AS SHOWN	CHK BY L.C.
CAD FILE FIGURE 3-6	APP BY L.C.

PROPOSED MODULE 11 AREA WELL PAIR
GROUNDWATER ELEVATION HYDROGRAPHS

RIVERBEND LANDFILL
McMINNVILLE, OREGON

DATE JUNE 2015

FIGURE 3-6



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Soil Boundary
- Flow Line - Tributary Stream
- Proposed Expansion Area
- Mechanically Stabilized Earthen (MSE) Berm

SOIL MAP LEGEND:

Map Unit Symbol	Map Unit Name
2013A	Wapato silty clay loam, 0 to 3 percent slopes
2301A	Amity silty loam, 0 to 3 percent slopes
2310A	Woodburn silty loam, 0 to 3 percent slopes
2310C	Woodburn silty loam, 3 to 12 percent slopes
FILL	Fill land

BASE MAP SOURCE:

1. Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.
2. Natural Resources Conservation Service, Web Soil Survey. Soil Survey Area: Yamhill County, Oregon. Survey Area Data: Version 2, September 24, 2014.

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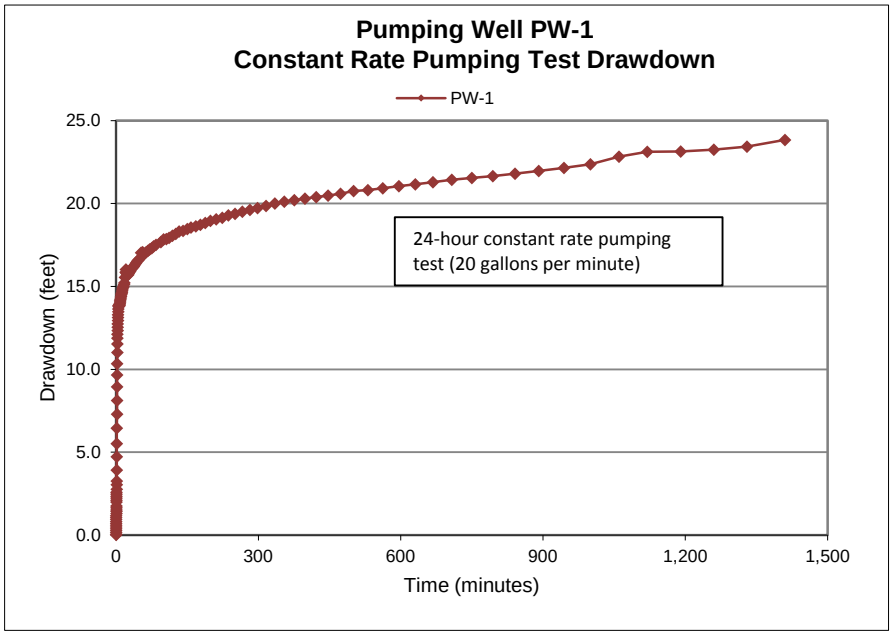
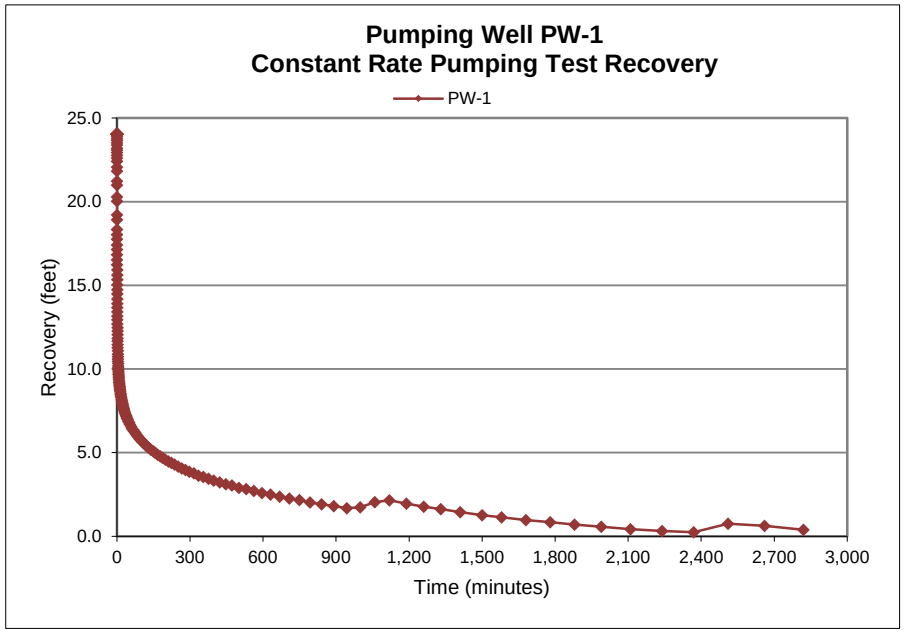
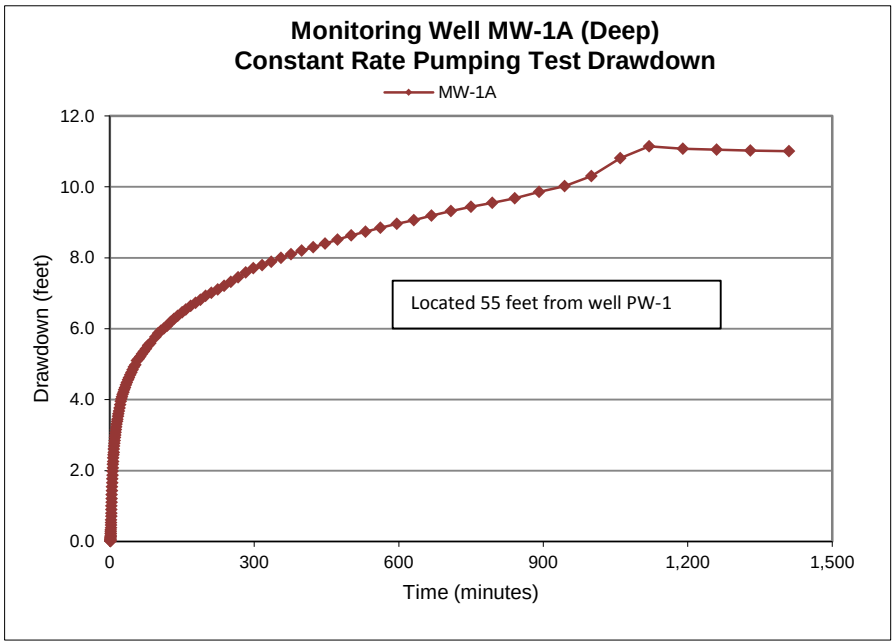
PROJECT NO. 04215015.00	DES BY D.L.	PROPOSED MODULE 11 AREA SOIL SURVEY MAP	DATE JUNE 2015
SCALE AS SHOWN	CHK BY L.C.	RIVERBEND LANDFILL McMINNVILLE, OREGON	FIGURE 4-1
CAD FILE FIGURE 4-1	APP BY L.C.		

Figure 4-2
24-Hour Pumping Test Drawdown and Recovery Graphs
Hydrogeologic Site Characterization
Riverbend Landfill







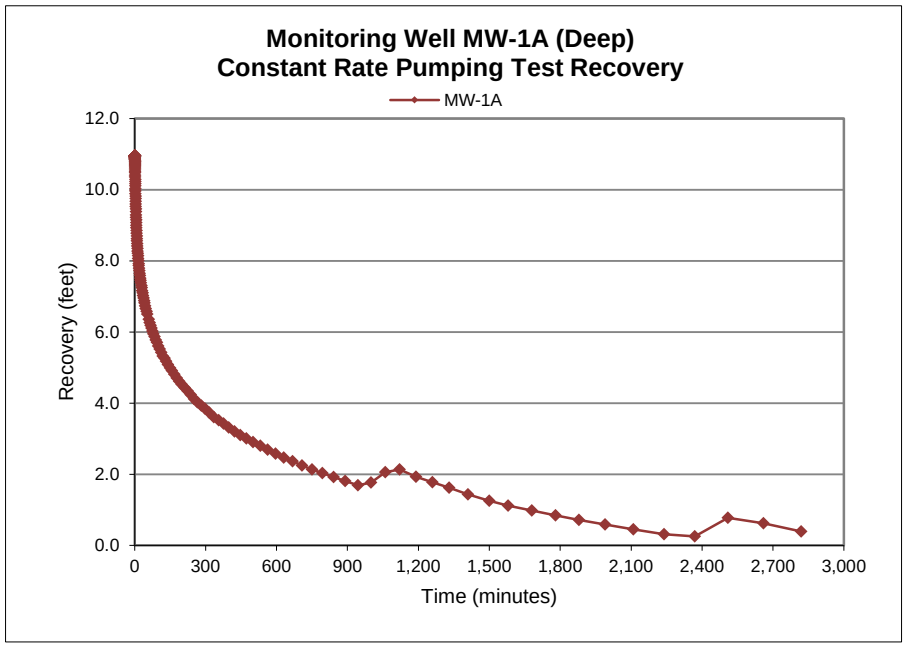
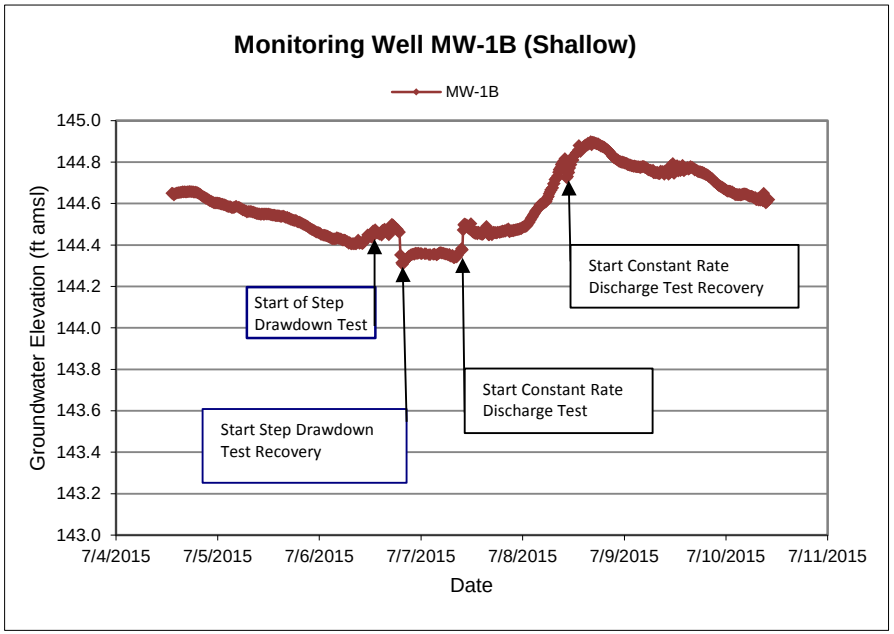
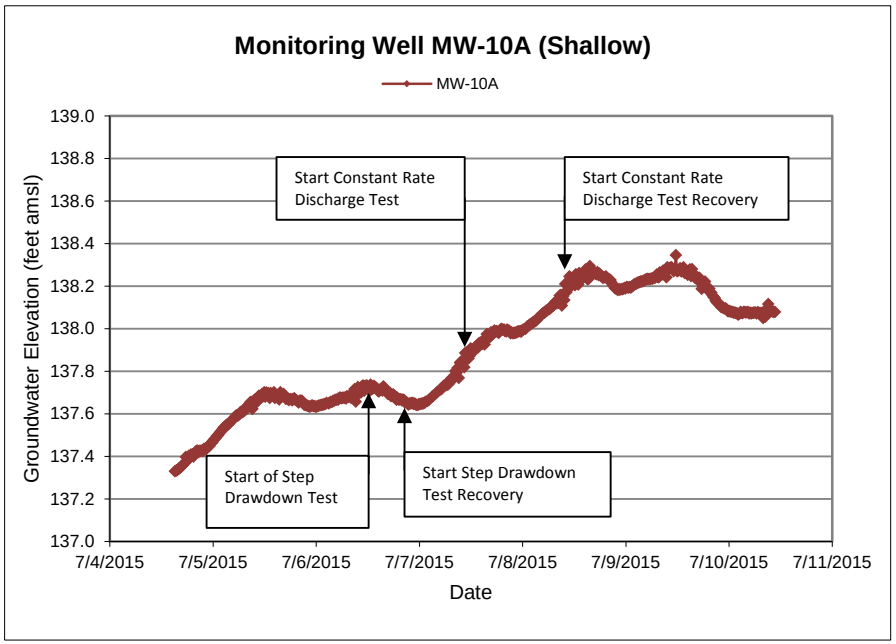
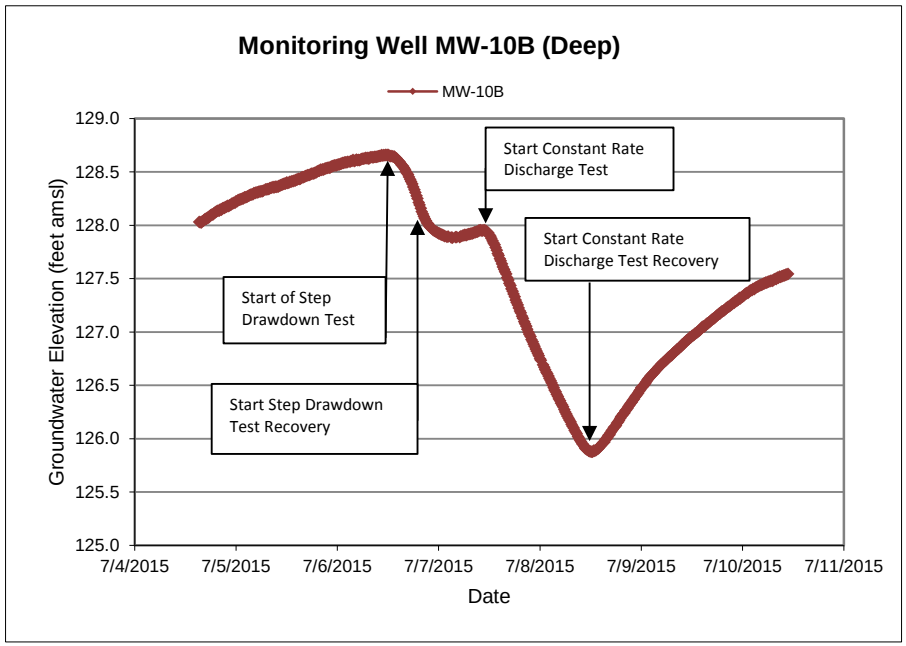
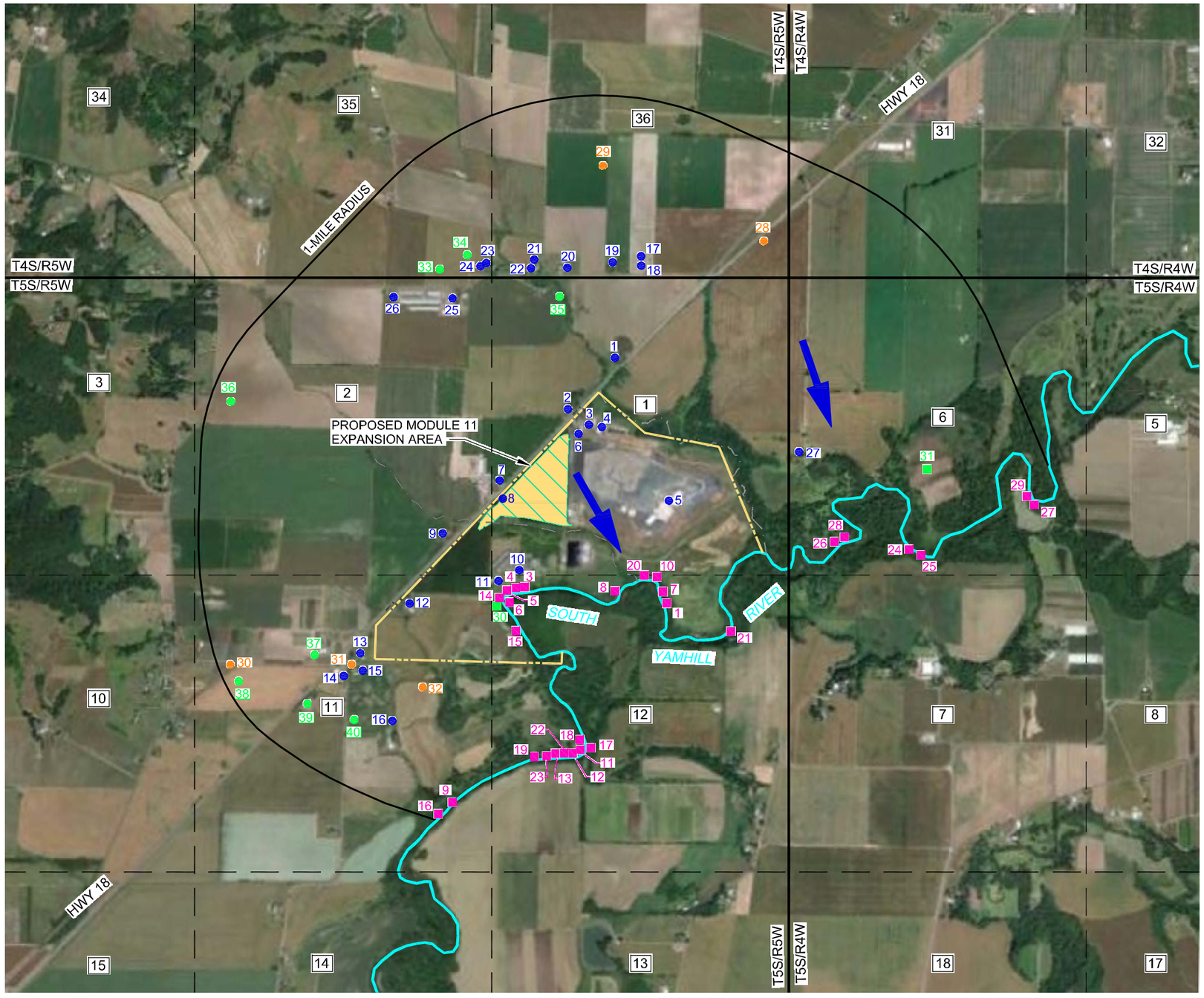


Figure 4-3
Pumping Test Groundwater Elevation Hydrographs
Hydrogeologic Site Characterization
Riverbend Landfill









LEGEND:

- 27 ● Water Supply Wells Identified and Field Verified during Beneficial Water Use Surveys in 1993 and 1994 (See Table 4-2 of HSC Report for Well Details)
- 32 ● Water Supply Wells Identified but not Field Verified during Beneficial Water Use Surveys in 1993 (Note 3) (See Table 4-2 of HSC Report for Well Details)
- 40 ● Water Supply Wells Identified by SCS Engineers based on review of water well Reports (Note 3) (See Table 4-2 of HSC Report for Well Details)
- 29 ■ Water Right Diversion Point Identified during Beneficial Water Use Survey in 1993 (See Table 4-1 of HSC Report for Additional Information)
- 31 ■ Additional Water Right Diversion Point Identified by SCS Engineers from Oregon Water Resource Department Website (See Table 4-1 of HSC Report for Additional Information)
- Regional Groundwater Flow
- Riverbend Landfill Property Boundary
- Flow Line - South Yamhill River
- T4S/R4W Approximate Township and Range Boundary and Identification (e.g. Township 4 South/Range 4 West)
- Approximate Township and Range Section Boundary (1-Mile Square)
- 1 Township and Range Section Number

NOTES:

1) Water wells located south of the South Yamhill River were excluded from the beneficial water use survey evaluation.

2) All beneficial use locations shown are approximate.

3) Based on review of Water Well Reports on file with the Oregon Water Resource Department.

SOURCE:

1) Beneficial Use Survey (EMCON, 1993a) and Additional Hydrogeologic Investigation (AHI; EMCON, 1994).

2) Satellite image © 2015, Google Earth.

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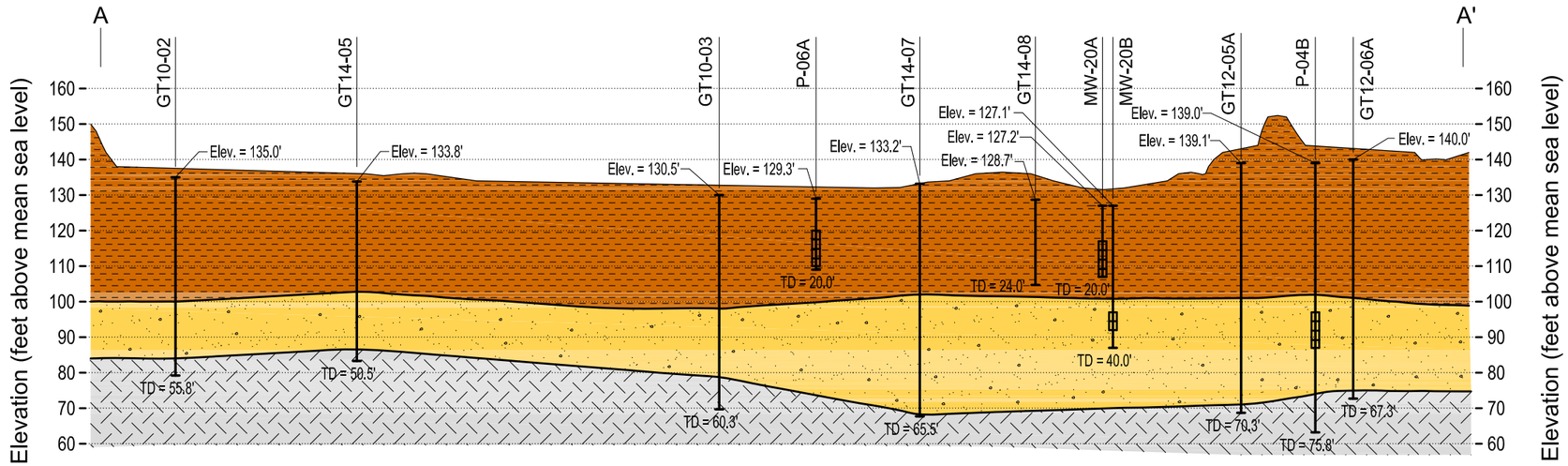
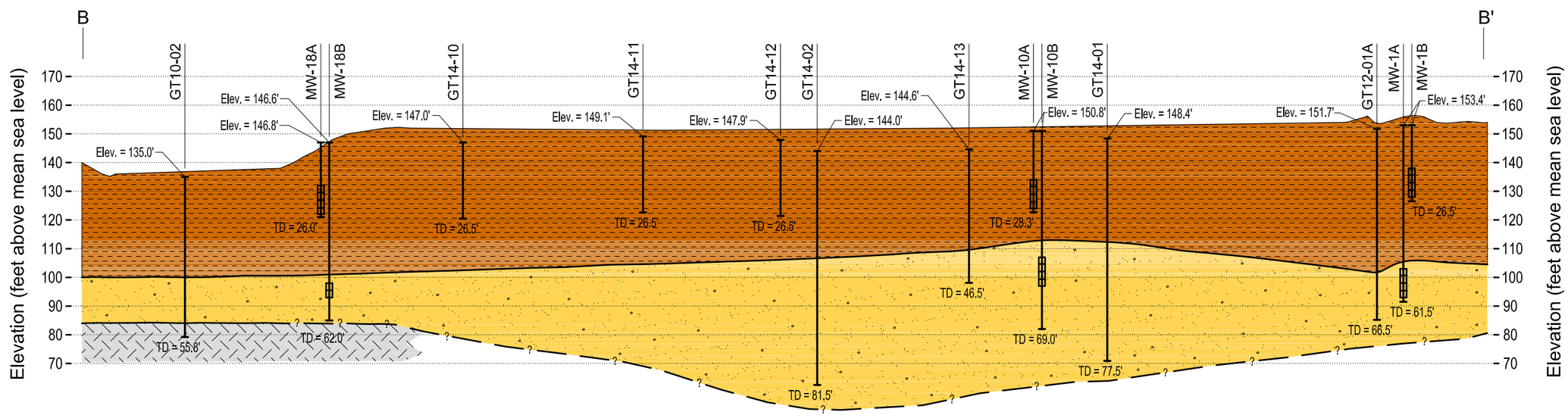
0 2000 4000
SCALE IN FEET

PROJECT NO. 04215015.00	DES BY D.L.	BENEFICIAL WATER USE SURVEY MAP	DATE JUNE 2015
SCALE AS SHOWN	CHK BY L.C.	RIVERBEND LANDFILL McMINNVILLE, OREGON	FIGURE 4-4
CAD FILE FIGURE 4-4	APP BY L.C.		



CROSS SECTION A-A'



CROSS SECTION B-B'

LEGEND:

- Quaternary Silt and Clay Unit
- Pliocene Sand and Gravel Unit
- Eocene Nestucca Formation (Basalt and Siltstone Bedrock)
- GT12-06A / TD = 67.3' — Exploratory Borehole with total depth (TD) drilled (feet below ground surface)
- P-04B / TD = 75.8' — Groundwater Monitoring Well or Piezometer, with screened interval shown and total depth (TD) drilled (feet below ground surface)

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WASTE MANAGEMENT

0 100 200 400
HORIZONTAL SCALE IN FEET

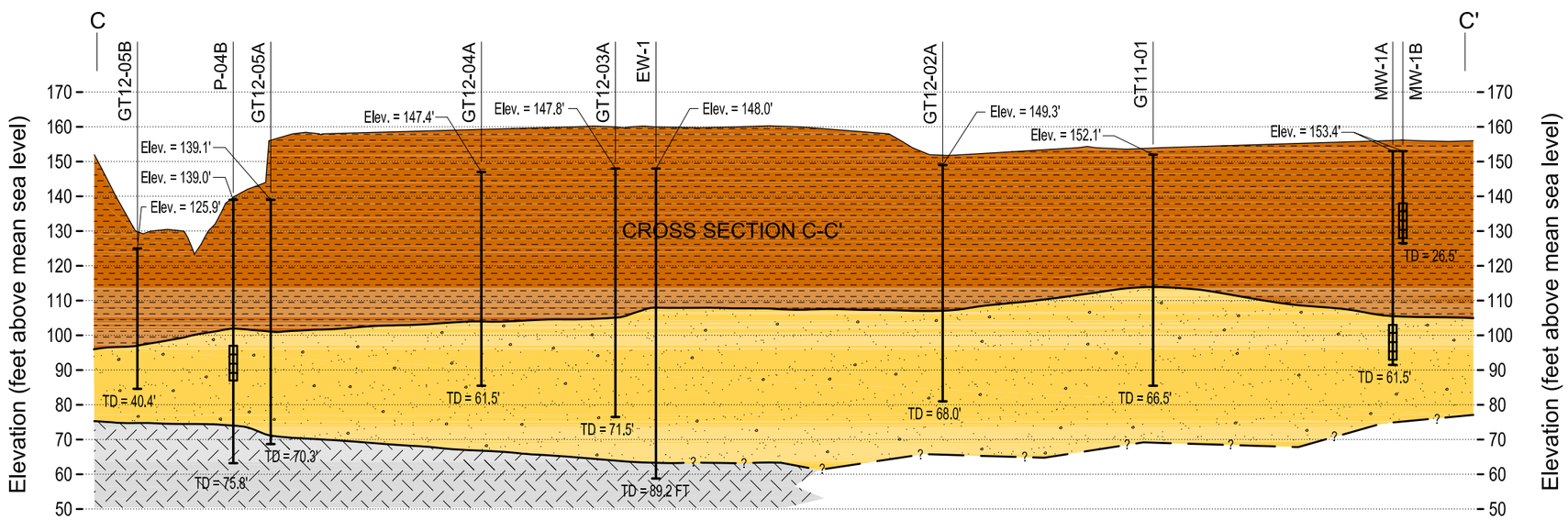
PROJECT NO. 04215015.00	DES BY D.L.
SCALE AS SHOWN	CHK BY L.C.
CAD FILE FIGURE 5-1	APP BY L.C.

GEOLOGIC CROSS SECTIONS A-A' AND B-B'

RIVERBEND LANDFILL
McMINNVILLE, OREGON

DATE JUNE 2015

FIGURE 5-1



LEGEND:

- Quaternary Silt and Clay Unit
- Pliocene Sand and Gravel Unit
- Eocene Nestucca Formation (Basalt and Siltstone Bedrock)
- GT12-05B / TD = 40.4' — Exploratory Borehole with total depth (TD) drilled (feet below ground surface)
- P-04B / TD = 75.8' — Groundwater Monitoring Well or Piezometer, with screened interval shown and total depth (TD) drilled (feet below ground surface)

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WASTE MANAGEMENT

0 100 200 400
HORIZONTAL SCALE IN FEET

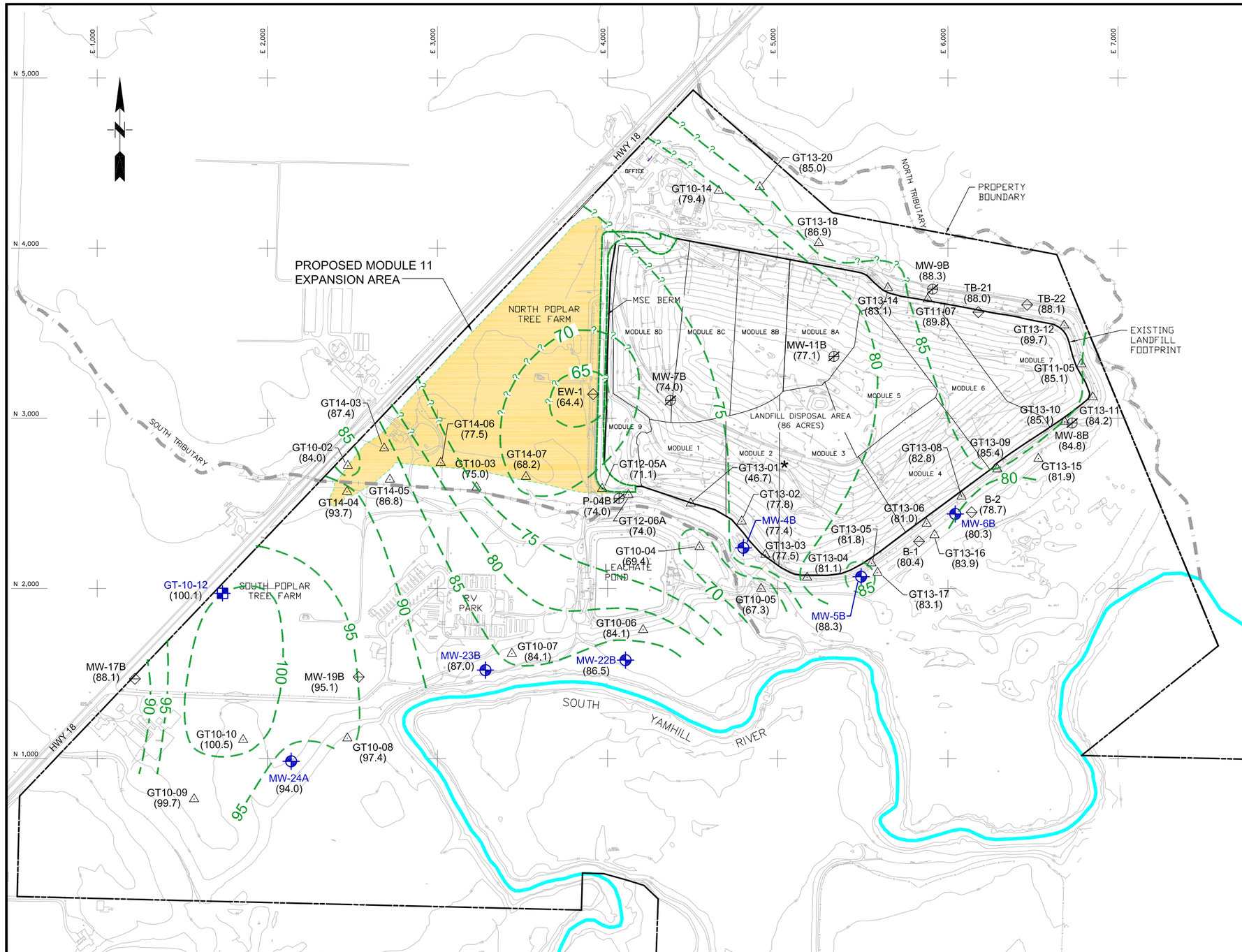
PROJECT NO. 04215015.00	DES BY D.L.
SCALE AS SHOWN	CHK BY L.C.
CAD FILE FIGURE 5-2	APP BY L.C.

GEOLOGIC CROSS SECTION C-C'

RIVERBEND LANDFILL
McMINNVILLE, OREGON

DATE JUNE 2015

FIGURE 5-2



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Tributary Stream
- Proposed Expansion Area
- Mechanically Stabilized Earthen (MSE) Berm
- MW-24A — Existing Groundwater Monitoring Well
- GT-10-12 — Existing Piezometer
- EW-1 — Test Boring
- GT14-07 — 2010 - 2014 Geotechnical Borehole
- MW-11B — Decommissioned Monitoring Well or Piezometer
- (85.5) — Top of bedrock (siltstone or basalt) elevation
- Inferred top of bedrock elevation contour, queried where uncertain
- * — Top of bedrock elevation appears to be anomalous and was not used for evaluation of elevation contours

BASE MAP SOURCE:

1) Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.

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WASTE MANAGEMENT

0 600 1200
SCALE IN FEET

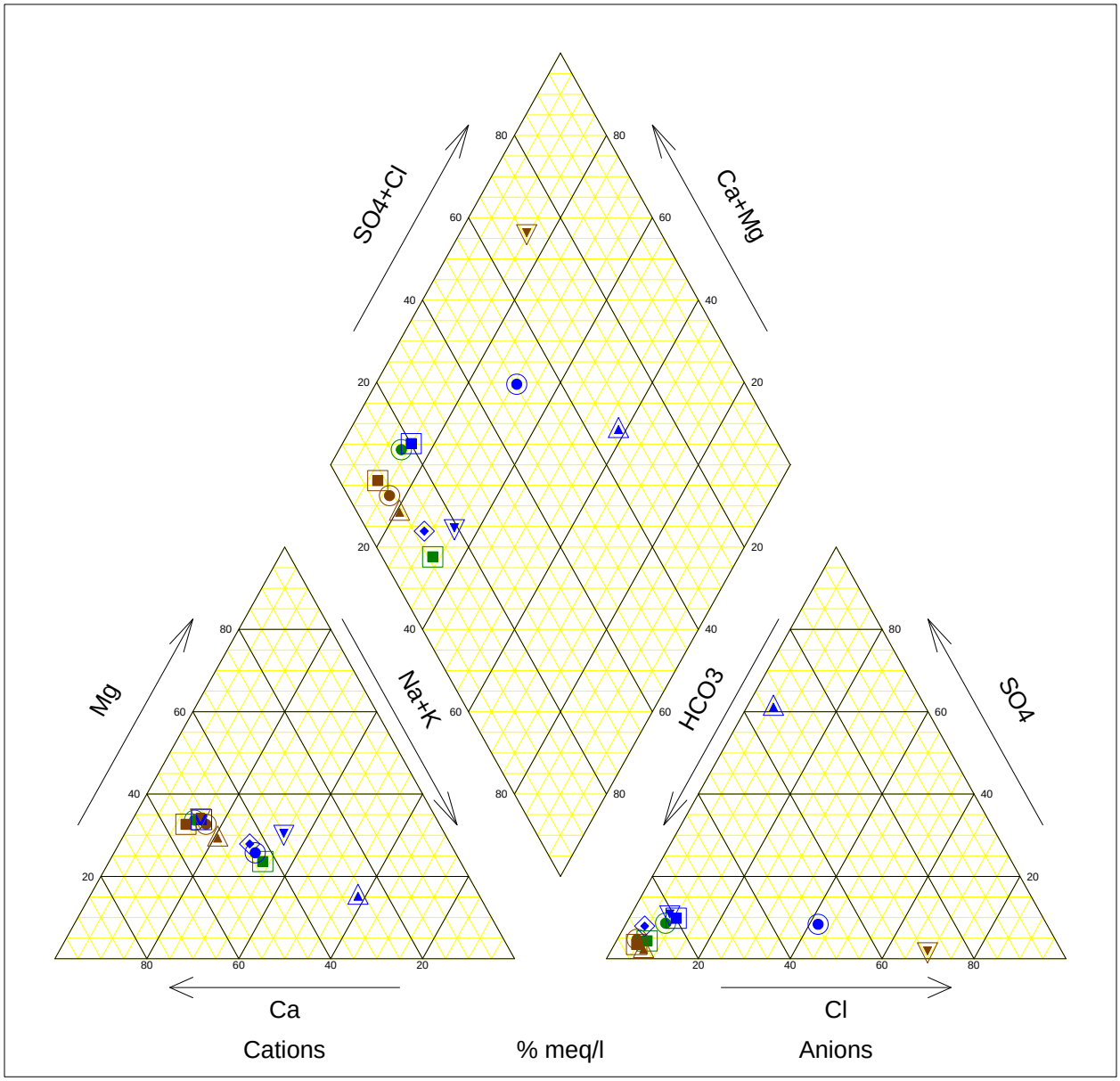
PROJECT NO. 04215015.00	DES BY D.L.
SCALE AS SHOWN	CHK BY L.C.
CAD FILE FIGURE 5-3	APP BY L.C.

ELEVATION CONTOURS OF THE BEDROCK SURFACE
RIVERBEND LANDFILL
McMINNVILLE, OREGON

DATE JUNE 2015

FIGURE 5-3

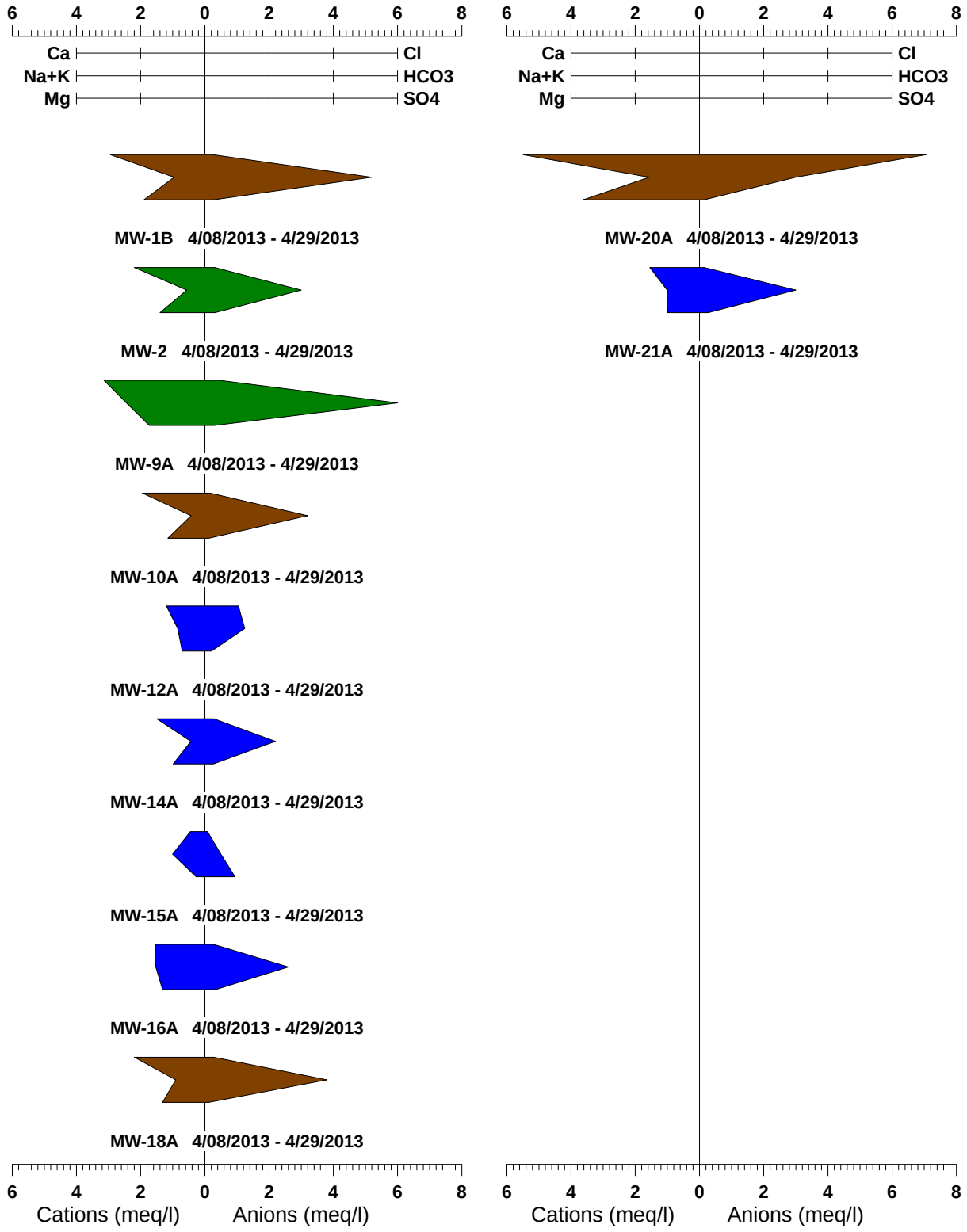
Figure 5-4: Shallow WBZ Groundwater Trilinear Diagram (Spring 2013)



MW-1B	4/08/2013 -	4/29/2013	MW-18A	4/08/2013 -	4/29/2013
MW-2	4/08/2013 -	4/29/2013	MW-20A	4/08/2013 -	4/29/2013
MW-9A	4/08/2013 -	4/29/2013	MW-21A	4/08/2013 -	4/29/2013
MW-10A	4/08/2013 -	4/29/2013			
MW-12A	4/08/2013 -	4/29/2013			
MW-14A	4/08/2013 -	4/29/2013			
MW-15A	4/08/2013 -	4/29/2013			
MW-16A	4/08/2013 -	4/29/2013			

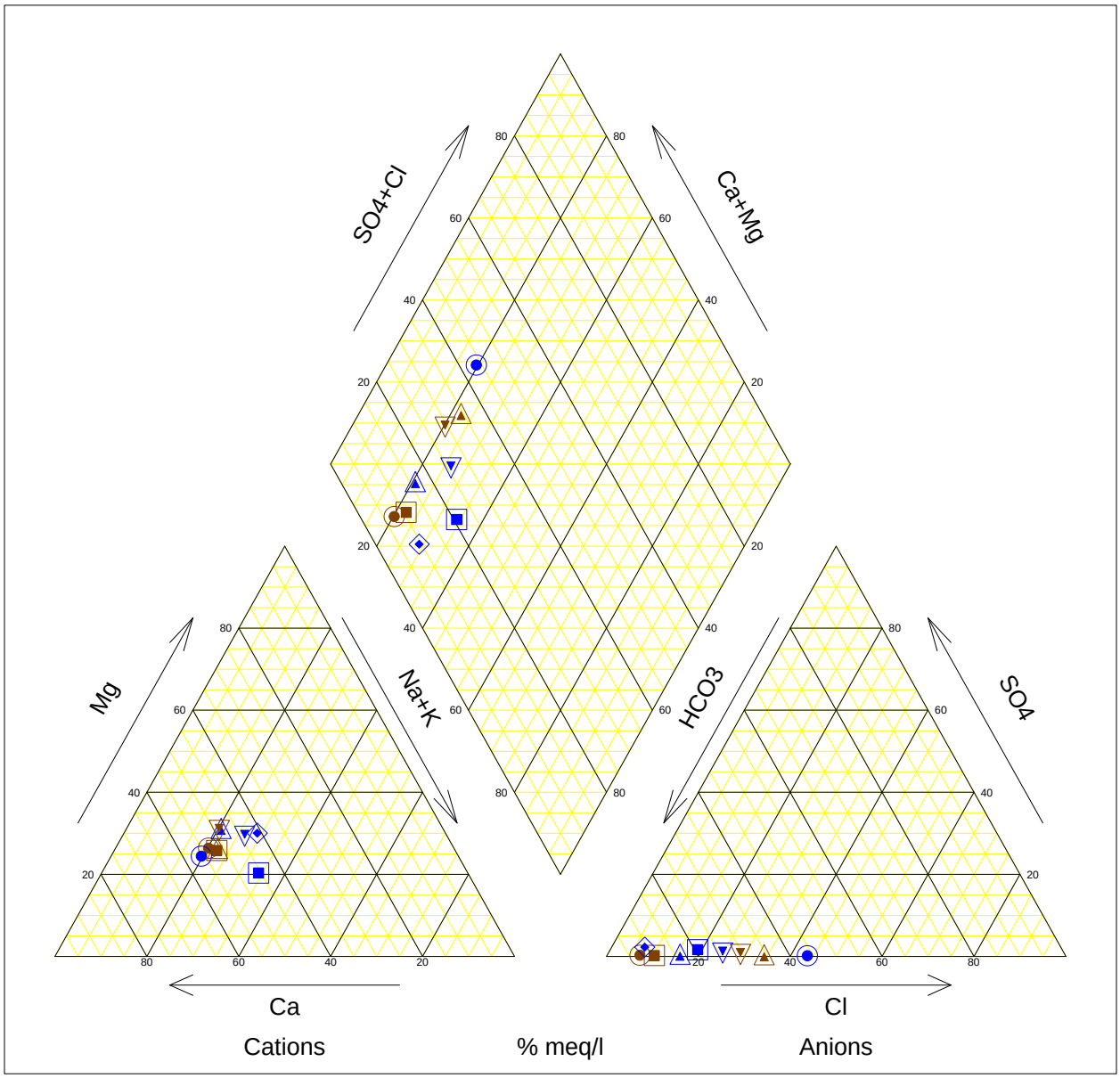
Prepared by: SCS Engineers

Figure 5-5: Shallow WBZ Groundwater Stiff Diagrams (Spring 2013)



Prepared by: SCS Engineers

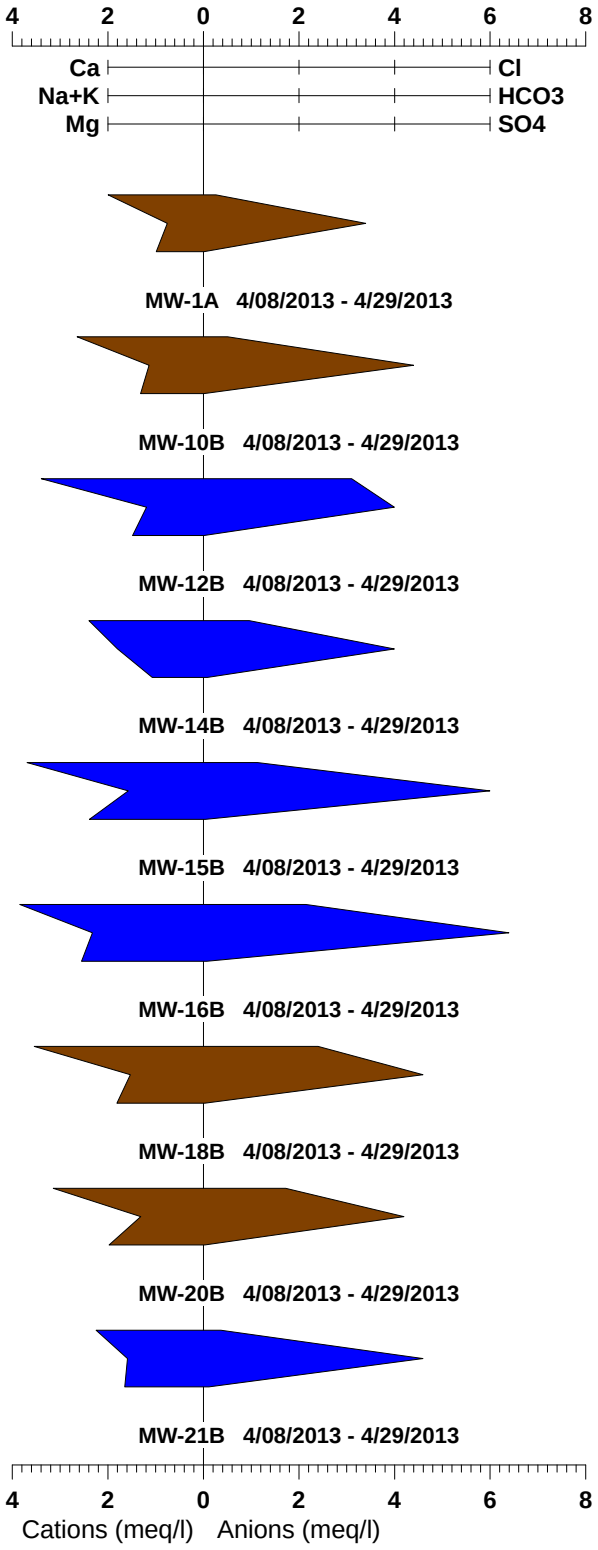
Figure 5-6: Deep WBZ Groundwater Trilinear Diagram (Spring 2013)

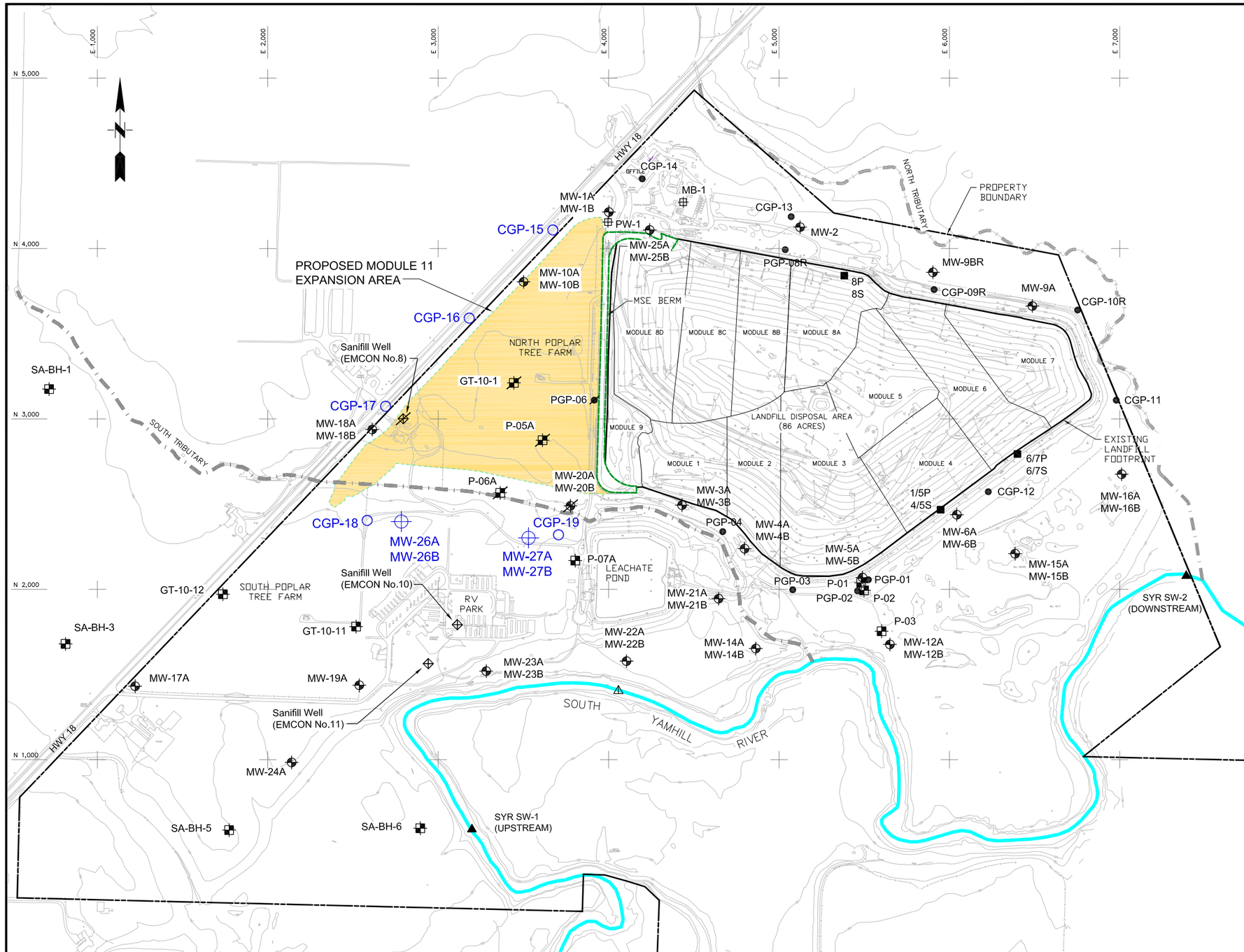


MW-1A	4/08/2013 -	4/29/2013	MW-21B	4/08/2013 -	4/29/2013
MW-10B	4/08/2013 -	4/29/2013			
MW-12B	4/08/2013 -	4/29/2013			
MW-14B	4/08/2013 -	4/29/2013			
MW-15B	4/08/2013 -	4/29/2013			
MW-16B	4/08/2013 -	4/29/2013			
MW-18B	4/08/2013 -	4/29/2013			
MW-20B	4/08/2013 -	4/29/2013			

Prepared by: SCS Engineers

Figure 5-7: Deep WBZ Groundwater Stiff Diagrams (Spring 2013)





LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Tributary Stream
- Proposed Expansion Area
- Mechanically Stabilized Earthen (MSE) Berm
- MW-19A — Groundwater Monitoring Well
- P-05A — Piezometer
- PW-1 — Landfill Water Well
- Sanifill Well — Residential or Community Water Well (Approximate Location)
- CGP-11 — Landfill Gas Monitoring Probe
- 6/7P 6/7S — LCRS and LSCS Monitoring Location
- SYR SW-1 — South Yamhill River Sampling Location (Approximate)
- South Yamhill River Gauging Station
- Proposed Compliance Groundwater Monitoring Well Pair (Approximate Location)
- Proposed Compliance Landfill Gas Monitoring Probe (Approximate Location)
- P-05A — Slash mark denotes monitoring feature proposed to be decommissioned as part of proposed Module 11 development.

BASE MAP SOURCE:

1) Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.

NOTES:

1) Monitoring wells and piezometers with "A" designation are screened in the shallow (silt-clay) water-bearing zone, and monitoring wells and piezometers with "B" designation are screened in the deeper (sand-gravel) water-bearing zone (except wells MW-1A and MW-1B that are reversed).

2) Piezometers with "GT" and "SA-BH" designations are screened in the shallow (silt-clay) water-bearing zone.

3) Leachate Collection and Removal System (LCRS) monitoring locations are identified by a "P" designation and Leak Detection System (LDS) monitoring locations are identified with a "S" designation.

4) Landfill gas monitoring probes with a "CGP" designation are compliance probes. Landfill gas monitoring probes with a "PGP" designation are performance evaluation probes.

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WASTE MANAGEMENT

0 600 1200
SCALE IN FEET

PROJECT NO.	DES BY
04215015.00	D.L.
SCALE: AS SHOWN	CHK BY: L.C.
CAD FILE: FIGURE 6-1	APP BY: L.C.

PROPOSED MODULE 11
MONITORING NETWORK MODIFICATIONS

RIVERBEND LANDFILL
McMINNVILLE, OREGON

DATE: JUNE 2015

FIGURE: 6-1

APPENDIX A

Borehole Logs and Well Construction Diagrams for Existing and Former Wells and Borings in the Proposed Module 11 Area

LOG OF EXPLORATORY BORING

PROJECT NAME	Riverbend Landfill	BORING NO.	MW- 1A
LOCATION	McMinnville, Oregon	PAGE	1 OF 4
DRILLED BY	Geo-Tech	GROUND ELEV.	
DRILL METHOD	H/S AUGER	TOTAL DEPTH	61.50'
LOGGED BY	G. Kelty	DATE COMPLETED	09/06/89

SAMPLE NUMBER	RECOVERY (ft./ft.)	BLOW COUNTS (N COMP)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
								0-5' SILTY CLAY (CL), black (5Y, 2.5/1); 90% fines, low to medium plasticity; 10% fine sand; common wood chips; damp.
#1	1.5/1.5	3-4-6 (10)		5				5-10.1' SILTY CLAY (CL), grayish brown (2.5Y, 5/2); 100% fines, low to medium plasticity, slightly silty; trace fine sand; stiff; damp.
#2	1.5/1.5	2-2-4 (6)		10				10.1-15' CLAYEY SILT (ML), dark grayish brown (10YR, 4/2); 100% fines, low to medium plasticity; trace fine sand, common quartz or mica (identification difficult due to size); minor rootlets; rapid dilatency; firm; damp.
#3	1.5/1.5	2-2-4 (6)		15				15-26' SILTY CLAY (CL) AND CLAYEY SILT (ML) INTERBEDDED, dark grayish brown (10YR, 4/2); 10% fine sand; firm. Silty Clay: 90% fines, low to medium plasticity; slow dilatency. Clayey Silt: 90% fines, slight to low plasticity; rapid dilatency; damp to wet.
			▽	20				

REMARKS

Drilled by 10-inch O.D. continuous flight, hollow stem auger. Samples collected with 1 1/2-inch O.D. split spoon sampler. Borehole converted to a 2-inch monitoring well.

LOG OF EXPLORATORY BORING

PROJECT NAME Riverbend Landfill
LOCATION McMinnville, Oregon
DRILLED BY Geo-Tech
DRILL METHOD H/S AUGER
LOGGED BY G. Kelty

BORING NO. MW- 1A
PAGE 2 OF 4
GROUND ELEV.
TOTAL DEPTH 61.50'
DATE COMPLETED 09/06/89

SAMPLE NUMBER	RECOVERY (ft./ft.)	BLOW COUNTS (N COMP)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
#4	1.5/1.5	1-2-4 (6)	20'					@20 ft: increasing silty content.
#5	1.5/1.5	2-3-3 (6)		25				26-35' SILTY CLAY (CL), dark gray (5Y, 4/1); 100% fines, low to medium plasticity; trace fine sand; slow dilatency; firm; damp to wet.
#6	1.5/1.5	1-2-3 (5)		30				26-35' SILTY CLAY (CL), continued from previous page.
#7	1.5/1.5	5-9-10 (19)		35				35-40' SILTY CLAY (CL), dark gray (5Y, 3/2); 100% fines; low to medium plasticity; trace fine sand; common quartz or mica; common hard clay nodules; very stiff; damp.
				40				

REMARKS

Drilled by 10-inch O.D. continuous flight, hollow stem auger. Samples collected with 1 1/2-inch O.D. split spoon sampler. Borehole converted to a 2-inch monitoring well.

LOG OF EXPLORATORY BORING

PROJECT NAME Riverbend Landfill
LOCATION McMinnville, Oregon
DRILLED BY Geo-Tech
DRILL METHOD H/S AUGER
LOGGED BY G. Kelty-

BORING NO. MW- 1A
PAGE 3 OF 4
GROUND ELEV.
TOTAL DEPTH 61.50'
DATE COMPLETED 09/06/89

SAMPLE NUMBER	RECOVERY (ft./ft.)	BLOW COUNTS (N COMP)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
#8	1.5/1.5	4-4-6 (10)						40-45' CLAY (CL), dark gray (5Y, 4/1); 100% fines, low to medium plasticity; trace fine sand; common iron oxide staining; common white altered feldspar; stiff; damp.
#9	1.5/1.5	6-8-11 (19)		45				45-50' SILTY CLAY (CL), olive gray (5Y, 5/2); 100% fines, low to medium plasticity; trace fine sand; common iron staining; common organic material; very stiff; damp.
#10	0.8/1.5	45-50-0 (50)		50				50-55' CLAYEY SANDY GRAVEL (GC), dark grayish brown (10YR, 4/2); 15% fines, low to medium plasticity; 35% fine sand; 50% fine to coarse gravel; common iron oxide staining; very dense; damp.
#11	1.5/1.5	5-35-50 (85)		55				55-55.5' CLAYEY SAND (SC), olive (5Y, 4/4); 40% fines low to medium plasticity, slightly silty; 60% fine sand; occasional fine gravel; dense; wet.
								55.5-56' SANDY CLAY (CL), pale olive (5Y, 6/3); 60% fines, low to medium plasticity, slightly silty; 40% fine sand; common altered feldspar; dense; damp.
								56-60' CLAYEY SANDY GRAVEL (GC), dark grayish brown (10YR, 4/2); 15% fines, low to medium
				60				

REMARKS

Drilled by 10-inch O.D. continuous flight, hollow stem auger. Samples collected with 1 1/2-inch O.D. split spoon sampler. Borehole converted to a 2-inch monitoring well.

LOG OF EXPLORATORY BORING

PROJECT NAME Riverbend Landfill
LOCATION McMinnville, Oregon
DRILLED BY Geo-Tech
DRILL METHOD H/S AUGER
LOGGED BY G. Kelty

BORING NO. MW- 1A
PAGE 4 OF 4
GROUND ELEV.
TOTAL DEPTH 61.50'
DATE COMPLETED 09/06/89

SAMPLE NUMBER	RECOVERY (ft./ft.)	BLOW COUNTS (N COMP)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
#12	1.5/1.5	12-14-16 (30)						plasticity; 35% fine sand; 50% fine to coarse gravel; common iron oxide staining; very dense; damp to wet.
								60-61.5' CLAY (CL), dark gray (2.5Y, N/4); 100% fines, low to medium plasticity; trace fine sand; common hard gray blue clay nodules; very stiff; damp.
								BOTTOM OF BORING AT 61.5 FEET.
				65				
				70				
				75				
				80				

REMARKS

Drilled by 10-inch O.D. continuous flight, hollow stem auger. Samples collected with 1 1/2-inch O.D. split spoon sampler. Borehole converted to a 2-inch monitoring well.

LOG OF EXPLORATORY BORING

PROJECT NAME Riverbend Landfill
LOCATION McMinnville, Oregon
DRILLED BY Geo-Tech
DRILL METHOD H/S AUGER
LOGGED BY G. Kelty

BORING NO. MW- 1B
PAGE 1 OF 2
GROUND ELEV.
TOTAL DEPTH 26.50'
DATE COMPLETED 09/08/89

SAMPLE NUMBER	RECOVERY (ft./ft.)	BLOW COUNTS (N COMP)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
								0-5' SILTY CLAY (CL), black (5Y, 2.5/1); 90% fines, low to medium plasticity; 10% fine sand; common wood chips; damp.
#1	0.8/1.5	3-5-9 (14)		5				5-10.1' SILTY CLAY (CL), grayish brown (2.5Y, 5/2); 100% fines, low to medium plasticity, slightly silty; trace fine sand; stiff; damp.
#2	1.5/1.5	2-3-4 (7)		10				10.1-15' CLAYEY SILT (ML), dark grayish brown (10YR, 4/2); 100% fines, low to medium plasticity; trace fine sand, common quartz or mica (identification difficult due to size); minor rootlets; rapid dilatency; firm; damp.
#3	1.5/1.5	1-2-2 (4)		15				15-26' SILTY CLAY (CL) AND CLAYEY SILT (ML) INTERBEDDED, dark grayish brown (10YR, 4/2); 10% fine sand; firm. Silty Clay: 90% fines, low to medium plasticity; slow dilatency. Clayey Silt: 90% fines, slight to low plasticity; rapid dilatency; damp to wet.
			▽	20				

REMARKS

Drilled by 10-inch O.D. continuous flight, hollow stem auger. Samples colected with 1 1/2-inch O.D. split spoon sampler. Borehole converted to a 2-inch monitoring well.

LOG OF EXPLORATORY BORING

PROJECT NAME Riverbend Landfill
LOCATION McMinnville, Oregon
DRILLED BY Geo-Tech
DRILL METHOD H/S AUGER
LOGGED BY G. Kelty

BORING NO. MW- 1B
PAGE 2 OF 2
GROUND ELEV.
TOTAL DEPTH 26.50'
DATE COMPLETED 09/08/89

SAMPLE NUMBER	RECOVERY (ft./ft.)	BLOW COUNTS (N COMP)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
#4	1.5/1.5	2-3-5 (8)	20'					@20 ft: increasing silty content.
				25				
#5	1.5/1.5	2-5-10 (15)						26-26.5' SILTY CLAY (CL), dark gray (5Y, 4/1); 100% fines, low to medium plasticity; trace fine sand; slow dilatency; firm; damp to wet.
								BOTTOM OF BORING AT 26.5 FEET.
				30				
				35				
				40				

REMARKS

Drilled by 10-inch O.D. continuous flight, hollow stem auger. Samples colected with 1 1/2-inch O.D. split spoon sampler. Borehole converted to a 2-inch monitoring well.

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	MW-10A
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	1 OF 2
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	150.80'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	28.30'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	10/27/93

RECOVERY PERCENT	POCKET PENETROMETER (Tons/SF)	PENETRATION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
100								0 to 25.5 feet: CLAYEY SILT (ML), dark grayish (10YR 4/2); 95 percent low plasticity fines; 5 percent sand, micaceous; abundant small macro pores, 1/32 to 1/15 inch in diameter, minor amount of slightly larger ones approximately 3/32 inch in diameter; minor amounts of 1/4 to 3/8 inch horizontal soil partings; stiff to very stiff; damp.
	>1.5		1/5/94					
	3.5							
	2.5							
94	2.0							
	2.5			5				
	2.5							
	2.5							@ 7.5 feet: 3-inch-thick SILTY SAND (SM) lense, 10 percent low plasticity fines (silt); 90 percent fine sand, rounded to subrounded, well sorted; appears loose; moist.
	1.75							
100	1.0							@ 8.0 feet: brown (10YR-4/3); moist.
	1.25			10				@ 10.5 feet: 3-inch-thick SILTY SAND (SM) lense, similar to the one at 7.5 feet.
	1.25							
	1.5							
	1.5							
100		11	5/27/93					@ 14.5 feet: wet.
				15				
97								
	2.0							@ 16.0 feet: 0.4-foot-thick SILTY CLAY (CL) lense. Paleo-soil horizon with black (carbon) root traces.
	1.0							
	0.5							@ 16.4 to 19.0 feet: minor amounts of almost indistinct SILTY SAND lenses, approximately 1- to 3-inch-thick, abundant platy varves, gradational between silt and sand. Note: core is very wet.
	0.5							
80	0.75							
				20				

REMARKS

Drilled with 8-inch O.D. (4.25-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	MW-10A
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	2 OF 2
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	150.80'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	28.30'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	10/27/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
	0.5							0 to 25.5 feet: CLAYEY SILT (ML), continued.
	0.5							@ 21.0 feet: color changes to dark grayish gray (5G 4/1); 2-inch sand lense above color change.
	0.5							@ 22.0 to 23.5 feet: platy varves, sandy surface to each varve (fine sand).
	0.75							
100	0.5							
	1.0			25				
	1.5							25.5 to 27.0 feet: SILTY SAND (SM), dark greenish gray (5G 4/1); 10 percent low platicity fines; 90 percent fine sand; appears loose, wet.
	3.0							27.0 to 28.3 feet: SILTY CLAY (CL), dark greenish gray (5G 4/1); medium plasticity fines; very stiff; wet.
	3.5							BORING TERMINATED AT 28.3 FEET.
				30				
				35				
				40				

REMARKS

Drilled with 8-inch O.D. (4.25-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

EMCON NORTHWEST

WELL DETAILS

CLIENT Riverbend Landfill Company, Inc.

PROJECT NUMBER 0258-001.28

PROJECT NAME Additional Hydrogeologic Inv.

LOCATION McMinnville, Oregon

WELL PERMIT NO. 59129

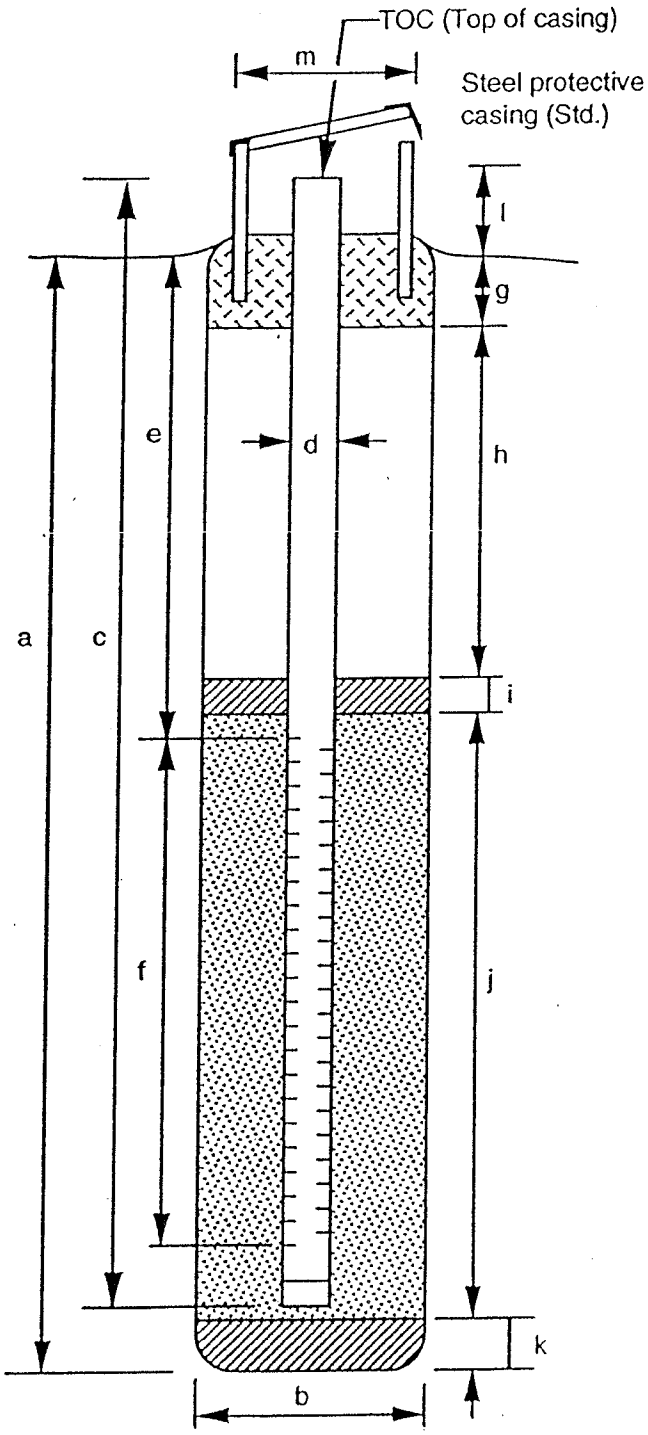
BORING / WELL NO. MW-10A

TOP OF CASING ELEV. 153.21

GROUND SURFACE ELEV. 150.8

DATUM Feet-Mean Sea Level

INSTALLATION DATE 10/28/93



EXPLORATORY BORING

a. Total depth 28.3 ft.

b. Diameter 8 in.

Drilling method Hollow Stem Auger

WELL CONSTRUCTION

c. Total casing length (+2.4 to 27.6) 30.0 ft.

Material Schedule 40 PVC

d. Diameter 2 in.

e. Depth to top perforations 17.3 ft.

f. Perforated length 9.5 ft.

Perforated interval from 17.3 to 26.8 ft.

Perforation type Machine Slotted

Perforation size 0.010 Inches

g. Surface seal (0 to 2.5) 2.5 ft.

Material Concrete

h. Backfill N.A. ft.

Material N.A.

i. Seal (2.2 to 14.0) 11.8 ft.

Material Bentonite

j. Gravel pack 14.3 ft.

Gravel pack interval from 14.0 to 28.3 ft.

Material 10-20 Gradation Sand

k. Bottom seal/fill N.A. ft.

Material N.A.

l. Casing stickup 2.4 ft.

m. Protective casing diameter 6.5 in.

Prepared by: Craig Fanshier

Ventura Form 4 Rev. 7/23/91

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	MW-10B
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	1 OF 4
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	150.80'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	69.00'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	10/25/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
90	1.0							0 to 4.0 feet: CLAYEY SILT (ML), brown (10YR 5/3), mostly evenly colored, trace lightly reddish brown mottling; low plasticity fines; trace fine sand, micaceous; some small macro pores (approximately 1/16-inch-diameter); very stiff; damp. Approximately 3/8-inch-thick poorly developed horizontal partings.
	4.0							
	4.0							
	3.5							
	2.5							
100	2.0							4.0 to 28.0 feet: SANDY SILT (SM), brown (10YR 4/3), approximately 5 percent small, light reddish brown mottling; 50 to 80 percent low plasticity fines; 20 to 50 percent fine sand, moderately sorted, subangular to subrounded, micaceous; abundant small (at 4.0 to 24.0 feet) macro pores (approximately 1/32- to 1/16-inch-diameter), approximately (5 to 10 per square inch) some larger vertically oriented macro pores (1/4-inch-diameter) approximately 1 to 2 per foot of core, open with no moisture, horizontal partings, are absent or very poorly developed; very stiff; damp to moist, moist at 8.0 feet, minor 2- to 3-inch-thick SILTY SAND lenses from 4.0 to 19.0 feet interbedded with gradational contact.
	2.5			5				
	2.0							
	2.5							
100	1.75		10/25/93 ▽					
	1.5			10				
	1.0							
	1.5							@ 9.0 feet: changes to medium stiff to stiff.
	1.0							@ 11.0 feet: wet.
100	0.75							@ 14.0 to 14.5 feet: SILTY SAND (SM) lense.
	0.5			15				
	0.75		▼ 1/5/94					
	0.5							
	3.0							@ 17.5 to 17.9 feet: CLAYEY SILT (ML), very stiff.
	1.5							@ 18.4 to 18.9 feet: SILTY SAND (SM) lense.
100	3.5							@ 19.5 feet: very sharp change in color to dark greenish gray (5G 4/1); strongly developed 1/4 to 3/8 inch varves (soil partings).
				20				

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	MW-10B
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	2 OF 4
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	150.80'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	69.00'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	10/25/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
	2.0							**4.0 to 28.0 feet: SANDY SILT (SM)**, continued.
	1.5							@ 20.0 feet: interbedded small (0.2- to 0.6-foot-thick) CLAYEY SILT (ML) and SILTY SAND (SM) lenses.
	1.5							@ 20.0 to 23.0 feet: slight purplish tint.
	0.5							
	0.5							
	1.0							
100	1.0	25						
				25				
100	2.5							
	4.0							@ 26.0 feet: SANDY SILT (ML) lenses.
	2.5							
	1.0							@ 28.0 feet: soil is crumbly; wet.
	3.5							**28.0 to 38.0 feet: SILTY CLAY (CL)**, dark greenish gray (5G 4/1), evenly colored; 95 percent low to medium plasticity fines; 0 to 5 percent fine sand; abundant very small 1/32 inch macro pores; some minor lenses of varves (1/4-inch-thick partings); soft to medium stiff; wet.
100	0.75							
	1.5			30				
	>0.5							
	>0.5							
	1.0							
	1.5							
	>0.5							
80		25						
				35				@ 35.0 to 39.0 feet: drilling gets harder (hard layers with several small gravels); very stiff.
100	3.0							
	2.5							@ 37.0 to 38.0 feet: 20 percent fine gravels; grayish green (5G 4/2).
								@ 38.0 feet: rocky drilling noise.
								38.0 to 39.0 feet: SANDY GRAVEL (GP), grayish green (5G 4/2); 10 to 15 percent low to medium plasticity fines; continues.
40								
				40				

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	MW-10B
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	3 OF 4
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	150.80'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	69.00'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	10/25/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								38.0 to 39.0 feet: SANDY GRAVEL (GP), continued: 30 to 40 percent fine to coarse sands; 50 to 60 percent fine to coarse gravel; appears medium dense; wet.
100		50/6"		45				**39.0 to 44.5 feet:** CLAYEY GRAVEL (GC), dark yellowish brown (10YR 3/4), shade varies, some moderate iron oxide staining; 10 to 30 percent medium plasticity fines; 10 to 20 percent fine to coarse sand; 50 to 60 percent fine gravels, matrix supported, mostly rounded; appears medium dense; wet. Note: the clayey matrix is sticky. Minor 2 to 6 inch lense with approximately 5 percent fines; loose.
57								@ 41.0 feet: core barrel recovery blocked by 3 inch rock wedged into the core barrel.
								@ 44.0 feet: split spoon in CLAYEY GRAVEL (GC), penetration blocked by gravel; dense.
96				50				**44.5 to 60.0 feet:** SANDY GRAVEL (GP), dark yellowish brown (10YR 3/6); 10 to 15 percent low plasticity fines; 30 percent fine to coarse sand (F:C = 1:1); 55 to 60 percent fine to coarse gravel (F:C = 2:1), gravels subangular, matrix supported; dense to very dense; wet.
								@ 49.0 to 54.0 feet: mostly fine gravel in a dense silty sand with trace clay matrix; very hard drilling, engine is lugging.
96				55				@ 53.5 to 53.8 feet: 2-inch-thick SILTY CLAY (CL) lense in the core barrel shoe.
								@ 54.0 feet: color changes to dark greenish gray (5GY 4/1).
								@ 54.0 to 54.3 feet: CLAYEY GRAVEL (GC).
								@ 57.5 to 58.2 feet: lenses of SILTY CLAY (CL) with 5 percent medium sand (possibly altered volcanic ash).
100								@ 59.0 feet: thin clay lense.
				60				

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	MW-10B
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	4 OF 4
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	150.80'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	69.00'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	10/25/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
	4.0							60.0 to 61.0 feet: CLAYEY SAND (SC), dark greenish gray; 40 percent medium plasticity fines; 60 percent fine to medium sand; hard; wet.
								61.0 to 61.5 feet: SILTY SAND (SM)
								61.5 to 62.5 feet: SAND (SP)
100				65				62.5 to 69.0 feet: SANDY GRAVEL (GP), dark greenish gray; 40 percent medium to coarse sand (M:C = 1:1), angular to subrounded; 60 percent gravels (F:C = 2:1), larger gravels are smooth (water worked); minor amounts of brown wood fragments at 62.0 to 64.0 feet; appears dense; wet.
								@ 67.0 feet: several 1-inch by 1/16-inch gravels (flat), many gravels rounded.
								@ 68.0 to 69.0 feet: appears looser.
								@ 69.0 feet: 1-foot of sand heave in auger.
								BORING TERMINATED AT 69.0 FEET.
				70				
				75				
				80				

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

EMCON NORTHWEST

WELL DETAILS

CLIENT Riverbend Landfill Company, Inc.

PROJECT NUMBER 0258-001.28

PROJECT NAME Additional Hydrogeologic Inv.

LOCATION McMinnville, Oregon

WELL PERMIT NO. 59133

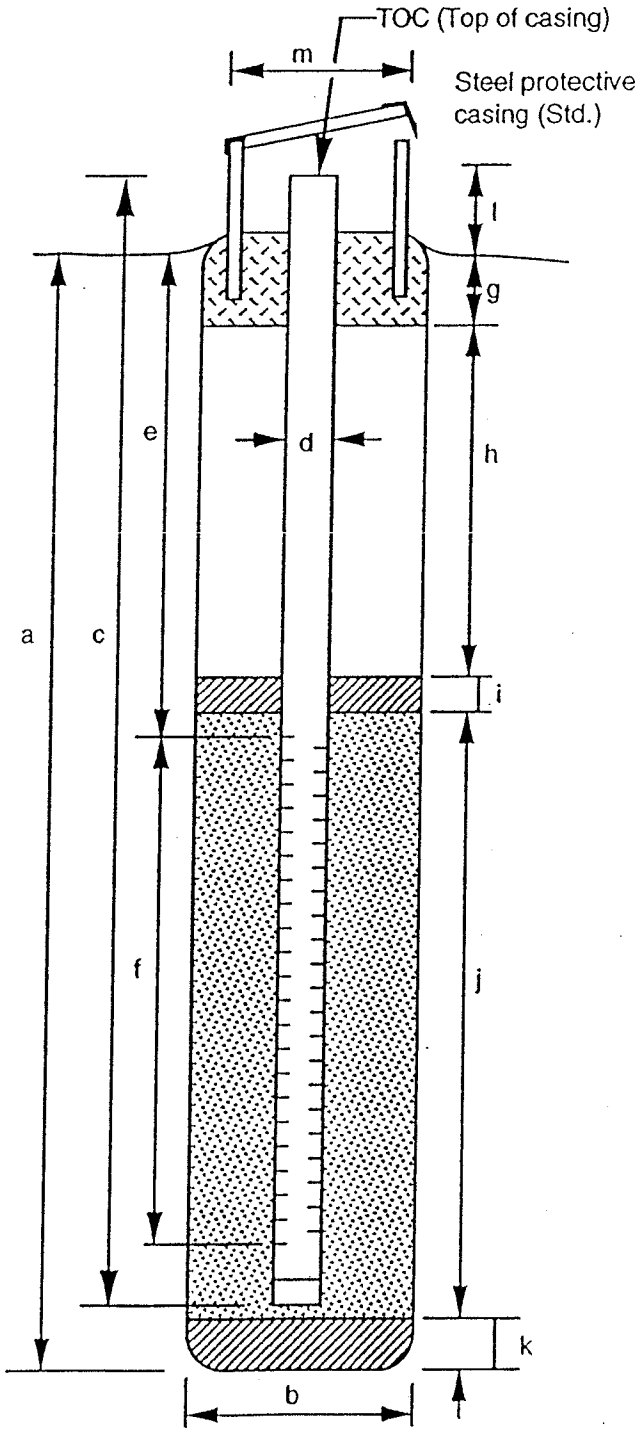
BORING / WELL NO. MW-10B

TOP OF CASING ELEV. 152.87

GROUND SURFACE ELEV. 150.8

DATUM Feet-Mean Sea Level

INSTALLATION DATE 10/27/93



EXPLORATORY BORING

a. Total depth 69.0 ft.

b. Diameter 10 in.

Drilling method Hollow Stem Auger

WELL CONSTRUCTION

c. Total casing length (+2.1 to 54.6) 56.7 ft.

Material Schedule 40 PVC

d. Diameter 2 in.

e. Depth to top perforations 44.3 ft.

f. Perforated length 9.5 ft.

Perforated interval from 44.3 to 53.8 ft.

Perforation type Machine Slotted

Perforation size 0.010 Inches

g. Surface seal (0 to 2.0) 2.0 ft.

Material Concrete

h. Backfill N.A. ft.

Material N.A.

i. Seal (2.0 to 40.9) 38.9 ft.

Material Bentonite

j. Gravel pack 14.4 ft.

Gravel pack interval from 40.9 to 55.3 ft.

Material 10-20 Gradation Sand

k. Bottom seal/fill (55.3 to 69.0) 13.7 ft.

Material Bentonite

l. Casing stickup 2.1 ft.

m. Protective casing diameter 6.5 in.

Centralizers at 20.0 and 43.0 feet bgs.

Prepared by: Craig Fanshier

Rev. 7/23/91

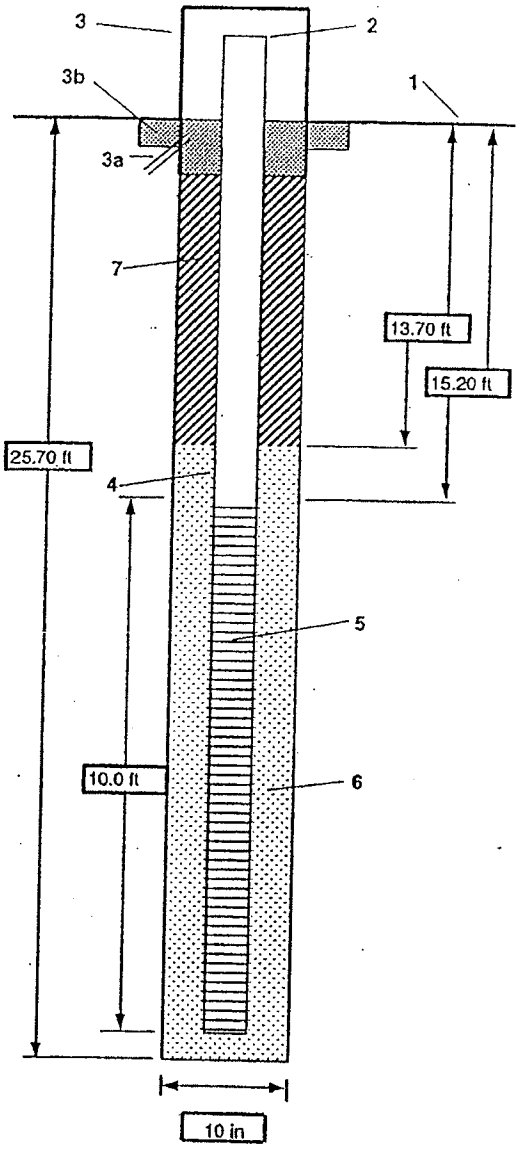
Ventura Page 4

CH2MHILL

PROJECT NUMBER	BORING NUMBER
159636.A0.03	MW-18A (L40375) SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT : Riverbend Landfill LOCATION : McMinnville, Oregon Installation date(s): 09/26/2000
ELEVATION : 146.77 ft msl DRILLING CONTRACTOR : Geo-Tech Explorations, Inc.
DRILLING METHOD AND EQUIPMENT USED : B-59 Mobile Hollow-Stem Auger (6.25" ID)
WATER LEVELS : START : END : LOGGER : B. Long



1- Ground elevation at well: 146.77 ft msl

2- Top of casing elevation: 148.77 ft msl

3- Wellhead protection cover type: Above-ground monument
a) drain tube? No
b) concrete pad dimensions: Approx. 2' x 2'

4- Diameter/type of well casing: 2" Sch. 40 PVC

5- Type/slot size of screen: 2" Sch.40 PVC / 0.010 slot

6- Type screen filter: Silica sand (20-40)
a) Quantity used: 8-50 lb bags

7- Type of seal: Med. bentonite chips (45-43 ft), bent. grout to conc pad
a) Quantity used: 8-50 lb bags
b) Top of seal: Concrete

Development method: Pump & surge

Development time: Approx. 3 hours

Estimated purge volume: 33 gallons

Comments: Well screen length is nominal; actual screened portion is approx. 1 foot shorter than labeled length

CH2MHILL

BORING NUMBER
MW-18A

SOIL BORING LOG

PROJECT : Riverbend Landfill
LOCATION : McMinnville, Oregon
DATE: 09/26/2000
ELEVATION : 146.77 ft msl
DRILLING CONTRACTOR: Geo-Tech Explorations, Inc.
DRILLING METHOD : Hollow-Stem Auger
WATER LEVELS :
START :
END:
LOGGER : B. Long

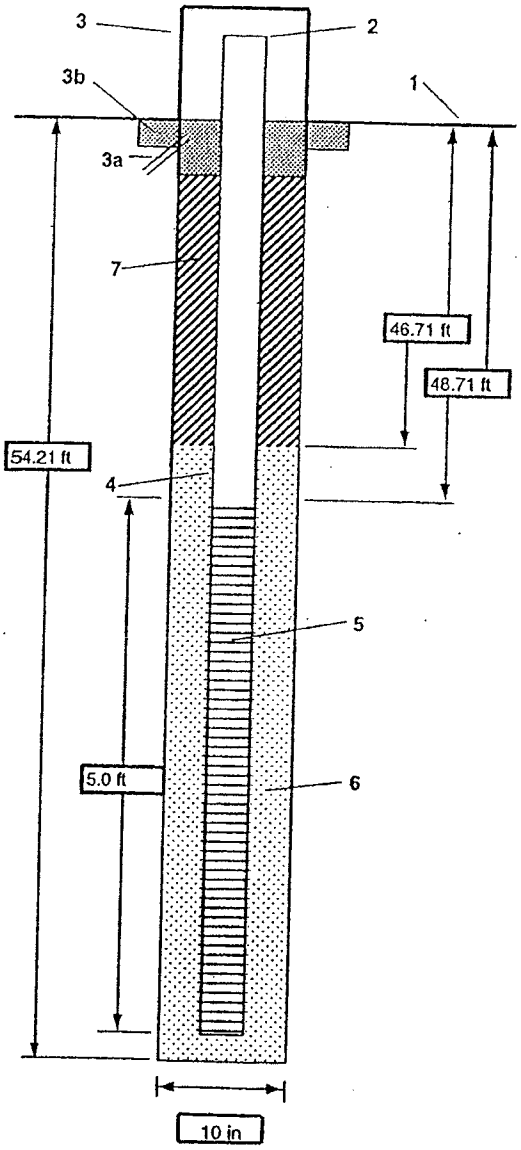
DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL, #	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS
			Grass field, pea gravel (old road bed) Samples not obtained 0'-4'	
5		ML	SILT (ML), Lt. Brown, moist, medium stiff, platey, massive, mica fragments, fine roots, macropores, trace clay.	
10			CLAY (CL), Lt brown (10-30% clay), medium stiff, platey, mica fragments, rootlets, macropores, increasing moisture @ 10' From 13-25 feet - 1"-2" seams of sandy silt @ 6"-10" intervals;	
15			As above, but mottled lt brown, fewer rootlets & macropores, saturated	
20		CL	As above w/some organic fragments, no rootlets or macropores	
25			Clay (CL), bluish-gray, wet, stiff, homogeneous, trace mica.	

CH2MHILL

PROJECT NUMBER	BORING NUMBER
159636.A0.03	MW-18B (L40374) SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT: Riverbend Landfill LOCATION: McMinnville, Oregon Installation date(s): 09/25/2000
ELEVATION: 146.58 ft msl DRILLING CONTRACTOR: Geo-Tech Explorations, Inc.
DRILLING METHOD AND EQUIPMENT USED: B-59 Mobile Hollow-Stem Auger (6.25" ID)
WATER LEVELS: START: END: LOGGER: B. Long



1- Ground elevation at well: 146.58 ft msl

2- Top of casing elevation: 148.57 ft msl

3- Wellhead protection cover type: Above-ground monument
a) drain tube? No
b) concrete pad dimensions: Approx. 2' x 2'

4- Diameter/type of well casing: 2" Sch. 40 PVC

5- Type/slot size of screen: 2" Sch.40 PVC / 0.010 slot

6- Type screen filter: Silica sand (10-20)
a) Quantity used: 7-50 lb bags

7- Type of seal: Bentonite grout
a) Quantity used: 2-50 lb bags
b) Top of seal: Concrete

Development method: Pump & surge

Development time: Approx. 2.5 hrs

Estimated purge volume: 80 gallons

Comments: Well screen length is nominal; actual screened portion is approx. 6 inches shorter than labeled length

CH2MHILL

BORING NUMBER MW-18B

SOIL BORING LOG

PROJECT : Riverbend Landfill
LOCATION : McMinnville, Oregon
DATE: 09/25-26/2000
ELEVATION :
DRILLING CONTRACTOR: Geo-Tech Explorations, Inc.
DRILLING METHOD : Hollow-Stem Auger
WATER LEVELS :
START : 12:00
END:
LOGGER : B. Long

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL, #	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS
			Grass field, pea gravel (old road bed), over light brown SILT Samples not obtained 0'-4'	
5		ML	SILT (ML), Lt. Brown, moist, medium stiff, platey, massive, mica fragments, fine roots, macropores, trace clay.	
10			CLAY with silt (CL), Lt brown, medium stiff, platey, mica fragments, rootlets, macropores, increasing moisture @ 10' From 13-25 feet - 1"-2" seams of sandy silt @ 6"-10" intervals	
15			As above, but mottled lt brown, fewer rootlets & macropores, saturated	
20		CL	As above w/some organic fragments, no rootlets or macropores	
25	S-11		Clay (CL), bluish-gray, wet, stiff, homogeneous, trace mica.	
	S-12			
	S-13			
30	S-14			
	S-15			
35	S-16			

CH2MHILL

BORING NUMBER
MW-18B

SOIL BORING LOG

PROJECT : Riverbend Landfill
LOCATION : McMinnville, Oregon
DATE: 09/25-26/2000
ELEVATION :
DRILLING CONTRACTOR: Geo-Tech Explorations, Inc.
DRILLING METHOD : Hollow-Stem Auger
WATER LEVELS :
START :
END:
LOGGER : B. Long

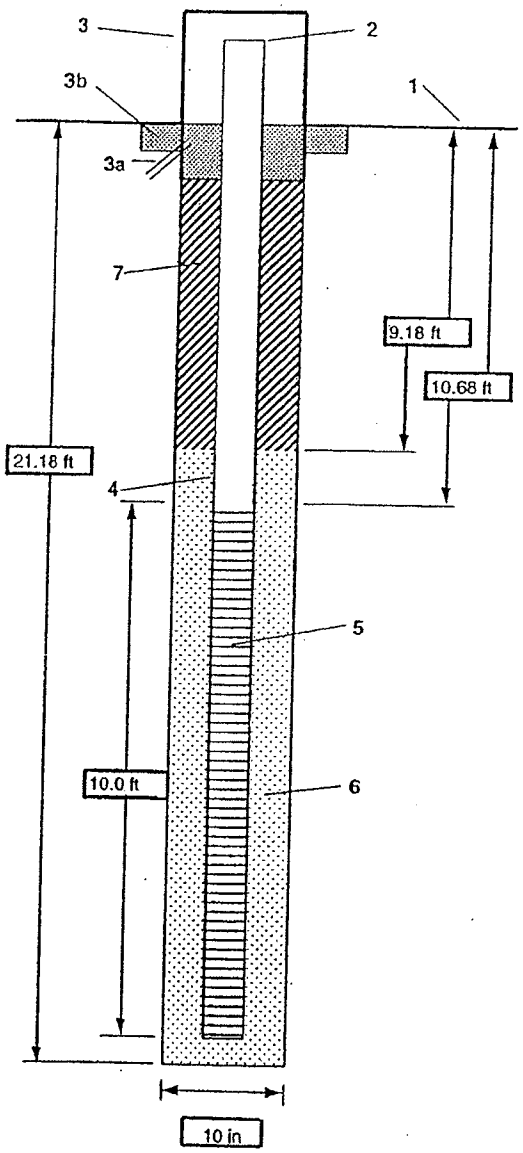
DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL, #	GRAPHIC LOG	SOIL DESCRIPTION (SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.)	COMMENTS
		CL	CLAY (CL), dark gray, moist, med stiff to stiff, homogeneous, trace of mica fragments	
		GP	Poorly graded fine GRAVEL with clay (GP), dark gray, moist, very dense, iron oxide on gravel clasts; basalt clasts to 1/2"	
40		CL	CLAY (CL), Yellowish-brown to lt gray (mottled), moist, stiff, trace coarse sand, highly weathered	
45				
		GP	Poorly graded fine GRAVEL (GP) with sand and silt, reddish brown, wet, dense, clast supported, basalt.	
50				
55				
60		GP-GC	As above with greater silt content	End of boring @ 62 ft

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
159636.A0.03	MW-20A (L40378)	SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT: Riverbend Landfill LOCATION: McMinnville, Oregon Installation date(s): 10/02/2000
ELEVATION: 127.20 ft msl DRILLING CONTRACTOR: Geo-Tech Explorations, Inc.
DRILLING METHOD AND EQUIPMENT USED: B-59 Mobile Hollow-Stem Auger (6.25" ID)
WATER LEVELS: START: END: LOGGER: B. Long



1- Ground elevation at well: 127.20 ft msl

2- Top of casing elevation: 129.92 ft msl

3- Wellhead protection cover type: Above-ground monument
a) drain tube? No
b) concrete pad dimensions: Approx. 2' x 2'

4- Diameter/type of well casing: 2" Sch. 40 PVC

5- Type/slot size of screen: 2" Sch.40 PVC / 0.010 slot

6- Type screen filter: Silica sand (20-40)
a) Quantity used: 9 - 50 lb bags

7- Type of seal: Medium bentonite chips
a) Quantity used: 6 - 50 lb bags
b) Top of seal: Concrete

Development method: Pump & surge

Development time: Approx 3.5 hrs

Estimated purge volume: 68 gallons

Comments: Well screen length is nominal; actual screened portion is approx. 1 foot shorter than labeled length

CH2MHILL

BORING NUMBER
MW-20A

SOIL BORING LOG

PROJECT : Riverbend Landfill
LOCATION : McMinnville, Oregon
DATE: 10/02/2000
ELEVATION : 127.20 ft msl
DRILLING CONTRACTOR: Geo-Tech Explorations, Inc.
DRILLING METHOD : Hollow-Stem Auger
WATER LEVELS :
START :
LOGGER : B. Long

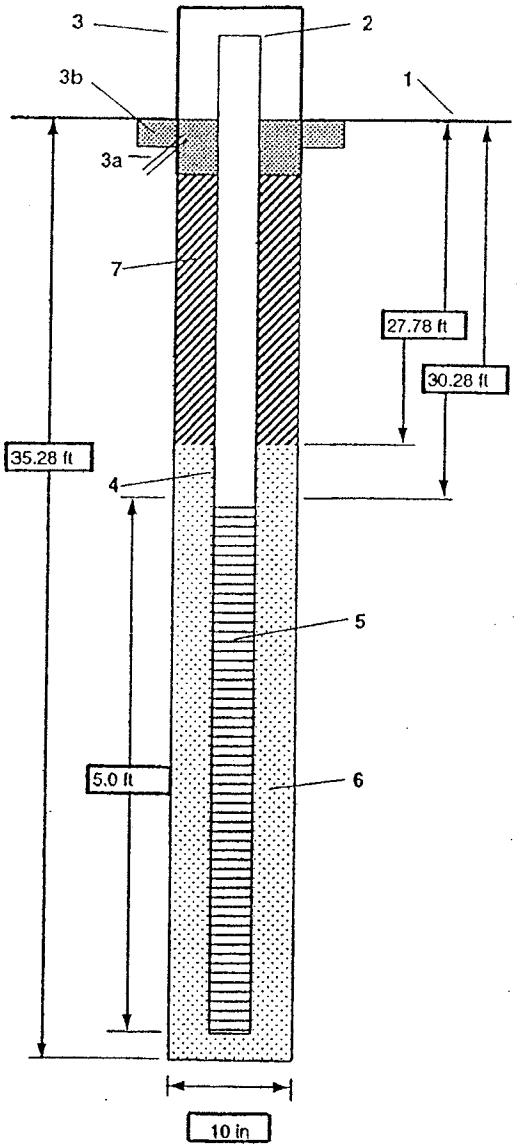
DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL, #	GRAPHIC LOG	SOIL DESCRIPTION (SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.)	COMMENTS
			Grassy field	
			Cuttings: CLAY (CL), gray, moist, medium stiff	
5		CL	CLAY w/silt (CL), mottled reddish-brown, medium stiff, moist, trace organics, sand-sized iron nodules, small root channels	
10			As above, but stiffer, moist to wet; darker gray beginning @ 12'	
15		CL	CLAY with silt and very fine sand (CL), gray , moist, stiff, few root channels, moist	
20				

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
159636.A0.03	MW-20B (L40377)	SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT : Riverbend Landfill LOCATION : McMinnville, Oregon Installation date(s): 10/02/2000
ELEVATION : 127.10 ft msl DRILLING CONTRACTOR : Geo-Tech Explorations, Inc.
DRILLING METHOD AND EQUIPMENT USED : B-59 Mobile Hollow-Stem Auger (6.25" ID)
WATER LEVELS : START : END : LOGGER : B. Long



1- Ground elevation at well	127.10 ft msl
2- Top of casing elevation	129.72 ft msl
3- Wellhead protection cover type	Above-ground monument
a) drain tube?	No
b) concrete pad dimensions	Approx. 2' x 2'
4- Diameter/type of well casing	2" Sch. 40 PVC
5- Type/slot size of screen	2" Sch.40 PVC / 0.010 slot
6- Type screen filter	Silica sand (10-20)
a) Quantity used	7 -50 lb bags
7- Type of seal	Bentonite chips
a) Quantity used	26 - 50 lb bags
b) Top of seal	Concrete

Development method	Pump & surge
Development time	Approx. 4 hours
Estimated purge volume	248 gallons

Comments Well screen length is nominal; actual screened portion is approx. 6 inches shorter than labeled length

CH2MHILL

MW-20B

SOIL BORING LOG

PROJECT : Riverbend Landfill
LOCATION : McMinnville, Oregon
DATE: 09/30/2000
ELEVATION : 127.10 ft msl
DRILLING CONTRACTOR: Geo-Tech Explorations, Inc.
DRILLING METHOD : Hollow-Stem Auger
WATER LEVELS :
START :
LOGGER : B. Long

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL, #	GRAPHIC LOG	SOIL DESCRIPTION (SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.)	COMMENTS
			Grassy field	
			Cuttings: CLAY (CL), gray, moist, medium stiff.	
5			CLAY w/silt (CL), mottled reddish-brown, medium stiff, moist, trace organics, sand-sized iron nodules, small root channels,	
		CL		
10			As above, but stiffer, moist to wet; darker gray beginning @ 12'	
15			CLAY with silt and very fine sand (CL), gray , moist, stiff, few root channels, moist	
		CL		
20				
			fine root channels to 24 feet.	
25			Poorly graded fine GRAVEL with sand and silt, yellow-brown to red-brown, wet, very dense, oxidized weathered gravel, occasional interbeds of gray plastic clay (GP)	
30		GP		
	S-14			
35	S-15			

CH2MHILL

BORING NUMBER
MW-20B

SOIL BORING LOG

PROJECT : Riverbend Landfill
LOCATION : McMinnville, Oregon
DATE: 09/30/2000
ELEVATION : 127.10 ft msl
DRILLING CONTRACTOR: Geo-Tech Explorations, Inc.
DRILLING METHOD : Hollow-Stem Auger
WATER LEVELS :
START :
LOGGER : B. Long

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL, #	GRAPHIC LOG	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS
		GC	GRAVEL with clay, reddish-brown, moist to wet, dense, matrix supported, basalt gravel clasts	
40				End of boring @ 40 ft

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	P-04A
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	1 OF 2
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	139.00'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	32.50'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	10/28/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
95	3.5							**0 to 12.75 feet:** SILTY CLAY (CL), dark brown (7.5YR 3/2), patchy lenses of shades of brown and gray; medium plasticity fines; no macro pores; hard; damp. (FILL MATERIAL)
	4.5							
	4.5							
	3.0							
100	2.0			5				
	1.5							
	2.5							@ 6.5 feet: wood chips, 2-inch black organic layer.
	3.0							@ 6.7 feet: color changes to dark greenish gray (5GY 4/1) mixed with light olive brown mottling; changes to a medium to high plasticity clay; no pores, no bedding structure.
	3.0							
100	2.5			10				
	2.75							
	2.5							
	4.5		▼ 1/5/94					**12.75 to 29.0 feet:** CLAYEY SILT (ML), brown (10YR 4/3), slight olive tint; low to medium plasticity fines; abundant macro pores (open), small 1/16- to 1/32-inch-diameter, some larger 1/8-inch vertical, trace of roots; very stiff; moist. (NATIVE SOIL)
	2.5							
100	2.0			15				@ 12.75 to 14.75 feet: dark grayish brown.
	2.5							@ 14.5 feet: moist.
	1.5							
	2.0		▽ 10/26/93					@ 17.5 feet: wet (large macro pore approximately half full with free water) and along poorly developed granular soil peds.
	1.5							@ 19.0 feet: minor interbedded CLAYEY SANDS (SC) and SILTY SANDS (SM) lenses.
100				20				

REMARKS

Drilled with 8-inch O.D. (4.25-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	P-04A
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	2 OF 2
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	139.00'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	32.50'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	10/28/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
	1.75							**12.75 to 29.0 feet: CLAYEY SILT (ML)**, continued.
	2.0							@ 20.0 feet: slight mix of light, indistinct reddish brown and tan brown mottling, minor horizontal parting (weakly developed), trace fine sands, well rounded, spherical, minor amounts of mica, abundant (approximately 5 to 10 per square inch) macro pores; stiff; moist.
	1.0							
	1.5							
	1.5							
100	1.5			25				@ 24.5 to 26.5 feet: well developed 3/8- to 1/2-inch-thick platy horizontal soil partings.
	1.5							
	1.5							
	0.5							@ 27.5 feet: color changes to dark greenish gray (5G 4/1) with 50 percent indistinctly mottled light olive brown mottling (2.5Y 5/3), occurring at separate 0.3- to 0.5-foot-thick layers.
	1.0							
100	1.5			30				**29.0 to 32.5 feet: SILTY CLAY (CL)**, dark greenish gray (5GRY 4/1); medium to high plasticity fines; glazed (glistening) soil ped partings, irregular soil partings, stiff; wet.
	1.0							
	1.0							
								BORING TERMINATED AT 32.5 FEET.
				35				
				40				

REMARKS

Drilled with 8-inch O.D. (4.25-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

EMCON NORTHWEST

WELL DETAILS

CLIENT Riverbend Landfill Company, Inc.

PROJECT NUMBER 0258-001.28

PROJECT NAME Additional Hydrogeologic Inv.

LOCATION McMinnville, Oregon

WELL PERMIT NO. 59130

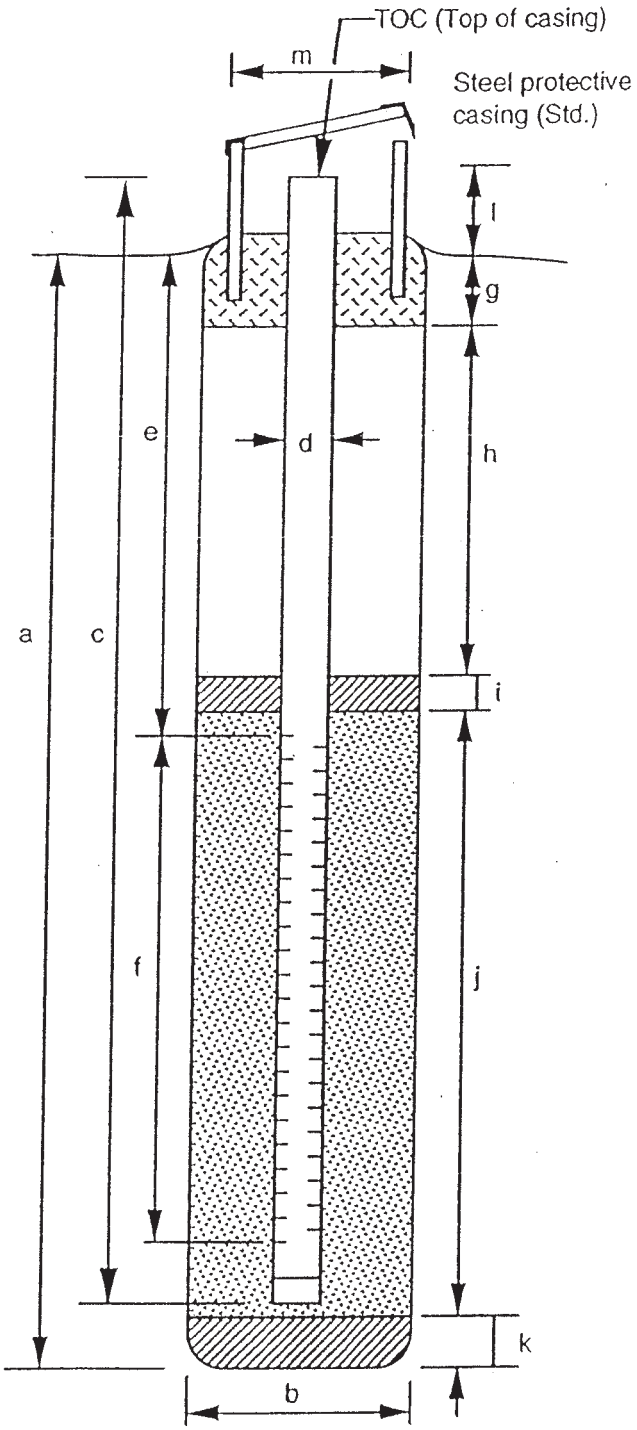
BORING / WELL NO. P-04A

TOP OF CASING ELEV. 141.15

GROUND SURFACE ELEV. 139.0

DATUM Feet-Mean Sea Level

INSTALLATION DATE 10/28/93



EXPLORATORY BORING

a. Total depth 32.5 ft.

b. Diameter 8 in.

Drilling method Hollow Stem Auger

WELL CONSTRUCTION

c. Total casing length (+2.2 to 29.6) 31.8 ft.

Material Schedule 40 PVC

d. Diameter 2 in.

e. Depth to top perforations 19.3 ft.

f. Perforated length 9.5 ft.

Perforated interval from 19.3 to 28.8 ft.

Perforation type Machine Slotted

Perforation size 0.010 Inches

g. Surface seal (0 to 2.0) 2.0 ft.

Material Concrete

h. Backfill N.A. ft.

Material N.A.

i. Seal (2.0 to 15.9) 13.9 ft.

Material Bentonite

j. Gravel pack 13.9 ft.

Gravel pack interval from 15.9 to 29.8 ft.

Material 10-20 Gradation Sand

k. Bottom seal/fill (29.8 to 32.5) 2.7 ft.

Material Bentonite

l. Casing stickup 2.2 ft.

m. Protective casing diameter 6.5 in.

Prepared by: Craig Fanshier

Rev. 7/23/91

Ventura Mac 4

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	P-04B
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	1 OF 4
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	139.00'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	75.80'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	11/09/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
9.2	>4.5							0 to 12.5 feet: SILTY CLAY (CL), dark reddish brown (5YR 3/3); medium plasticity fines; hard; damp. (FILL)
	>4.5							
	4.0							
	>4.5							
100	3.5							
	3.5			5				
	2.5							
	3.0							@ 7.5 feet: color changes to dark olive gray (5Y 3/2); slight odor.
	2.5							
80		32						@ 9.0 feet: very stiff.
				10				
100	1.5							
	3.5							12.5 to 21.0 feet: CLAYEY SILT (ML), very dark grayish brown (10YR 3/2); very abundant small macro pores and some large vertical macro pores, some very fine roots; very stiff; damp.
	2.5							
94			1/5/94					
	2.0			15				@ 14.0 feet: moist.
	3.0							@ 15.5 feet: color changes to dark brown (7.5YR 3/2).
	2.0		11/9/93					@ 16.7 feet: wet.
	1.5							@ 17.0 feet: approximately 10 percent gray mottling, as rinds around vertical macro pores.
	2.0							@ 17.0 to 21.0 feet: approximately 10 percent light reddish brown mottling, approximately 10 percent black mottling.
100	2.0			20				

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. Bedrock was cored with NX (3.5-inch O.D.) diamond core. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	P-04B
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	2 OF 4
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	139.00'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	75.80'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	11/09/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
	2.5							12.5 to 21.0 feet: CLAYEY SILT (ML), continued.
	2.5							21.0 to 30.0 feet: SILT (ML), light yellowish brown (2.5Y 6/3); low plasticity fines; less macro pores than above (approximately 3 to 5 per square inch), no large ones; some 1/4-inch platy varves; stiff; wet.
	2.5							
	2.0							
67		17						
				25				
100	1.0							@ 25.5 to 29.0 feet: approximately 1- to 3-inch-thick bands of grayish coloration.
	2.5							@ 27.0 to 29.0 feet: abundant small bedding structures approximately 1/16- to 1/8-inch-thick, appears to have more clay than 13.0 to 25.0 feet zone above.
	2.5							
	2.5							
100								@ 29.0 feet: approximately 50 percent gray and 50 percent brown.
	1.0			30				30.0 to 37.0 feet: SILTY CLAY (CL), dark bluish gray (5B 4/1); medium to high plasticity fines; approximately 1 to 2 macro pores per square inch (small), some vertical root traces; stiff; wet.
	1.5							@ 32.0 feet: slightly harder/sticky drilling, smooth, glassy, glazed soil, ped surface.
100		21						
				35				
100	1.25							
	1.25							
	1.0							37.0 to 38.0 feet: CLAYEY SAND (SC), dark bluish gray (5B 4/1), with 50 percent large oval shaped olive brown mottling; 20 to 25 percent low to medium plasticity fines; 75 to 80 percent fine sand, angular moderately well sorted; minor brown root hairs; appears medium, continues.
100								
				40				

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. Bedrock was cored with NX (3.5-inch O.D.) diamond core. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	P-04B
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	3 OF 4
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	139.00'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	75.80'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	11/09/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								37.0 to 38.0 feet: CLAYEY SAND (SC), continued: dense; moist. Unit grades into the sand below.
								38.0 to 39.0 feet: SAND (SP), dusky red (G5YR 3/3); 5 percent low plasticity fines; 95 percent fine to medium sand, angular; appears medium dense; moist.
60								39.0 to 41.0 feet: CLAYEY SAND (SC), light tannish brown; 30 percent low to medium plasticity fines; 70 percent fine sand; appears medium dense; moist.
				45				41.0 to 45.0 feet: SAND (SP), and GRAVELLY SAND (SP), dusky red (10R 3/3); little to no fines; 70 to 90 percent fine to coarse sand (F:M:C=1:3:2); 10 to 30 percent gravels (F:C=3:1); appears medium dense; wet. @ 41.0 to 42.5 and 42.5 to 44.0 feet: two distinct fining upwards sequences, each grades from a fine sand at the top to a gravelly sand at the bottom. @ 42.5 feet: 1 inch sand lense, color changes to brown (7.5YR 4/3). @ 44.0 feet: large 2 to 3 inch gravels.
80								
				50				
								45.0 to 55.0 feet: CLAYEY GRAVEL (GC), dark yellowish brown (10YR 4/3); 20 percent low to medium plasticity fines (as matrix), sticky; 20 to 30 percent SAND (F:M:C=1:1:1); 40 to 50 percent gravels (F:C=1:2), rounded, matrix supported; appears dense; wet.
20								
				55				@ 55.0 feet: drillers note less gravels, hard dense drilling.
								55.0 to 59.5 feet: SILTY SAND (SM), inferred from drilling action.
100		71						
				60				59.5 to 65.0 feet: SANDY SILT (SM), continues.

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. Bedrock was cored with NX (3.5-inch O.D.) diamond core. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	P-04B
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	4 OF 4
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	139.00'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	75.80'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	11/09/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
86								**59.5 to 65.0 feet: SANDY SILT (SM)**, continued: dark greenish gray (5G 4/1); 70 to 75 percent low plastic fines; 25 to 30 percent fine sand; moderately well sorted; 3 percent wood fragments, several 1/4 by 3/8-inch; brown leaf fossils, dense; wet.
100								Note: very similar to the lower section of MW-7B. @ 64.0 to 66.0 feet: very hard drilling.
				65				**65.0 to 75.8 feet: BASALT**, olive gray (5Y 3/2) (GSA rock color chart); medium grain; weathered zone approximately 1-inch-thick, drilled with hollow stem auger to 65.8 feet. @ 65.8 to 68.5 feet: abundant fracture filling, quartz veining, zeolites.
				70				
				75				**BORING TERMINATED AT 75.8 FEET.**
				80				

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. Bedrock was cored with NX (3.5-inch O.D.) diamond core. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

EMCON NORTHWEST

WELL DETAILS

CLIENT Riverbend Landfill Company, Inc.

PROJECT NUMBER 0258-001.28

PROJECT NAME Additional Hydrogeologic Inv.

LOCATION McMinnville, Oregon

WELL PERMIT NO. 59135

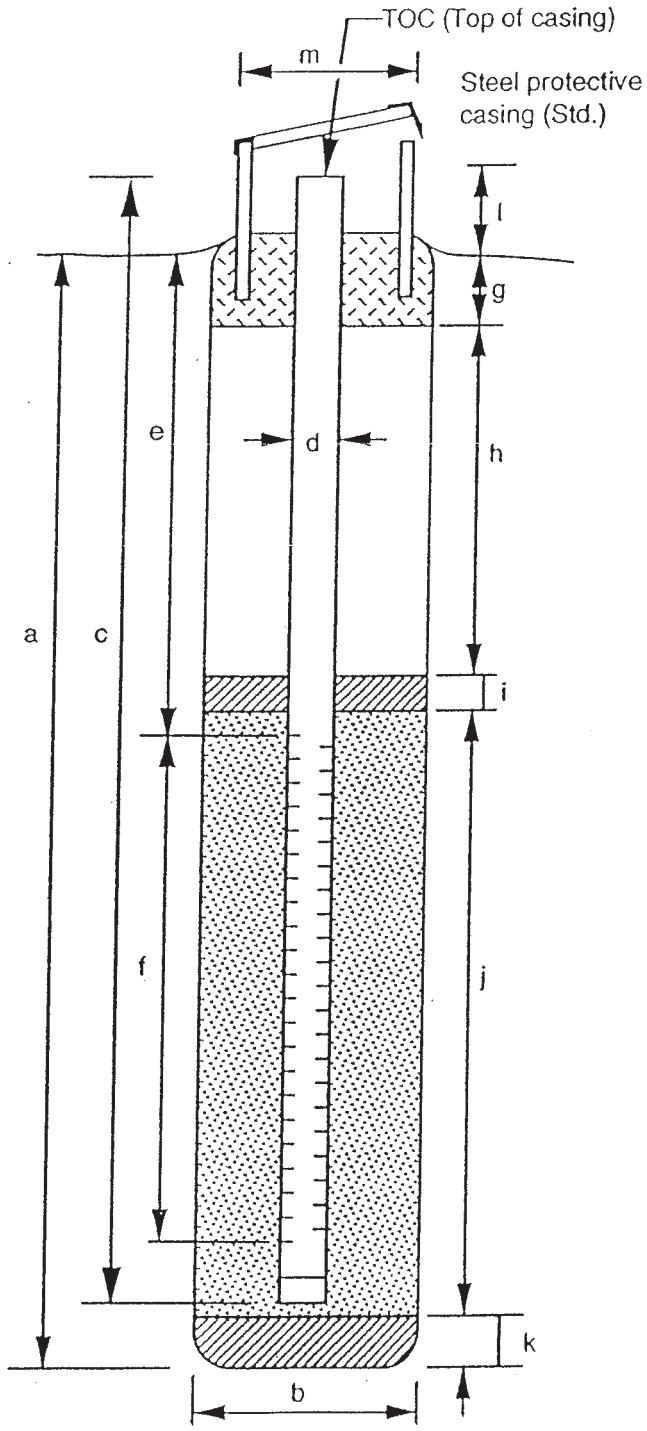
BORING / WELL NO. P-04B

TOP OF CASING ELEV. 141.65

GROUND SURFACE ELEV. 139.0

DATUM Feet-Mean Sea Level

INSTALLATION DATE 11/10/93



EXPLORATORY BORING

a. Total depth 75.8 ft.

b. Diameter 10 in.

Drilling method Hollow Stem Auger

WELL CONSTRUCTION

c. Total casing length (+2.7 to 52.6) 55.3 ft.

Material Schedule 40 PVC

d. Diameter 2 in.

e. Depth to top perforations 42.3 ft.

f. Perforated length 9.5 ft.

Perforated interval from 42.3 to 51.8 ft.

Perforation type Machine Slotted

Perforation size 0.010 Inches

g. Surface seal (0 to 2.0) 2.0 ft.

Material Concrete

h. Backfill N.A. ft.

Material N.A.

i. Seal (2.0 to 39.0) 37.0 ft.

Material Bentonite

j. Gravel pack 13.4 ft.

Gravel pack interval from 39.0 to 52.4 ft.

Material 10-20 Gradation Sand

k. Bottom seal/fill (52.4 to 75.8) 23.4 ft.

Material Bentonite

l. Casing stickup 2.7 ft.

m. Protective casing diameter 6.5 in.

Centralizers at 15.0 and 41.0 feet bgs.

Prepared by: Craig Fanshier

Ventura .mac 4 Rev. 7/23/91

LOG OF EXPLORATORY BORING

PROJECT NAME	**North Poplar Tree Farm**	BORING NO.	**P-05A**
LOCATION	**Riverbend Landfill, McMinnville, Oregon**	PAGE	**1 of 2**
DRILLED BY	**GeoTech Explorations, Inc.**	APPROX. GROUND ELEV.	**138.60**
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**20.0'**
LOGGED BY	**Craig D. Fanshier, R.G.**	DATE COMPLETED	**10/13/05**

SAMPLE NUMBER (SAMPLE METHOD)	RECOVERY (feet)	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
	4.2							**0 to 6.8 feet: CLAYEY SILT (ML)**; brown (10YR 4/3); 100 percent non to low plasticity fines; platy soil peds; trace macro pores; damp.
	4.0			5				
								6.8 to 17.3 feet: SILTY CLAY (CL); brown (10YR 4/3) with dark brown mottling (6.8 to 7.9 feet); 100 percent low plasticity fines; damp to moist.
								@ 8.0 feet: mostly clay.
	4.8			10				@ 10.0 feet: dark brown, soft, moist.
								@ 11.0 feet: root traces.
								@ 12.0 feet: evenly colored brown.
	4.2			15				@ 15.0 feet: wet.
								@ 15.8 to 16.2 feet: SILTY SAND (wet).
								@ 16.8 to 17.2 feet: SILTY SAND to CLAYEY SILT (ML); (wet).
								17.3 to 20.0 feet: SILTY CLAY (CL) to CLAYEY SILT (ML); dark greenish gray (5G 4/1); damp to moist.
				20				Bottom of boring = 20.0 feet.
				25				See Page 2 for Well Completion Details.

REMARKS

Geoprobe boring was advanced and soil samples were collected with a 5-foot-long, 2 1/6-inch outside-diameter soil macro-sampler. The borehole was widened to 3.5 inches by advancing a separate geoprobe casing. A 1-inch i.d. schedule 40 PVC piezometer was constructed in the boring using a prepacked 0.010-inch slot well screen and 20-40 sand. A 10-20 sand pack was added to the borehole annulus and topped with bentonite casing seal.

Shaw™ Environmental, Inc.

LOG OF EXPLORATORY BORING

PROJECT NAME	**North Poplar Tree Farm**	BORING NO.	**P-05A**
LOCATION	**Riverbend Landfill, McMinnville, Oregon**	PAGE	**2 of 2**
DRILLED BY	**GeoTech Explorations, Inc.**	APPROX. GROUND ELEV.	**138.60**
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**20.0'**
LOGGED BY	**Craig D. Fanshier, R.G.**	DATE COMPLETED	**10/13/05**

SAMPLE NUMBER (SAMPLE METHOD)	RECOVERY (feet)	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				30				**WELL COMPLETION DETAILS** 0 to 9.7 feet: 1-inch-diameter, Schedule 40 PVC piezometer. 9.7 to 19.5 feet: 1-inch-diameter, prepacked Schedule 40 PVC well screen with 0.010-inch machined slots and 1-inch-diameter threaded end cap. 0 to 0.5 foot: Concrete. 0.5 to 7.5 feet: Bentonite chips hydrated with potable water. 7.5 to 20.0 feet: 10-20 Colorado Silica Sand. PVC Elevation: 140.74 Northing: 2875.1 Easting: 3612.4
				35				
				40				
				45				
				50				

REMARKS

Geoprobe boring was advanced and soil samples were collected with a 5-foot-long, 2 1/6-inch outside-diameter soil macro-sampler. The borehole was widened to 3.5 inches by advancing a separate geoprobe casing. A 1-inch i.d. schedule 40 PVC piezometer was constructed in the boring using a prepacked 0.010-inch slot well screen and 20-40 sand. A 10-20 sand pack was added to the borehole annulus and topped with bentonite casing seal.

Shaw™ Environmental, Inc.

LOG OF EXPLORATORY BORING

PROJECT NAME	**North Poplar Tree Farm**	BORING NO.	**P-06A**
LOCATION	**Riverbend Landfill, McMinnville, Oregon**	PAGE	**1 of 2**
DRILLED BY	**GeoTech Explorations, Inc.**	APPROX. GROUND ELEV.	**129.30**
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**20.0'**
LOGGED BY	**Craig D. Fanshier, R.G.**	DATE COMPLETED	**10/13/05**

SAMPLE NUMBER (SAMPLE METHOD)	RECOVERY (feet)	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
	2.7							**0 to 20 feet: CLAY (CL)**; very dark gray brown (10YR 3/2), 30 to 50 percent mottling; 100 percent medium plastic fines (70 percent clay, 30 percent silt); damp; with root traces, root remains.
	5.0			5				@ 5.0 feet: CLAY (CL); very dark gray (10YR 3/1), 20 percent reddish mottles (2 to 5 mm); medium to high plasticity fines; damp to moist.
								@ 8.0 feet: trace (but not very many) small (<1/32") macro pores.
	5.0			10				@ 10.0 to 15.0 feet: high plasticity, very stiff.
								@ 13.0 feet: some gray to greenish gray mottling.
								@ 14.3 feet: color changes to dark greenish gray (5G 4/1).
	1.5			15				@ 15.0 feet: medium plasticity, ~20 to 30 percent silt; soft; damp to moist; probably wet (slow recharge).
				20				Bottom of boring = 20.0 feet.
				25				See Page 2 for Well Completion Details.

REMARKS

Geoprobe boring was advanced and soil samples were collected with a 5-foot-long, 2 1/6-inch outside-diameter soil macro-sampler. The borehole was widened to 3.5 inches by advancing a separate geoprobe casing. A 1-inch i.d. schedule 40 PVC piezometer was constructed in the boring using a prepacked 0.010-inch slot well screen and 20-40 sand. A 10-20 sand pack was added to the borehole annulus and topped with bentonite casing seal.

Shaw™ Environmental, Inc.

LOG OF EXPLORATORY BORING

PROJECT NAME	**North Poplar Tree Farm**	BORING NO.	**P-06A**
LOCATION	**Riverbend Landfill, McMinnville, Oregon**	PAGE	**2 of 2**
DRILLED BY	**GeoTech Explorations, Inc.**	APPROX. GROUND ELEV.	**129.30**
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**20.0'**
LOGGED BY	**Craig D. Fanshier, R.G.**	DATE COMPLETED	**10/13/05**

SAMPLE NUMBER (SAMPLE METHOD)	RECOVERY (feet)	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				30				**WELL COMPLETION DETAILS** 0 to 9.7 feet: 1-inch-diameter, Schedule 40 PVC piezometer. 9.7 to 19.5 feet: 1-inch-diameter, prepacked Schedule 40 PVC well screen with 0.010-inch machined slots and 1-inch-diameter threaded end cap. 0 to 0.5 foot: Concrete. 0.5 to 7.5 feet: Bentonite chips hydrated with potable water. 7.5 to 20.0 feet: 10-20 Colorado Silica Sand. PVC Elevation: 131.58 Northing: 2566.2 Easting: 3363.7
				35				
				40				
				45				
				50				

REMARKS

Geoprobe boring was advanced and soil samples were collected with a 5-foot-long, 2 1/6-inch outside-diameter soil macro-sampler. The borehole was widened to 3.5 inches by advancing a separate geoprobe casing. A 1-inch i.d. schedule 40 PVC piezometer was constructed in the boring using a prepacked 0.010-inch slot well screen and 20-40 sand. A 10-20 sand pack was added to the borehole annulus and topped with bentonite casing seal.

Shaw™ Environmental, Inc.

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LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	EW- 1
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	1 OF 5
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	148.40'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	89.20'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	11/11/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
100	>4.5							**0 to 22.0 feet: CLAYEY SILT (ML)** brown to dark yellowish brown (10YR 4/3 to 4/1); low plasticity fines; trace fine sand; abundant small macro pores (5 to 10 per inch); very stiff to hard; damp.
	>4.5							@ 0 to 13.0 feet: very abundant macro pores (1/16 to 1/18 inch); mostly horizontal, 20 percent vertical, open.
	3.0							@ 0 to 21.0 feet: minor (5 to 15 percent) fine sand lenses mixed in with the clayey silt as 2- to 4-inch-thick zones, some contain less fines, contacts are gradational.
100	2.5							
				5				
	2.5							
	2.5							
	2.0							@ 8.0 to 11.0 feet: 5 to 10 percent fine sand.
100	2.0							
	2.0			10				
	1.5							
	1.5							
	1.5							@ 13.0 feet: moist; decrease in abundance of macro pores (2 to 3 per inch).
100			▽ 11/11/93					@ 14.0 feet: wet.
	1.5			15				
	1.5							@ 16.0 to 16.5 feet: 1/4- to 3/8-inch-thick varves.
	1.5							@ 17.0 feet: 10 to 20 percent black organic material in a 3-inch-thick zone.
	1.0							@ 19.0 to 21.0 feet: varves (1/4 to 3/8 inch); several sand lenses, alternating soft and firm zones; wet.
100	0.25							
				20				

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) hollow stem auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. Bedrock was cored with the 5-foot-long split barrel core. The boring was backfilled with bentonite. See explanation for definition of symbols.

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	EW- 1
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	2 OF 5
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	148.40'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	89.20'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	11/11/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
	1.0							**0 to 22.0 feet: CLAYEY SILT (ML)**, continued.
	2.5							
	2.0							**22.0 to 24.5 feet: SILTY CLAY (CL)**, dark greenish gray (5GY 4/1); medium plasticity fines; varves (1/8- to 3/8-inch-thick); minor amounts of very small to small macro pores, some macro pores are oriented vertically, open with an olive brown lining; very stiff to hard.
	4.0							
100	1.0							
	2.5			25				**24.5 to 36.0 feet: CLAYEY SILT (ML)**, brown to dark yellowish brown (10YR 4/3 to 4/4); low plasticity fines; trace fine sand; abundant small macro pores (5 to 10 per inch); medium stiff to very stiff.
	1.0							
	4.5							@ 27.0 feet: driller notes harder drilling, alternating lenses of SILTY SAND (SM) and minor SILTY CLAY (CL) lenses up to 0.4 foot thick.
	1.0							
	0.5							
100								
	1.5			30				
								@ 31.0 to 36.0 feet: variable clay content.
	4.0							
	4.0							
100								
	3.5			35				
	2.0							**36.0 to 40.5 feet: SILTY CLAY (CL)**, dark greenish gray (5G 4/1); medium to high plasticity fines; some black organics, weak clay deposition features (smooth blocky soil peds); very stiff; wet.
	2.5							
	2.0							
	2.5							
100								
	2.5			40				

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) hollow stem auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. Bedrock was cored with the 5-foot-long split barrel core. The boring was backfilled with bentonite. See explanation for definition of symbols.

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	EW- 1
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	3 OF 5
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	148.40'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	89.20'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	11/11/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
	2.0							**36.0 to 40.5 feet: SILTY CLAY (CL)**, continued.
								40.5 to 42.0 feet: GRAVELLY CLAY (GC), dark greenish gray (5G 4/1); 50 percent medium plasticity fines; 20 percent fine to medium angular sand; 30 percent gravels (F:C = 1:1), mostly 1/2 to 3/4 inch, rounded, mostly basalt, possible tuffaceous reworked sediments; appears medium dense; wet.
60								**42.0 to 49.5 feet: SILTY GRAVEL (GM)**, dark greenish gray (5G 4/1); 10 to 20 percent low to medium plasticity fines; 10 to 20 percent fine to coarse sand, angular, poorly sorted; 60 to 70 percent fine to coarse gravels (F:C = 1:1), mostly matrix supported; some clayey gravel lense 0.1- to 0.4-foot-thick (very sticky clayey matrix); appears medium dense; wet.
				45				@ 44.0 to 47.0 feet: 30 to 40 percent fines, 20 percent sand, 50 percent gravels, very sticky clayey matrix.
40								@ 45.0 feet: color changes to brown (5G 4/1).
				50				**49.5 to 71.0 feet: SANDY GRAVEL (GP)**, dark greenish gray (5G 4/1); 5 percent low plasticity fines; 35 percent; fine to coarse sand (F:C = 1:2) poorly sorted; 60 percent gravels (F:C = 1:1), up to 3 inches, mostly 3/8 to 1/2 inch, rounded, basalt; appears medium dense; wet.
80								
				55				
								@ 57.5 feet: 1-inch-thick lense of tuffaceous sands.
88								
				60				

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) hollow stem auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. Bedrock was cored with the 5-foot-long split barrel core. The boring was backfilled with bentonite. See explanation for definition of symbols.

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	EW- 1
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	4 OF 5
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	148.40'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	89.20'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	11/11/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								49.5 to 71.0 feet: SANDY GRAVEL (GP), continued.
								@ 61.0 feet: 5-inch-thick clayey silt lense.
								@ 61.0 to 63.5 feet: 20 percent fines; dense.
80								
				65				@ 65.0 to 69.0 feet: 10 to 20 percent low plasticity fines, appears dense; very hard drilling.
80								
				70				
	2.5							**71.0 to 72.0 feet: GRAVELLY SAND (SP),** 60 to 70 percent medium to coarse sand; 30 to 40 percent fine gravel; medium dense; wet; gradational contact.
								@ 71.5 feet: 5 to 10 percent brown wood fragments.
100								**72.0 to 75.0 feet: SILTY CLAY (CL),** dark greenish gray (5BG 4/1); medium plasticity fines; stiff; wet. Grades to a clayey silt with sand.
				75				@ 74.5 feet: horizontal bedding with tan layers.
								75.0 to 76.0 feet: SILTY SAND (SM), dark greenish gray (5BG 4/1); 20 to 30 percent low plasticity fines; 70 to 80 percent fine to medium sand.
								76.0 to 80.0 feet: SANDY GRAVEL (GP), dark greenish gray (5G 4/1); 20 to 40 percent poorly sorted, 5 percent low plasticity fines. Continued on next page.
100								
				80				

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) hollow stem auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. Bedrock was cored with the 5-foot-long split barrel core. The boring was backfilled with bentonite. See explanation for definition of symbols.

LOG OF EXPLORATORY BORING

PROJECT NAME	Additional Hydrogeologic Investigation	BORING NO.	EW- 1
LOCATION	Riverbend Landfill; McMinnville, Oregon	PAGE	5 OF 5
DRILLED BY	Geo-Tech Explorations, Inc.	GROUND ELEV.	148.40'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	89.20'
LOGGED BY	Craig D. Fanshier	DATE COMPLETED	11/11/93

RECOVERY PERCENT	POCKET PENETRO-METER (Tons/SF)	PENETRA-TION (Blows/Ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
100	3.5							**76.0 to 80.0 feet: SANDY GRAVEL (GP),** continued: fine to coarse sand (F:C = 1:2); 60 percent gravels (F:C = 1:1) up to 3 inches; mostly 3/8 to 1/2 inch, rounded; basalt.
	4.0							@ 77.5 feet: 2 inch silt lense.
	4.5							@ 78.5 feet: several angular rock fragments.
	4.0							**80.0 to 84.0 feet: SILTY CLAY (CL),** dark greenish gray (5BG 4/1); 80 percent low to medium plasticity fines; 20 percent sands; 10 percent fine gravels; very stiff to hard; moist; some high angle fracture planes, relic texture (altered tuffaceous sediments?).
100				85				**84.0 to 89.2 feet: BASALT,** gray; fine to medium grained; localized small sub vertical fractures filled with quartz and zeolites; low hardness; deeply weathered.
								BORING TERMINATED AT 89.2 FEET.
				90				
				95				
				100				

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) hollow stem auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. Bedrock was cored with the 5-foot-long split barrel core. The boring was backfilled with bentonite. See explanation for definition of symbols.

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT10-01

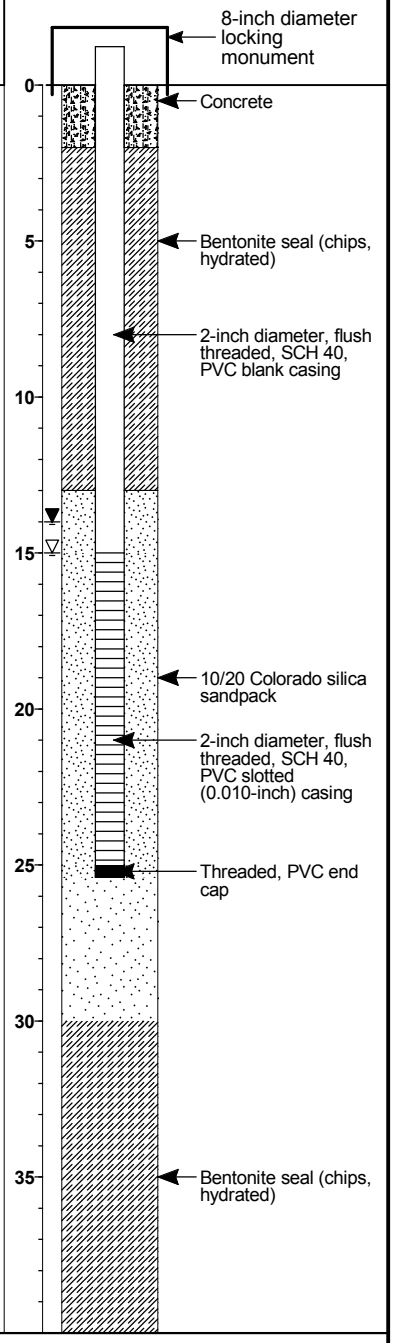
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04210010.00

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. and 300 lb. hammers used, see notes at end of log; 30-inch drop). NWJ rods used.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0		1-1	---		ML		Surface: natural ground surface (grass)
1								
2	5		1-2	3 3 5	0.5			SILT (ML), light olive brown (2.5Y 5/3) with some orange brown oxide (iron) mottling, moist to wet, firm, trace clay, low plasticity
			1-3	---				
3	10				0.75			At 10.0 feet (bottom of Shelby tube sample), FINE SANDY SILT (ML), dark yellowish brown (10YR 4/6), moist, sand 10-20 percent, slightly micaceous
4								
5	15		1-4	3 2 4	0.25	CL ML		- At 15 feet, same as above but wet At 15.8 feet, 2-inch thick CLAY (CL) seam, very dark gray (5Y 3/1), wet, apparent soft consistency, high plasticity
			1-5	---				At 16.0 feet, SILT (ML), very dark gray (5Y 3/1), wet, firm, faintly micaceous, low to medium plasticity
6	20				0.75			- At 20.0 feet (bottom of Shelby tube sample), same silt at above
7			1-6	5 5 5	0.25	ML		Thinly bedded SILT (ML) and CLAYEY SILT (ML), very dark gray (5Y 3/1), moist, stiff, 2- to 4-inch thick beds with varying clay content from 0 to 10-20 percent, moist, stiff, with two clay lenses (1.5 inch thick)
8	25		1-7	---		CL		At 27.5 feet (bottom of Shelby tube sample), SILTY CLAY (CL), very dark gray (5Y 3/1), moist, medium to high plasticity
9	30		1-8	0 3 7	1.5			CLAY (CL), dark gray (5Y 4/1), moist, very soft, massive - At 30.7 feet, sharp color change to very dark gray (5Y 3/1) with greenish tint, damp to moist, stiff, faintly micaceous, more apparent firmness than above, medium to high plasticity
10								
11	35		1-9	0 3 4	1.0			- Same as above but greenish gray, firm, faint oxide (iron) mottling
			1-10	---				
12	40							Driller reports harder push last approximately 4 inches of Shelby tube sample No. 1-10

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Mud Rotary**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **9/9/10**
Date Ended: **9/10/10**
Boring Diameter: **5.9" (to 26.0 ft.); 4.9" (from 26.0 - 66.5 ft.)**
Elevation: **143.8 ft.**
Depth to Water: **14.0 ft.**
Total Depth: **66.5 ft.**

STANDARD_LOG RLF_HSC GEOTECHNICAL BOREHOLE LOGS_V0.3.GPJ STD_LOG.GDT 2/23/11

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT10-01

Riverbend Landfill Company

JOB NUMBER: 04210010.00

Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
40		1-11	12 15 22	1.0	CL	At 40.0 feet, CLAY (CL) with fine sand and gravel, mottled light olive brown (2.5Y 5/3) and orange brown (iron oxide), moist, hard, very weathered appearance, fine subrounded gravel 5-15 percent at top of sample, fine to coarse subrounded gravel 20-30 percent to 1-inch diameter at bottom 3 inches of sample
45		1-12	15 28 32		GC	SANDY, CLAYEY GRAVEL (GC), mottled very pale brown (10YR 7/4), light olive brown (2.5Y 5/3), and orange brown (iron oxide), wet, dense, fine to coarse sand (f:m:c = 20:40:40), fine to coarse subrounded gravel to 2-inch diameter, weathered appearance
50		1-13	15 21 33		SW/GW	GRAVELLY SAND/SANDY GRAVEL (SW/GW), dark yellowish brown (10YR 3/4), wet, dense, trace fines, weathered appearance, fine to coarse sand (f:m:c = 10:40:50), fine to coarse subrounded gravel to 2-inch diameter
55		1-14	13 20 22			- Same as above but black (7.5YR N2/), medium dense, fine to coarse sand (f:m:c = 30:40:30), fine to coarse gravel to 1-inch diameter, predominantly fine gravel
						At 59.0 feet, driller reports softer drilling
60		1-15	3 4 4		SP	SAND (SP), black (7.5YR N2/), wet, loose, very fine to fine sand, few scattered fine gravels to 1/4-inch diameter, trace medium grained sand, wood layer at least 4 inches thick observed at bottom of upper ring and top of lower ring samples - At 63.0 feet, driller reports harder drilling - At 65.0 feet, GRAVELLY SAND / SANDY GRAVEL (SW/GW), black (7.5YR N2/), wet, medium dense, fine to coarse sand (f:m:c = 40:30:30) but coarsening with depth, fine to coarse subrounded gravel to 1-inch diameter, predominantly fine gravel
65		1-16	9 14 17		SW/GW	

Total Depth = 66.5 feet

NOTES:

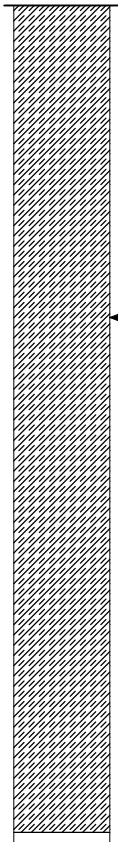
1. Drilled adjacent borehole with hollow stem augers to collect bulk soil cuttings sample from 0 to 5.0 feet.

2. Initially used 140 lb. hammer for sample collection; switched to 300 lb. hammer before collecting sample 1-12 at 45 feet and for remainder of borehole. Hammers not used for Shelby tube samples.

3. Pushed 36-inch Shelby tube sample 30 inches only.

4. Static groundwater level measured on September 13, 2010.

Completion Detail



SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT10-02

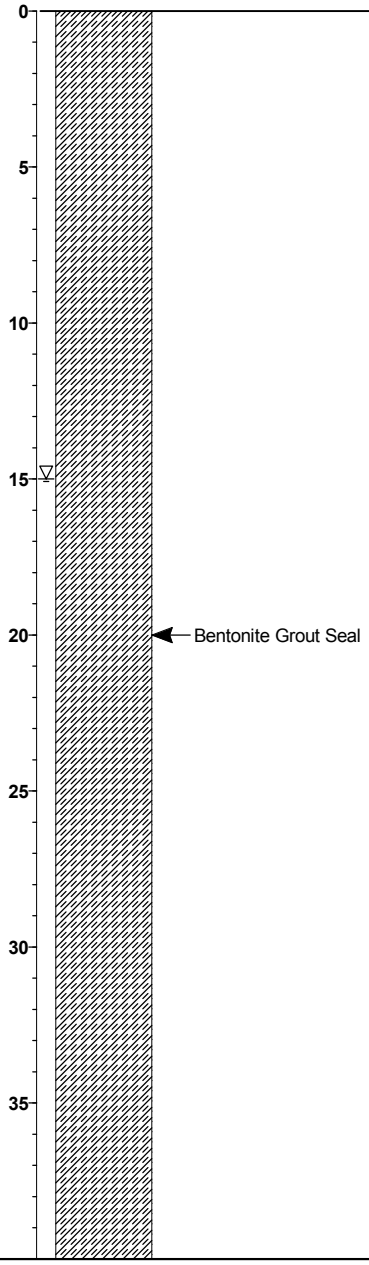
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04210010.00

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. and 300 lb. hammers used, see notes at end of log; 30-inch drop). NWJ rods used.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0		2-1	---		CL		Surface: natural ground surface (grass)
1								
2	5		2-2	2 3 5	1.0			CLAY (CL), mottled dark grayish brown (2.5Y 4/2) and orange brown (iron oxide), moist, firm, medium plasticity
3			2-3	---				
4	10				0.25			At 10.0 feet (bottom of Shelby tube sample), same as above
5	15		2-4	1 3 4	1.0			Becomes dark gray (2.5Y N4) with slight greenish tint, moist to wet
6	20		2-5	0	0.0	CH		CLAY (CH), dark gray (2.5Y N4), wet, soft, (sample 2-5 pushed by weight of rods), minor orange brown oxide (iron) mottling, scattered small (less than 1/4 inch) wood fragments; with 4-inch thick slightly silty clay lens, black (2.5YN2), moist, abundant wood fragments, organic odor
7			2-6	---	0.75	CL		
8	25							At 25.0 feet (bottom of Shelby tube sample), CLAY (CL), dark gray (2.5Y N4), medium plasticity
9			2-7	2 3 4	0.75			CLAY (CL), green-gray with slight oxide (iron) mottling, moist, firm, rare scattered fine gravel, minor scattered small wood fragments, medium plasticity
10	30							
11			2-8	---				Shelby tube sample 2-8 slightly damaged at bottom during sampling
12	35		2-9	4 7 13	1.75	SP SW		- At 35 feet, FINE SAND (SP) with clay, mottled yellowish brown (10YR 5/6) and light yellowish brown (2.5Y 6/3), moist to wet, medium dense, rare fine rounded gravels, grades with depth to trace or no fines - At 36.4 feet, sharp contact with FINE TO COARSE SAND (SW), wet, same color as above, medium dense, fine to coarse sand (f:m:c = 20:40:40), single rounded gravel to 3/4-inch diameter
	40							

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Mud Rotary**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **9/13/10**
Date Ended: **9/13/10**
Boring Diameter: **4.9 inches**
Elevation: **135.0 ft.**
Total Depth: **55.8 ft.**

STANDARD_LOG RLF_HSC GEOTECHNICAL BOREHOLE LOGS_V0.3.GPJ STD_LOG.GDT 2/23/11

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT10-02

Riverbend Landfill Company

JOB NUMBER: 04210010.00

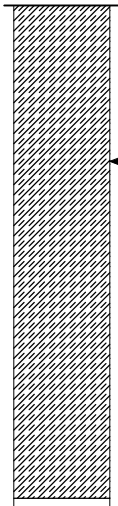
Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
40		2-10	12 22 37	3.25	SW	GRAVELLY SAND (SW), strong brown (7.5 YR 4/6), wet, very dense, very weathered appearance, fine to coarse sand (f:m:c = 40:40:20), fine to coarse subrounded gravel 20-30% to 1-inch diameter (predominantly fine), some thin lenses (less than 3 inches) with trace fines
45		2-11	14 17 14			At 45 feet, same as above
					ML	SILT (ML), dark yellowish brown (10YR 4/6), damp, very stiff to hard
50		2-12	5 6 14		SW	At 50 feet, GRAVELLY SAND (SW) with trace fines, black (2.5Y N2/), wet, loose to medium dense, fine to coarse sand (f:m:c = 50:30:20), fine to coarse subrounded gravel 15-25 percent to 1-inch diameter
					SLTST	- At 51.2, SILTSTONE (SLTST), dark gray (10YR 4/1), dry, indurated
55		2-13	24 50/4"			SILTSTONE (SLTST) as above

Total Depth = 55.8 feet

NOTES:

1. Drilled adjacent borehole with hollow stem augers to collect bulk soil cuttings sample from 0 to 5.0 feet.
2. Initially used 140 lb. hammer for sample collection; switched to 300 lb. hammer before collecting sample 2-11 at 45 feet and for remainder of borehole. Hammers not used for Shelby tube samples.
3. Pushed 36-inch Shelby tube sample 30 inches only.

Completion Detail



STANDARD_LOG RLF_HSC GEOTECHNICAL BOREHOLE LOGS_V0.3.GPJ STD_LOG.GDT 2/23/11

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT10-03

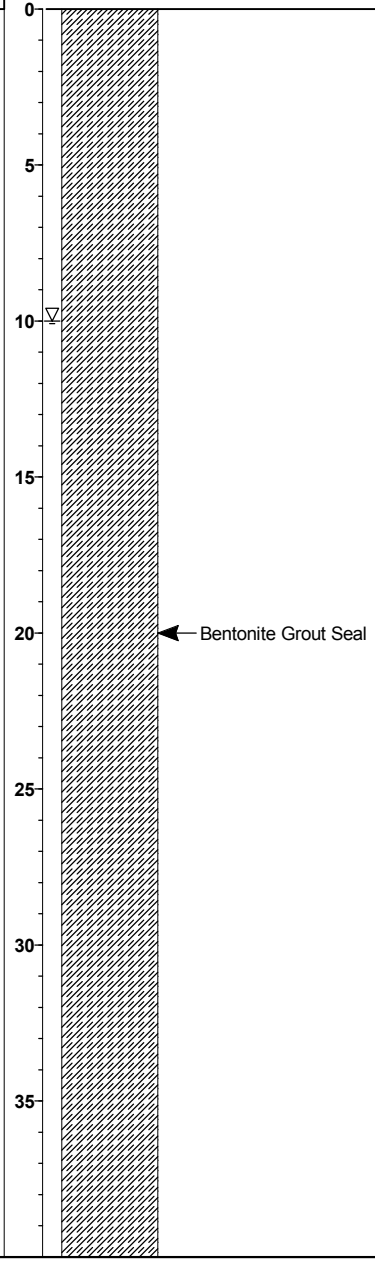
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04210010.00

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. and 300 lb. hammers used, see notes at end of log; 30-inch drop). NWJ rods used.

Depth (meters / feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0		3-1	---		CL		Surface: natural ground surface (grass)
5		3-2	3 5 7				CLAY (CL), mottled dark brown (10YR 4/3) and gray (2.5Y N5/), moist, stiff, medium plasticity
		3-3	---				
10		3-4	1 3 6				Same as above, but with black carbonized (possibly remnant wood fragments) scattered nodules and flecks, moist to wet
15		3-5	2 5 6				CLAY (CL), dark gray (2.5Y N4/), damp, stiff, massive, medium to high plasticity
		3-6	---				
20		3-7	0				Same as above, but very soft (sample 3-7 pushed by weight of rods), wet, scattered coarse sand grains; high plasticity; sample is disturbed and does not stay intact in sampler
		3-8	---				
25		3-9	0/12" 3/6"				CLAY (CL) as above, but no sand and more apparent firmness (first 12 inches pushed by weight of rods)
					SM		SILTY FINE SAND (SM), dark gray (5Y 4/1) with greenish tint, moist to wet, very loose, some olive (5Y 4/3) mottling, silt 10-20 percent
		3-10	3 3 5		ML		FINE SANDY SILT (ML), mottled yellowish brown (10YR 5/8) and light olive brown (2.5Y 5/3), moist, firm, sand 20-30 percent, low plasticity; with 1-inch thick gray clayey silt lens
30		3-11	---				
		3-12	9 6 7		CL		SANDY CLAY (CL), olive gray (5Y 4/2) with greenish tint, moist, stiff, fine sand 20-30 percent, abundant wood fragments at top of sample, rare fine gravels, low plasticity - At 34.1 feet, becomes mottled yellowish brown (10YR 5/8) and light olive brown (2.5Y 5/6), moist, stiff, fine to medium sand (f:m = 90:10) 30-40 percent, low plasticity
35		3-13	24 33 35				At 37.5 feet, SANDY, GRAVELLY CLAY (CL), yellowish brown (10YR 5/8), moist, very dense, weathered appearance, fine to coarse sand (f:m:c = 40:40:20), fine to coarse subangular gravel 20-30 percent to 1-inch diameter, matrix supported
40							

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Mud Rotary (Hollow Stem Auger 0 - 5.0 ft.)**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **9/3/10**
Date Ended: **9/7/10**
Boring Diameter: **4.9 inches**
Elevation: **130.5 ft.**
Total Depth: **60.3 ft.**

STANDARD_LOG RLF_HSC GEOTECHNICAL BOREHOLE LOGS_V0.3.GPJ STD_LOG.GDT 2/23/11

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT10-03

Riverbend Landfill Company

JOB NUMBER: 04210010.00

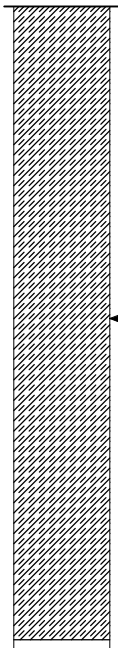
Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
40		3-14	11 14 15		CL	Same as above, but moist to wet, medium dense, predominantly fine subrounded gravel
45		3-15	17 34 50/4"		GW	SANDY GRAVEL (GW) with clay, mottled yellowish brown (10YR 5/8) and dark yellowish brown (10YR 4/4), moist to wet, very dense, weathered appearance, fine to coarse sand (f:m:c = 20:40:40), fine to coarse subgrounded gravel to 1-inch diameter
50		3-16	7 10 19		ML GW	At 50.0 feet, same as above CLAYEY SILT (ML) lens, dark gray (2.5Y N4/), moist At 51.5 feet, SANDY GRAVEL (GW) as above
55		3-17	24 50/5"		CL BASALT	At 55.3 feet, CLAYSTONE (CLST), light olive brown (2.5Y 5/4), dry, hard, cemented, some fine to coarse rounded gravel mixed in matrix At 55.6 feet, BASALT, black, some orange-brown oxide mottling, massive, fine grained, calcite or zeolite filled vein, few open vesicles, crumbly due to weathering
60		3-18	50/4"			BASALT, black, massive, fine grained, unweathered

Total Depth = 60.3 feet

NOTES:

1. Initially drilled borehole with hollow stem augers to collect bulk soil cuttings sample from 0 to 5.0 feet, then switched to mud rotary drilling.
2. Initially used 140 lb. hammer for sample collection; switched to 300 lb. hammer before collecting sample 3-14 at 40 feet and for remainder of borehole. Hammers not used for Shelby tube samples.
3. 36-inch Shelby tube used; applied 36-inch push.

Completion Detail



STANDARD_LOG RLF_HSC GEOTECHNICAL BOREHOLE LOGS_V0.3.GPJ STD_LOG.GDT 2/23/11

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT11-01

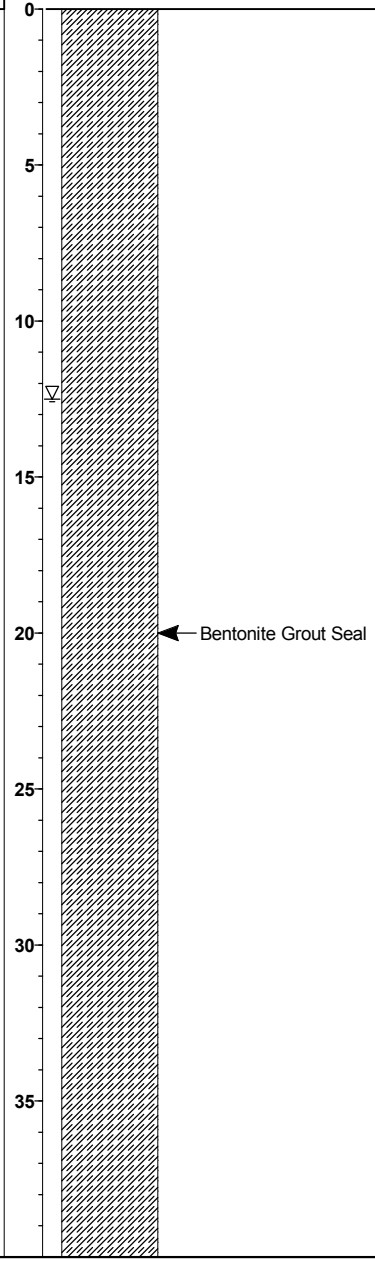
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.00

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. and 300 lb. hammers used, see notes at end of log; 30-inch drop). NWJ rods used.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
0	0					FILL	Surface: gravel fill Note: Initially use 140 lb. hammer and switch to 300 lb. hammer as noted below
1							**ALLUVIUM**
2	5		1-1	1 2 3		CL	SILTY CLAY (CL), yellowish brown (10YR 5/4) with some olive gray (5Y 4/2) mottling, moist to wet, firm, medium plasticity
			1-2	---			
3	10					ML	At 10.0 feet (bottom of Shelby tube sample 1-2), CLAYEY SILT (ML), yellowish brown (10YR 5/4), moist, firm, low to medium plasticity
4			1-3	0 1 2			Same as above but wet, soft (first 6 inches pushed by weight of rods)
5	15		1-4	1 2 3		ML	At 15.0 feet, same as above Becomes mottled yellowish brown as above and light yellowish brown (10YR 6/4), wet, firm, low to medium plasticity
6	20		1-5	---			
7						ML	At 22.5 feet (bottom of Shelby tube sample 1-5), SILT (ML) with trace sand, dark gray (5Y 4/1) with greenish tint, wet, low to medium plasticity
8	25		1-6	3 3 4		ML	CLAYEY SILT (ML), same color as above, moist to wet, firm, bedded zones with varying clay content from 10 - 40 percent, beds up to 5 inches thick, zones with less clay are visibly wet, low to medium plasticity
9	30		1-7	1 5 6			Same as above but stiff
10							
11	35		1-8	---		CL	At 37.5 feet, SILTY CLAY (CL) with fine gravel, grayish green, moist to wet, apparent hard, low to medium plasticity
12	40		1-9	12 25 33		CL	- At 38.0 feet, SANDY, GRAVELLY CLAY (CL), mottled grayish green, light green, and very dark gray (5Y 3/1), moist to wet, hard, coarse sand and fine gravel 30 - 40 percent

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Mud Rotary**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **1/26/11**
Date Ended: **1/26/11**
Elevation: **152.1 ft.**
Total Depth: **66.5 ft.**
Boring Diameter: **4.9" (to 45.0 ft.); 3.9" (from 45.0 - 66.5 ft.)**

STANDARD_LOG RLF_MSE BERM GEOTECHNICAL BOREHOLE LOGS_V2.0.GPJ STD_LOG.GDT 7/7/11

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT11-01

Riverbend Landfill Company

JOB NUMBER: 04211001.00

Depth (meters / feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
							Abundant gravels in drill cuttings
							Switch to 300 lb. hammer before collecting sample 1-10 and for remainder of borehole
45		1-10	15 26 50		GW		SANDY GRAVEL (GW) with clay, strong brown (6.5Y 4/6), moist, very dense, fine to coarse sand (f:m:c = 20:40:40) 30 - 40 percent, fine and coarse (50:50) subrounded gravel with oxidized surfaces, slightly weathered appearance
50		1-11	9 8 9		SW SM		At 50.0 feet, GRAVELLY SAND (SW) with trace fines, strong brown as above, wet, fine gravel 20 - 30 percent, medium to coarse sand (m:c = 30:60), weathered appearance - Contact in ring sample with SILTY FINE SAND (SM), dark gray (5Y 4/1) with bluish tint, silt 20 - 30 percent, medium dense, wet - At 53.5 feet, driller reports gravels encountered
55		1-12	7 13 16		SW/GW		At 55.0 feet, GRAVELLY SAND / SANDY GRAVEL (SW/GW), very dark gray (5Y 3/1), wet , medium dense to dense, fine to coarse sand (f:m:c = 20:40:40), fine subrounded gravel - At 57.5 feet, driller reports harder drilling - At 59.0 feet, driller reports softer drilling - At 60.0 feet, GRAVELLY SILTY SAND (SM), dark gray (5Y 4/1) with greenish tint, wet, fine to coarse sand (f:m:c = 60:20:20), silt 30 - 40 percent, fine gravel 10 - 20 percent, rare small wood fragments
60		1-13	7 8 11		SM SM		- Contact in ring sample with SILTY FINE SAND (SM), dark gray as above, silt 30 - 40 percent, wet, medium dense, faintly micaceous, rare small wood fragments - At 63.0 feet, driller reports harder drilling
65		1-14	10 15 22		SC		- At 65.0 feet, GRAVELLY CLAYEY SAND (SC), grayish green, moist to wet, dense, fine to coarse sand (f:m:c = 40:30:30), clay 20 - 30 percent, predominantly fine gravel but 2.5-inch gravel in sample shoe

Total Depth = 66.5 feet

(Northing 3856.08, Easting 3967.99)

NOTES:

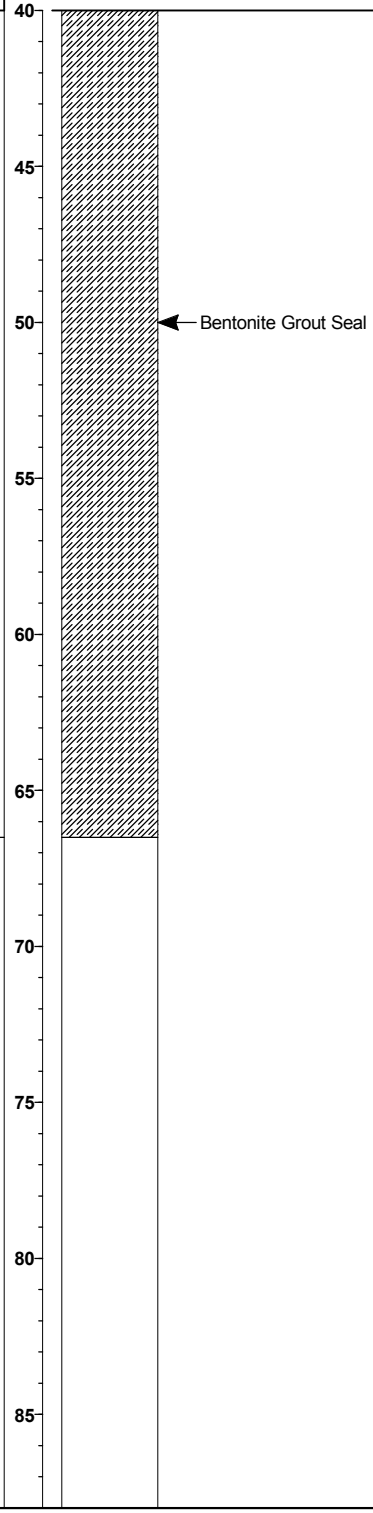
1. Drilled adjacent borehole with hollow stem augers to collect bulk soil cuttings sample 1-15 from 0 to 10.0 feet.

2. Initially used 140 lb. hammer for sample collection; switched to 300 lb. hammer before collecting sample 1-10 at 45 feet and for remainder of borehole. Hammers not used for Shelby tube samples.

3. 36-inch long Shelby tube samples were pushed 30 inches only.

4. Shallow (Silt-Clay unit) groundwater encountered at 12.5 feet during drilling. Deep (Sand-Gravel unit) groundwater encountered at 50.0 feet during drilling.

Completion Detail



STANDARD_LOG RLF_MSE BERM GEOTECHNICAL BOREHOLE LOGS_V2.0.GPJ STD_LOG.GDT 7/7/11

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT11-02

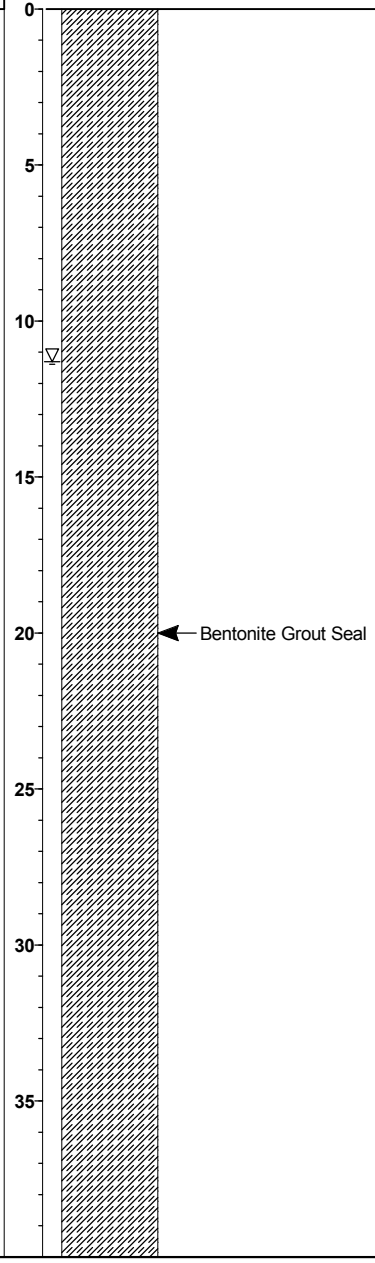
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.00

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. and 300 lb. hammers used, see notes at end of log; 30-inch drop). NWJ rods used.

Depth (meters / feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
0					FILL	Surface: gravel fill
						Note: Initially use 140 lb. hammer and switch to 300 lb. hammer as noted below.
						ALLUVIUM
5		2-1	0 3 4		CL	SILTY CLAY (CL), mottled very dark grayish brown (2.5Y 3/3) and dark yellowish brown (10YR 4/4), quickly grades to dark gray (5Y 4/1) with depth, moist to wet, firm, low to medium plasticity
		2-2	---			
10		2-3	2 3 5			At 10.0 feet, SILTY CLAY (CL), very dark gray (5Y 3/1), moist, firm, low to medium plasticity
					ML	At 11.3 feet, contact with CLAYEY SILT (ML), olive (2.5Y 4/3), wet, firm, clay 20 - 30 percent, low plasticity
15		2-4	1 2 3		CL	Very limited sample recovery, SILTY CLAY (CL), same appearance as above, firm
						Switch to 300 lb. hammer before collecting sample 2-5 at 20.0 feet
20		2-5	1 1 2		ML	SILT (ML), yellowish brown (10YR 5/4) with minor black (manganese?) mottling, moist, soft, trace to some clay, low to medium plasticity
		2-6	---			
25						At 24.5 feet (bottom of Shelby tube sample 2-6), CLAYEY SILT (ML), dark gray (5Y 4/1), moist, clay 20-30 percent, low to medium plasticity
						Switch to 140 lb. hammer before collecting sample 2-7 at 30.0 feet
30		2-7	3 4 5		CL	SILTY CLAY (CL), same color as above, moist, stiff, silt 10 - 20 percent, low to medium plasticity
		2-8	---			
35						At 35.0 feet (bottom of Shelby tube sample 2-8), CLAY (CL), dark gray (5Y 4/1) with greenish tint, moist, trace silt, medium to high plasticity
40					CL/ML	

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Mud Rotary**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **1/24/11**
Date Ended: **1/24/11**
Elevation: **141.4 ft.**
Total Depth: **61.5 ft.**
Boring Diameter: **4.9" (to 45.0 ft.); 3.9" (from 45.0 - 61.5 ft.)**

STANDARD_LOG RLF_MSE BERM GEOTECHNICAL BOREHOLE LOGS_V0.1.GPJ STD_LOG.GDT 2/15/11

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

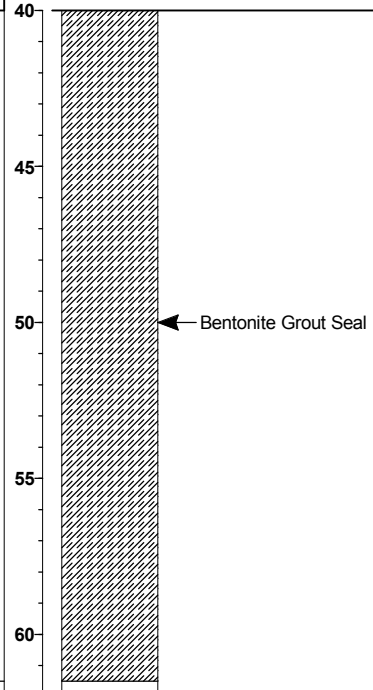
BORING NUMBER: GT11-02

Riverbend Landfill Company

JOB NUMBER: 04211001.00

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
	40		2-9	3 5 19		CL/ML		At 40.0 feet, SILTY CLAY / CLAYEY SILT (CL/ML), greenish gray, moist to wet, firm to stiff, slight orange brown oxide (iron) mottling
						ML		- At 41.3 feet, contact with SILT (ML) with fine sand, same color as above but with abundant oxide mottling
13								- Switch to 300 lb. hammer before collecting sample 2-10 at 45.0 feet and for remainder of borehole
	45		2-10	19 50/6"		GC		- At 45.0 feet, CLAYEY SANDY GRAVEL (GC), dark yellowish brown (10YR 4/4) with slight yellowish and orange brown oxide (iron) mottling, moist, very dense, clay 10 - 20 percent, fine to coarse sand (f:m:c = 20:40:40) 10 - 20 percent, subrounded gravel to 1.5-inch diameter, predominantely fine gravel
14								
15								
	50		2-11	21 50/6"		GC		Same as above but mottled olive brown (2.5Y 4/3) with abundant orange brown oxide (iron) mottling, gravel to 2.5-inch diameter, large gravel stuck in sample shoe
16								
	55		2-12	2 31 50		ML		SILT (ML), greenish gray with minor orange brown oxide (iron) mottling, moist, hard, few scattered gravels to 2-inch diameter
17								
18								GRAVELLY SAND / SANDY GRAVEL (SW/GW), black (5Y 2.5/1), wet, dense, trace to some fines, fine to coarse sand (f:m:c = 10:30:60), predominantely fine gravel
	60		2-13	11 15 22		SW/GW		
19								Total Depth = 61.5 feet
20	65							NOTES: 1. Drilled adjacent borehole with hollow stem augers to collect bulk soil cuttings sample 2-14 from 0 to 10.0 feet.
21								2. Initially used 140 lb. hammer for sample collection; switched to 300 lb. hammer for samples 2-5 (at 20 feet) and 2-10 (at 45 feet) through 2-13 (at 60 feet). Hammers not used for Shelby tube samples.
	70							
22								3. 36-inch long Shelby tube samples were pushed 30 inches only.
23	75							4. Shallow (Silt-Clay unit) groundwater encountered at 11.3 feet during drilling. Deep (Sand-Gravel unit) groundwater encountered at 60.0 feet during drilling.
24								
	80							
25								
26	85							

Completion Detail



STANDARD_LOG RLF_MSE BERM GEOTECHNICAL BOREHOLE LOGS_V0.1.GPJ STD_LOG.GDT 2/15/11

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-01A

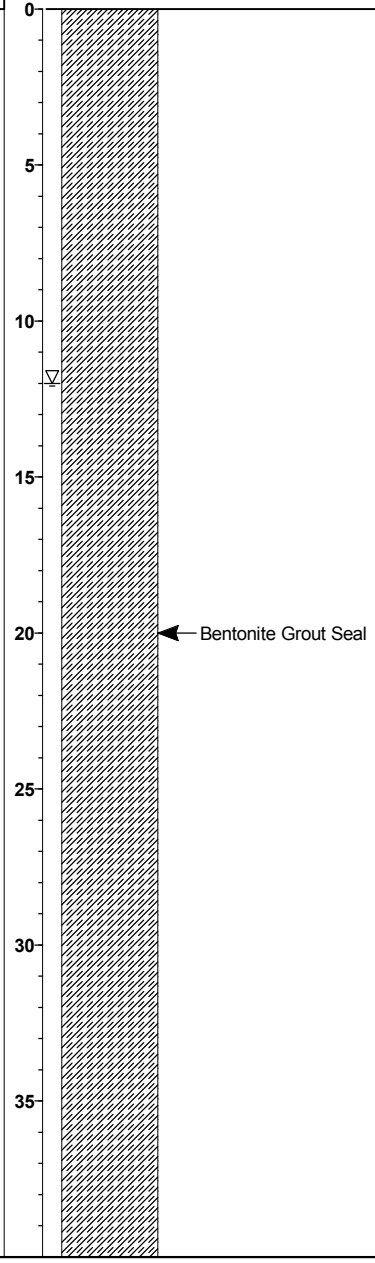
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. and 300 lb. hammers used, see notes at end of log; 30-inch drop). NWJ rods used.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
0	0					FILL	Surface: gravel fill Note: Initially use 140 lb. hammer and switched to 300 lb. hammer as noted below. **ALLUVIUM**
			1A-1	---			
1						CL	At 4.5 feet (bottom of Shelby tube sample 1A-1), CLAYEY SILT (ML), brown (10YR 5/3), very moist, slight orange brown (oxide) mottling, medium plasticity
	5		1A-2	---			
2							Sample 1A-2 disturbed and poor recovery, did not retain sample
			1A-3	---			Sample 1A-3 no recovery
3	10		1A-4	---			
			1A-5	---		ML	At 12.0 feet (bottom of Shelby tube sample 1A-4), CLAYEY SILT (ML), brown (10YR 5/3), wet, low to medium plasticity
4						ML	At 14.5 feet (bottom of Shelby tube sample 1A-5), SILT (ML), yellowish borwn (10YR 5/4), wet, some orange brown (oxide) mottling, slightly micaceous, low to medium plasticity
5	15						
6	20		1A-6	---			
7			1A-7	3 4 5		ML	At 22.5 feet (bottom of Shelby tube sample 1A-6), same SILT (ML) as above in sample 1A-5 Sample 1A-7 disturbed, apparent slough only, did not retain. Firm to stiff based on blow counts.
	25		1A-8	---			
8						CL	At 27.5 feet (bottom of Shelby tube sample 1A-8), SILTY CLAY (CL), dark gray (5Y 4/1), very moist, scattered small (< 1.8-inch) hard nodules, low to medium plasticity
9	30		1A-9	---		CL/ML	At 32.5 feet (bottom of Shelby tube sample 1A-9), SILTY CLAY / CLAYEY SILT (CL/ML), dark gray (5Y 4/1), very moist, scattered small (<1.8-inch) hard nodules, medium plasticity
10	35		1A-10	---		CH	At 37.5 feet (bottom of Shelby tube sample 1A-10), SILTY CLAY (CH), dark gray (5Y 4/1) with greenish tint, moist to very moist, more apparent firmness than all soils above but high plasticity, slight orange-brown mottling
11			1A-11	---			Sample 1A-11 disturbed and poor recovery, did not retain sample. Sample tube was bent/damaged at the bottom.
12	40						

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Mud Rotary**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **1/26/12**
Date Ended: **1/27/11**
Boring Diameter: **5.0"**

Elevation: **151.7 ft.**
Total Depth: **66.5 ft.**

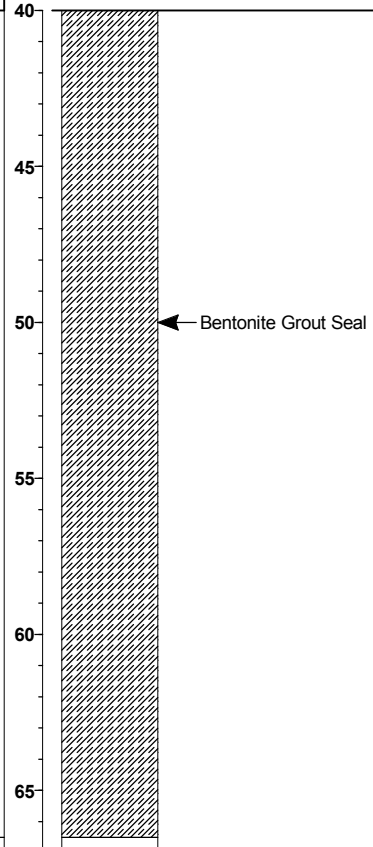
STANDARD_LOG RLF_PHASE 1A MSE BERM GEOTECHNICAL BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

Riverbend Landfill Company

JOB NUMBER: 04211001.01

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
	40		1A-12	5 7 11		ML-SM		**ALLUVIUM (Continued)** At 40.0 feet, crudely layered SILT (ML), SANDY SILT (ML), and SILTY SAND (SM), some clay, mottled dark yellowish brown (10YR 4/4), pale brown (2.5Y 7.4), and pale olive (5Y 6/3), moist, very stiff, 1/2-inch gravel at bottom of sample
13								
	45		1A-13	7 7 11		ML CL		At 45.0 feet, CLAYEY SILT (ML), light brownish gray (2.5Y 6/2) with orange-brown (oxide) mottling (abundant mottling at top of sample), damp to moist Quickly grades to SILTY CLAY (CL), same color as above, damp to moist, very stiff
14								
15								Drilled reported gravel encountered at 49.8 feet
	50		1A-14	17 27 38		GW		SANDY GRAVEL (GW) with clay, dark yellowish brown (10YR 4/4), wet, dense, fine to coarse sand (f,m,c -= 20,20,60), fine to coarse subangular gravel to 1-inch diameter
16								Switch to 300 lb. hammer before collecting sample 1A-15 and for remainder of samples
	55		1A-15	18 28 47		GM/GW		SILTY GRAVEL / SANDY GRAVEL (GM/GW), dark yellowish brown (10YR 4/4), very moist, dense, sand-silt approximately 50 percent, fine to coarse sand (f,m,c = 20,40,20), fine to coarse subangular gravel to 1-inch diameter
17								
18								
	60		1A-16	7 37 50/5"		SM		SILTY SAND (SM) with some fine gravels, very dark gray (5Y 3/1) with greenish tint, damp, silt 10 - 20 percent, fine to medium sand, predominantly fine sand
19								
	65		1A-17	15 40 50/2"		SM		Same SILTY SAND (SM) as above but with 20 - 30 percent fine to coarse gravel to 3/4-inch diameter
20								
21								Total Depth = 66.5 feet (Northing 4140.530, Easting 3989.042)
	70							NOTES: 1. Drilled adjacent borehole with hollow stem augers to collect bulk soil cuttings sample 1A-18 from 0 to 10.0 feet.
22								
	75							2. Initially used 140 lb. hammer for sample collection; switched to 300 lb. hammer before collecting sample 1A-15 at 55 feet and for remainder of borehole. Hammers not used for Shelby tube samples.
23								
								3. 36-inch long Shelby tube samples were pushed 30 inches only.
24								
	80							4. Shallow (Silt-Clay unit) groundwater encountered at 12.0 feet during drilling. Deep (Sand-Gravel unit) groundwater encountered at 50.0 feet during drilling.
25								
								5. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.
26	85							

Completion Detail



SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-01B

Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. hammer; 30-inch drop). NWJ rods used.

Depth (meters / feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
0						Surface: Grass **ALLUVIUM**
		1B-1	---			
5		1B-2	1 2 2		MH	CLAYEY SILT (ML), very moist, brown (10YR 4/3), soft, slightly micaceous, high plasticity
		1B-3	---			
10					ML	At 10.0 feet (bottom of Shelby tube sample 1B-3), same as above in sample 01B-2, but trace to some clay, wet, medium to high plasticity
		1B-4	---			
15		1B-5	1 3 2		ML	VERY CLAYEY SILT (ML), mottled brown (10YR 4/3) and yellowish brown (10YR 5/4), wet, firm, medium plasticity
		1B-6	---			
20					ML	At 20.0 feet (bottom of Shelby tube sample 1B-6), CLAYEY SILT (ML), brown (10YR 5/3), wet, less clay than in sample 01B-5
		1B-7	---			
25		1B-8	---		ML	At 25.0 feet (bottom of Shelby tube sample 1B-7), SILT (ML), brown (10YR 5/3), wet, faintly micaceous, trace to some clay, low to medium plasticity
		1B-9	---		ML	At 27.5 feet (bottom of Shelby tube sample 1B-8), same SILT (ML) as above in sample 1B-7, but dark gray (5Y 4/1), very moist
30					CL/ML	At 30.0 feet (bottom of Shelby tube sample 1B-9), SILTY CLAY / CLAYEY SILT (CL/ML), dark gray (5Y 4/1), very moist, medium plasticity

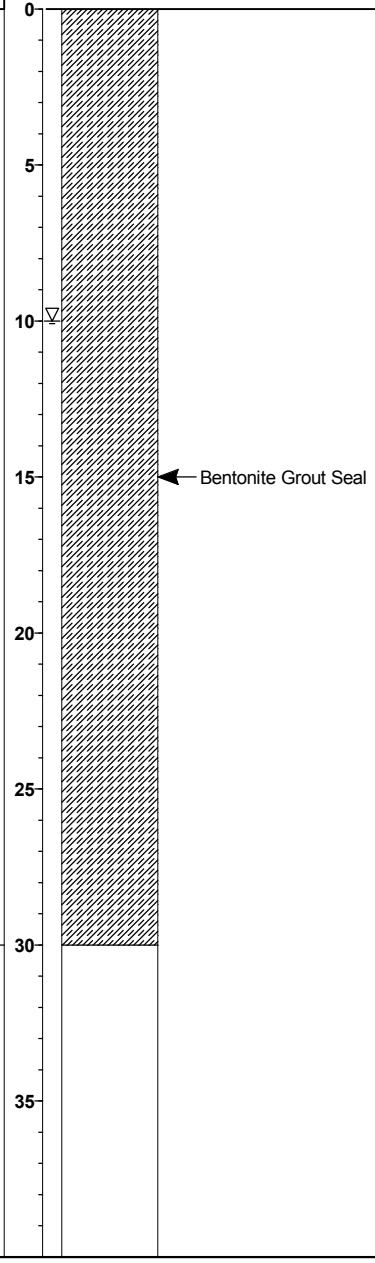
Total Depth = 30.0 feet

(Northing 4034.671, Easting 3930.587)

NOTES:

1. 36-inch long Shelby tube samples were pushed 30 inches only.
2. Used 140 lb. hammer throughout entire borehole for SPT sample collection.
3. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.

Completion Detail



Drilling Company:	**Major Drilling Environmental, LLC**
Drilling Method:	**Mud Rotary**
Logged By:	**David Lamadrid**
Sampling Method:	**See legend for explanation of sample types**

Date Started:	**1/27/12**	Elevation:	**150.8 ft.**
Date Ended:	**1/27/12**	Total Depth:	**30.0 ft.**
Boring Diameter:	**5.0"**		

STANDARD_LOG RLF_PHASE 1A MSE BERM GEOTECHNICAL BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-02A

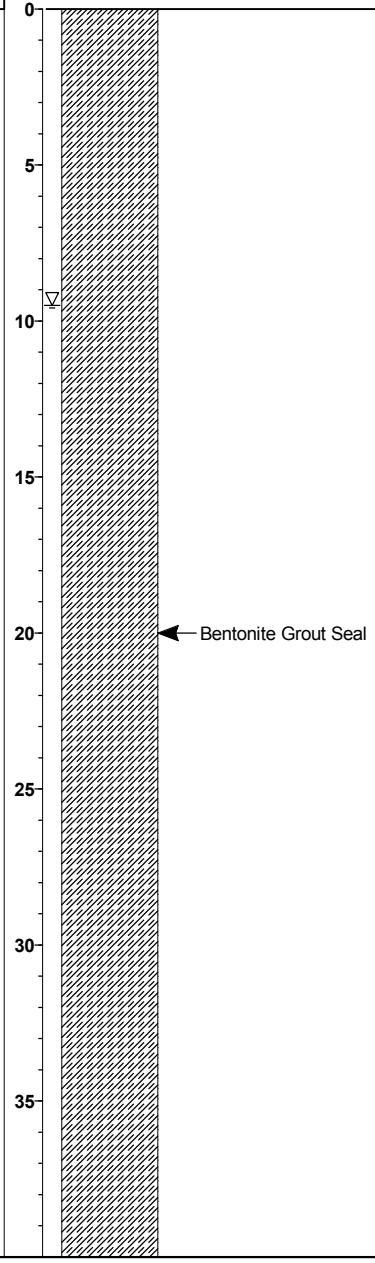
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. and 300 lb. hammers used, see notes at end of log; 30-inch drop). NWJ rods used.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
0	0					FILL	Surface: gravel road base Initially used 140 lb. hammer and switched to 300 lb. hammer as noted below. **ALLUVIUM**
1			2A-1	---			
	5		2A-2	---		CL	At 4.5 feet (bottom of Shelby tube sample 2A-1), SILTY CLAY (CL), brown (10YR 5/3), very moist, low to medium plasticity
2			2A-3	---		CL	At 7.0 feet (bottom of Shelby tube sample 2A-2), SILTY CLAY (CL), brown (10YR 4/3) with slight orange brown (oxide) mottling, very moist, faintly micaceous, low to medium plasticity
3	10		2A-4	---		CL	At 9.5 feet (bottom of Shelby tube sample 2A-3), same SILTY CLAY (CL) as above in sample 2A-3, but wet
4			2A-5	---		CL	
5	15		2A-6	1 1 1		CL-ML	Bedded SILTY CLAY (CL) and CLAYEY SILT (ML), brown (10YR 5/3) with slight orange-brown (oxide) mottling, wet, soft, beds up to 4 inches thick
6	20		2A-7	---			
7						CL/ML	At 22.5 feet (bottom of Shelby tube sample 2A-7), SILTY CLAY / CLAYEY SILT (CL/ML), dark gray (5Y 4/1), wet, scattered, small (<1/16 inch) granules)
8	25		2A-8	---			Driller reported more firm drilling than above
			2A-9	1 3 5		CL	SILTY CLAY (CL), dark gray (5Y 4/1), very moist, firm, low to medium plasticity
9	30		2A-10	---		CL	Grades to SILTY CLAY (CL), same color and characteristics as above but with slight orange-brown (oxide) mottling
10						CL	At 32.5 feet (bottom of Shelby tube sample 2A-10), slightly SILTY CLAY (CL), dark gray (5Y 4/1), very moist, medium plasticity, small (<1/16 inch) granules
11	35		2A-11	---			
12	40		2A-12	---		CH	At 37.5 feet (bottom of Shelbe tube sample 2A-11), same SILTY CLAY (CL) as above in sample 2A-10, with trace fine sand, high plasticity

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Mud Rotary**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **1/30/12**
Date Ended: **1/31/12**
Boring Diameter: **5.0"**
Elevation: **149.3 ft.**
Total Depth: **68.0 ft.**

STANDARD_LOG RLF_PHASE 1A MSE BERM GEOTECHNICAL BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

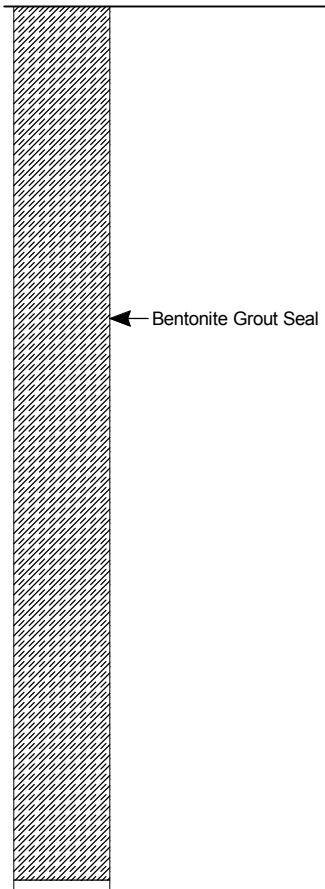
Riverbend Landfill Company

JOB NUMBER: 04211001.01

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
	40					CL/ML	**ALLUVIUM (Continued)** At 40 feet (bottom of Shelby tube sample 2A-12), SILTY CLAY / CLAYEY SILT (CL/ML), dark greenish gray (5GY 4/2) with slight orange brown (oxide) mottling, moist, faintly micaceous, low to medium plasticity
13							At 42 feet, driller reported harder drilling and gravel
	45		2A-13	17 36 32		SC	CLAYEY SAND (SC) with gravel, mottled srong brown (7.5Y 4/6) and brownish yellow (10YR 6/6), very moist, clay 30 - 40 percent, fine to coarse sand (f,m,c = 40,40,20), fine to coarse gravel to 1-inch diameter, weathered appearance
14							
15							Switch to 300 lb. hammer before collecting sample 2A-14 and for remainder of samples
	50		2A-14	6 6 8		SC SM	At 50 feet, same as above in sample 2A-13
16							Contact in sample 2A-14 with SILTY FINE SAND (SM), light olive brown (2.5Y 5/4) with some orange brown (oxide) mottling), moist, loose, silt 10 - 20 percent increasing with depth
							Color change in sample shoe to dark gray (5Y 4/1) but same SILTY FINE SAND (SM)
	55		2A-15	8 13 20		SW	At 55.0 feet, GRAVELLY SAND (SW) with trace silt, black (5Y 2.5/1) moist, medium dense, fine subround gravel to 1/2-inch diameter, fine to coarse sand (f,m,c = 40,30,10)
17							
18							
	60		2A-16	9 15 18		SW	Same GRAVELLY SAND (SW) as above in sample 2A-15, but dark gray (5Y 4/1) and medium dense
19							
	65		2A-17	9 18 22			No recovery in sample 2A-17
20			2A-18	9 19 31		SW	Same GRAVELLY SAND (SW) as above in sample 2A-15, but very dark greenish gray (GLEY 1 3/1) and medium dense
21							
	70						Total Depth = 68.0 feet
							(Northing 3553.346, Easting 3963.072)
22							NOTES:
							1. Drilled adjacent borehole hollow stem augers to collect bulk soil cuttings sample 2A-19 from 0 to 10.0 feet.
23	75						2. Initially used 140 lb. hammer for sample collection; switched to 300 lb. hammer before collecting sample 2A-14 at 50 feet and for remainder of borehole. Hammers not used for Shelby tube samples.
24							3. 36-inch long Shelby tube samples were pushed 30 inches only.
	80						4. Shallow (Silt-Clay unit) groundwater encountered at 9.5 feet during drilling. Deep (Sand-Gravel unit) groundwater not encountered during drilling (no visible signs of saturated soils).
25							5. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.
26	85						

Graphic Log

Completion Detail



SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-02B

Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. hammer; 30-inch drop). NWJ rods used.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
							Surface: Grass **ALLUVIUM**
			2B-1	---		CL	At 5.0 feet (bottom of Shelby tube sample 2B-1), SILTY CLAY (CL), brown (10YR 5/3), moist, faintly micaceous, low to medium plasticity
			2B-2	---			
			2B-3	1 2 2		ML	CLAYEY SILT (ML), brown (10YR 5/3), moist, faintly micaceous, low to medium plasticity
						CL/ML	Grades to SILTY CLAY / CLAYEY SILT (CL/ML), same color as above, wet, soft, low to medium plasticity
			2B-4	---		ML	At 15.0 feet (bottom of Shelby tube sample 2B-4, CLAYEY SILT (ML), brown (10YR 4/3), wet, faintly micaceous, trace sand, low to medium plasticity
			2B-5	---			
			2B-6	1 1 2		CL	SILTY CLAY (CL), grayish brown (2.5Y 5/2), wet, soft, medium plasticity
			2B-7	---		CL/ML	At 25.0 feet (bottom of Shelby tube sample 2B-7), SILTY CLAY / CLAYEY SILT (CL/ML), dark gray (5Y 4/1), wet, low to medium plasticity At approximately 27.0 feet, driller reported relatively more firm drilling than above
			2B-8	---		ML	At 30 feet (bottom of Shelby tube sample 2B-8), SILT (ML), dark gray (5Y 4/1), very moist, slightly micaceous, low to medium plasticity

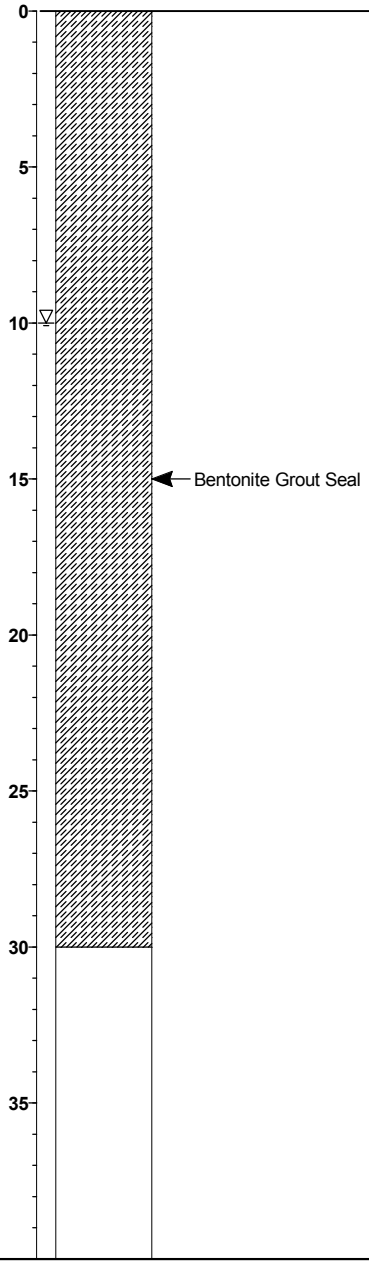
Total Depth = 30.0 feet

(Northing 3503.039, Easting 3901.078)

NOTES:

1. 36-inch long Shelby tube samples were pushed 30 inches only.
2. Used 140 lb. hammer throughout entire borehole for SPT sample collection.
3. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.

Completion Detail



Drilling Company:	**Major Drilling Environmental, LLC**
Drilling Method:	**Mud Rotary**
Logged By:	**David Lamadrid**
Sampling Method:	**See legend for explanation of sample types**

Date Started:	**2/1/12**	Elevation:	**148.9 ft.**
Date Ended:	**2/1/12**	Total Depth:	**30.0 ft.**
Boring Diameter:	**5.0"**		

STANDARD_LOG RLF_PHASE 1A MSE BERM GEOTECHNICAL BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-03A

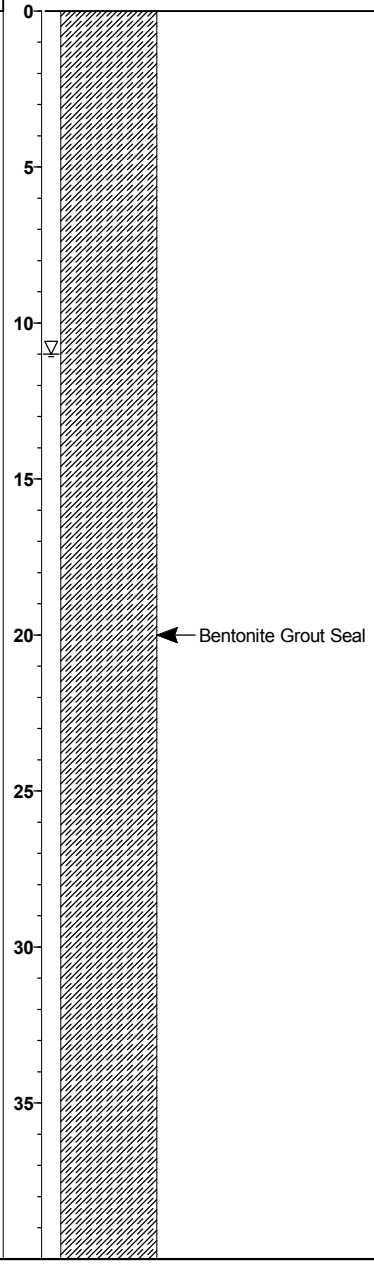
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. and 300 lb. hammers used, see notes at end of log; 30-inch drop). NWJ rods used.

Depth (meters / feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
0					FILL	Surface: gravel road base Initially used 140 lb. hammer and switched to 300 lb. hammer as noted below.
1		3A-1	---		ML	**ALLUVIUM** Shelby tube sample 3A-1 could only be pushed 12 inches. At bottom of sample CLAYEY SILT (ML), brown (10YR 4/3), moist, slightly micaceous, low to medium plasticity
		3A-2	---			
5					CL/ML	At 6.0 feet (bottom of Shelby tube sample 3A-2), SILTY CLAY / CLAYEY SILT (ML), brown (10YR 4/3), very moist, slightly micaceous, low to medium plasticity
2		3A-3	---			
		3A-4	---		ML	At 8.5 feet (bottom of Shelby tube sample 3A-3), slightly CLAYEY SILT (ML), brown (10YR 4/3), very moist, slightly micaceous, low to medium plasticity
3 / 10		3A-5	---		ML	At 11.0 feet (bottom of Shelby tube sample 3A-4), same CLAYEY SILT (ML) as above in sample 3A-3 but wet
4		3A-6	---		ML	At 13.5 feet (bottom of Shelby tube sample 3A-5), CLAYEY SILT (ML), brown (10YR 4/3), wet, medium plasticity
15 / 5					ML	At 16.0 feet (bottom of Shelby tube sample 3A-6), same CLAYEY SILT (ML) as above in sample 3A-5, with slight pale brown (10YR 6/3) mottling, few small (<1/8 inch) black flecks
6 / 20		3A-7	---			
7		3A-8	0 2 3		CL	SILTY CLAY (CL), dark gray (5Y 4/1), moist to wet, firm, bedded layers with varying silt content, beds up to 4 inches thick
25		3A-9	---			Shelby tube sample 3A-9 could only be pushed 7 inches
8		3A-10	3 4 5		ML	CLAYEY SILT (ML), dark gray (5Y 4/1), moist, stiff, grades quickly to trace clay at bottom of sample, faintly micaceous, low to medium plasticity
9 / 30		3A-11	---			
10					CL	At 32.5 feet (bottom of Shelby tube sample 3A-11), SILTY CLAY (CL), dark gray (5Y 4/1), moist, low to medium plasticity (driller reported firm push)
35 / 11		3A-12	---			
12 / 40		3A-13			CL	At 37.5 feet (bottom of Shelby tube sample 3A-12), same SILTY CLAY (CL) as above in sample 3A-11 (driller reported firm push)

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Mud Rotary**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **1/30/12**
Date Ended: **1/30/12**
Boring Diameter: **5.0"**

Elevation: **147.8 ft.**
Total Depth: **71.5 ft.**

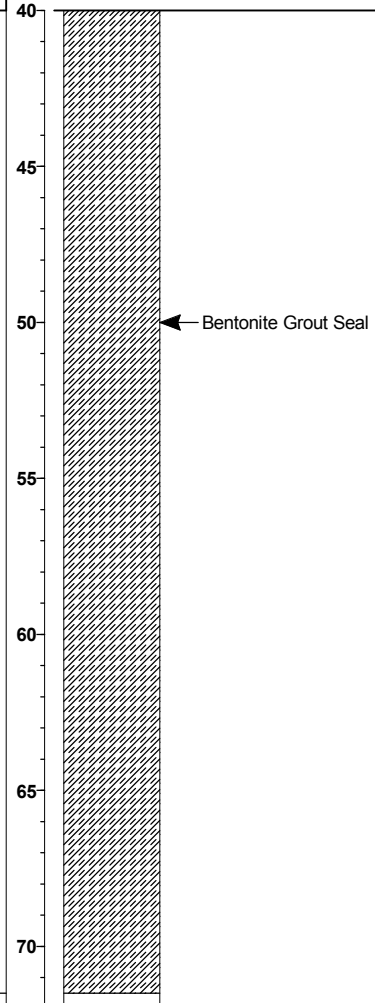
STANDARD_LOG RLF_PHASE 1A MSE BERM GEOTECHNICAL BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

Riverbend Landfill Company

JOB NUMBER: 04211001.01

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
	40					CL		**ALLUVIUM (Continued)** At 40 feet (bottom of Shelby tube sample 3A-13), CLAY (CL), dark gray (5Y 4/1), very moist, medium to high plasticity
13								Shelby tube sample 3A-14 could only be pushed 15 inches. Sample was disturbed and tube severly bent at bottom. Sample not retained. At bottom of sample
	45		3A-14			ML/SM		FINE SANDY SILT / SILTY FINE SAND (ML/SM), dark gray (5Y 4/1) with greenish tint, very moist.
14			3A-15	15 19 26		GC		At 46.5 feet, SANDY, CLAYEY GRAVEL (GC), yellowish brown (10YR 4/6), wet, dense, abundant mottling with gray and brown, fine to coarse sand (f,m,c = 10,30,60), fine to coarse subrounded gravel to 1-inch diameter
15								
	50		3A-16	14 25 34		GC		Switched to 300 lb. hammer for sample 3A-16 and for remainder of samples
16								At 50 feet, same SANDY, CLAYEY GRAVEL (GC) as above in sample 3A-15, but gravel up to 2.5 inch diameter
	55		3A-17	7 9 16		SW/GW		GRAVELLY SAND / SANDY GRAVEL (SW/GW), very dark gray (5Y 3/1), wet, medium dense, trace fines, fine to coarse sand (f,m,c = 20,40,40), fine to coarse subrounded gravel to 1 inch diameter
17								
18								
	60		3A-18	8 21 48		SW/GW		Same GRAVELLY SAND / SANDY GRAVEL (SW/GW) as above in sample 3A-17, but very moist, dense, gravels up to 2.5 inch diametr
19								
						SW		FINE TO MEDIUM SAND (SW), very dark gray (5Y 3/1), very moist, medium dense, predominantly fine sand, trace silt, few pebbles
	65		3A-19	7 14 18				
20						ML		Contact in sample with slightly SANDY SILT (ML), dark gray (5Y 4/1), moist, very stiff, some pebbles
21						SM		At 70.0 feet, SILTY SAND (SM), dark gray (5Y 4/1), moist, medium dense, silt 30 - 40 percent, fine to coarse sand, some pebbles
	70		3A-20	8 10 14		ML/SM		Grades with increasing silt content to SANDY SILT / SILTY SAND (ML/SM)
22								Total Depth = 71.5 feet (Northing 3082.638, Easting 3955.140) NOTES: 1. Drilled adjacent borehole with hollow stem augers to collect bulk soil cuttings sample from 0 to 10.0 feet. 2. Initially used 140 lb. hammer for sample collection; switched to 300 lb. hammer before collected sample 3A-16 and for remainder of borehole. Hammer not used for Shelby tube samples. 3. 36-inch long Shelby tube samples were pushed 30 inches only. 4. Shallow (Silt-Clay unit) groundwater encountered at 11.0 feet during drilling. Deep (Sand-Gravel unit) groundwater encountered at 46.0 feet during drilling. 5. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.
23	75							
24								
	80							
25								
26	85							

Completion Detail



SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-03B

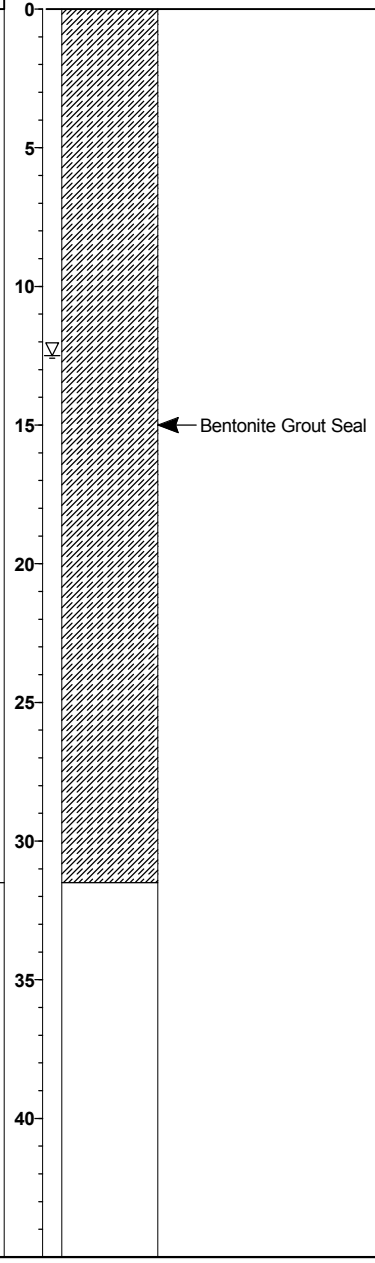
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. hammer; 30-inch drop). NWJ rods used.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					FILL		Surface: gravel fill
1			3B-1	---				**ALLUVIUM** Shelby tube sample 3B-1 poor recovery and slightly disturbed; did not retain sample. At bottom of sample, SILTY CLAY (CL), dark yellowish brown (10YR 3/4), very moist to wet, medium plasticity
	5		3B-2	---		CL		
2			3B-3	1 2 3		ML		At 7.0 feet, slightly CLAYEY SILT (ML), yellowish brown (10YR 5/4), very moist, firm, irregular partings with some oxide filled, medium plasticity
3	10		3B-4	---				
4						CL/ML		At 12.5 feet (bottom of Shelby tube sample 3B-4), SILTY CLAY / CLAYEY SILT (CL/ML), brown (10YR 4/3), very moist to wet, low to medium plasticity
5	15		3B-5	---				
6			3B-6	1 2 2		CL		SILTY CLAY (CL), mottled yellowish brown (2.5Y 6/3) and brown (10YR 5/3), wet, soft
	20		3B-7	---				
7						CL		At 22.5 feet (bottom of Shelby tube sample 3B-7), SILTY CLAY (CL), light olive brown (2.5Y 5/3), wet, scattered small (<1/16 inch) hard granules
								At approximately 23 to 24 feet, driller reported relatively harder drilling
8	25		3B-10	2 4 5		ML		SILT (ML) with trace clay, dark grayish green (GLEY1 4/1), moist, firm, faintly micaceous, low to medium plasticity
9	30		3B-11	2 5 4		ML		Same SILT (ML) as above but slightly clayey
10								Total Depth = 31.5 feet
								(Northing 3126.117, Easting 3904.878)
11	35							NOTES: 1. 36-inch long Shelby tube samples were pushed 30 inches only.
								2. Used 140 lb. hammer throughout entire borehole for SPT and California modified sample collection.
12	40							3. Shelby tube sample collection was attempted at 25.0 feet (sample 3B-8) and 27.5 feet (sample 3B-9), but little or no recovery was obtained and the tube at 27.5 feet sheared off and remained in the borehole. Another adjacent borehole was drilled to collect California modified samples at 25.0 feet (sample 3B-10) and 30.0 feet (sample 3B-11).
13								4. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.
	45							

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Mud Rotary**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **2/1/12**
Date Ended: **2/1/12**
Boring Diameter: **5.0"**

Elevation: **148.7 ft.**
Total Depth: **31.5 ft.**

STANDARD_LOG RLF_PHASE 1A MSE BERM GEOTECHNICAL BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-04A

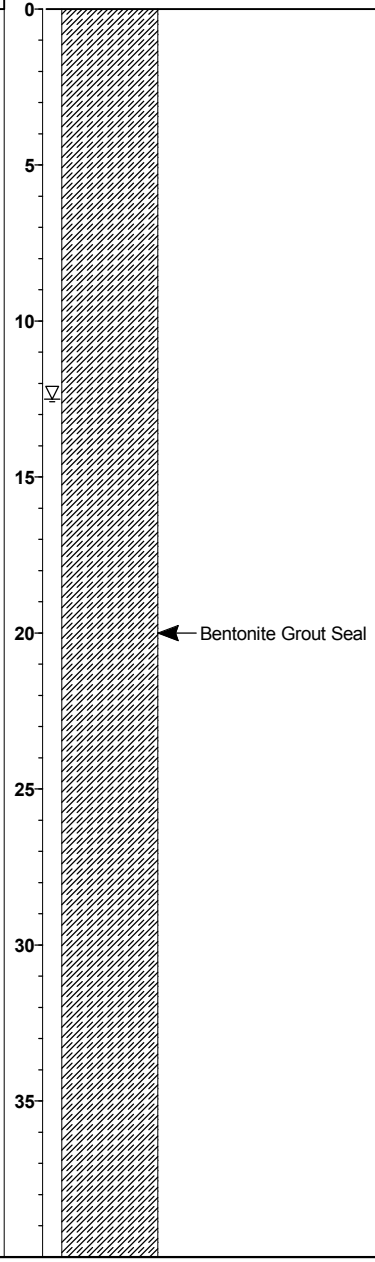
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. and 300 lb. hammers used, see notes at end of log; 30-inch drop). NWJ rods used.

Depth (meters / feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
0					FILL	Surface: gravel fill Note: Initially use 140 lb. hammer and switched to 300 lb. hammer as noted below. **ALLUVIUM**
1		4A-1	---			
5		4A-2	---		CL/ML	At 5.0 feet (bottom of Shelby tube sample 4A-1), SILTY CLAY / CLAYEY SILT (CL/ML), olive gray (5Y 4/2) with slight orange brown (oxide) mottling, moist, low to medium plasticity
2					CL/ML	At 7.5 feet (bottom of Shelby tube sample 4A-2), same SILTY CLAY / CLAYEY SILT (CL/ML) as above
3 / 10		4A-3	---			
4		4A-4	1 2 2		CL	Slightly SILTY CLAY (CL), yellowish brown (10YR 5/4), wet, soft, slightly micaceous, medium plasticity
15		4A-5	---			
5					CL	At 17.5 feet (bottom of Shelby tube sample 4A-5), same SILTY CLAY (CL) as above in sample 4A-4
6 / 20		4A-6	---			
7					CL	At 22.5 feet (bottom of Shelby tube sample 4A-6), SILTY CLAY (CL), light olive brown (2.5Y 5/3), moist to wet, rare fine gravels, medium plasticity
25		4A-7	---			
8		4A-8	---		ML	At 27.5 feet (bottom of Shelby tube sample 4A-7), SILT (ML), dark grayish olive (10YR 4/2), moist, slightly micaceous, low to medium plasticity
9 / 30		4A-9	3 4 5		CL	SILTY CLAY (CL), dark gray (5Y 4/1), moist, stiff, grades to more silt with depth
10						
35		4A-10	---			
11					CL	At 37.5 feet (bottom of Shelby tube sample 4A-10), CLAY (CL), dark greenish gray (GLEY1 4/1), moist, medium to high plasticity
12 / 40						

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Mud Rotary**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **3/1/12**
Date Ended: **3/1/12**
Boring Diameter: **5.0"**

Elevation: **147.4 ft.**
Total Depth: **61.5 ft.**

STANDARD_LOG RLF_PHASE 1B MSE BERM GEOTECH BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

Riverbend Landfill Company

JOB NUMBER: 04211001.01

Depth (meters / feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
40 / 13		4A-12	3 5 6				**ALLUVIUM (Continued)** CLAY (CL), greenish gray (GLEY1 5/1), very moist, medium to high plasticity Sharp contact in sample 4A-12 with CLAY (CL), dark greenish gray (GLEY1 4/1) with minor orange brown (oxide) mottling, moist, stiff, medium to high plasticity (more relative firmness at bottom of sample)
45 / 14		4A-13	7 7 13		SW		Driller reported harder drilling at 43 feet At 45.0 feet, FINE TO MEDIUM SAND (SW), strong brown (7.5YR 4/6) with yellowish brown (10YR 5/6) motting, wet, medium dense, fine to medium sand, trace to some scattered fine gravels, with two 1-inch lenses with fines
50 / 15		4A-14	12 26 50		SW		- Switched to 300 lb. hammer for sample 4A-14 and for remainder of samples - At 50 feet, GRAVELLY SAND (SW) with fines, strong brown (7.5YR 4/6) with yellowish brown (10YR 5/6) mottling, very moist, dense, fine to coarse subrounded gravel to 2-inch diameter, fine to coarse sand (f:m:c = 40:40:20)
55 / 16		4A-15	18 32 50/3"		GW		- At 55.0 feet, CLAYEY, SANDY GRAVEL (GW), yellowish brown (10YR 5/6) with slight orange brown (oxide) mottling, moist, very dense, clay 10-20 percent, fine to coarse sand (f:m:c = 40:40:20), fine to coarse subrounded gravel to 2-inch diameter - At 60 feet, SANDY GRAVEL (GW), very dark gray (5Y 3/1), medium dense, fine to coarse sand, fine to coarse subrounded gravel to 1.5-inch diameter
60 / 17		4A-16	10 25 42		GW GC		- Contact in bottom ring with SANDY, CLAYEY GRAVEL (GC), dark gray (5Y 4/1), moist, predominantly medium and coarse sand, fine to coarse subrounded gravel to 2-inch diameter

Total Depth = 61.5 feet

(Northing 2888.126, Easting 4026.358)

NOTES:

1. Drilled adjacent borehole on 3/6/12 with hollow stem augers to collect bulk soil cuttings samples 4A-17 (from 2.0 to 5.0 feet) and 4A-18 (from 5.0 to 10.0 feet).

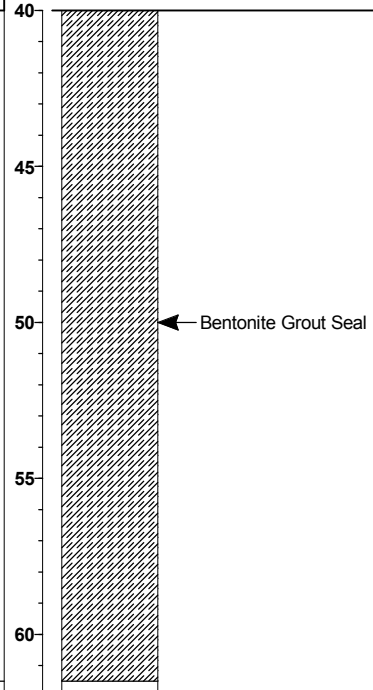
2. Initially used 140 lb. hammer for sample collection; switched to 300 lb. hammer before collecting sample 4A-14 at 50 feet and for remainder of borehole. Hammers not used for Shelby tube samples.

3. 36-inch long Shelby tube samples were pushed 30 inches only.

4. Shallow (Silt-Clay unit) groundwater encountered at 12.5 feet during drilling. Deep (Sand-Gravel unit) groundwater encountered at 45.0 feet during drilling.

5. Refer to compilation of labortaory test data by Geosyntec Consultants, Inc., for soil test information.

Completion Detail



SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-04B

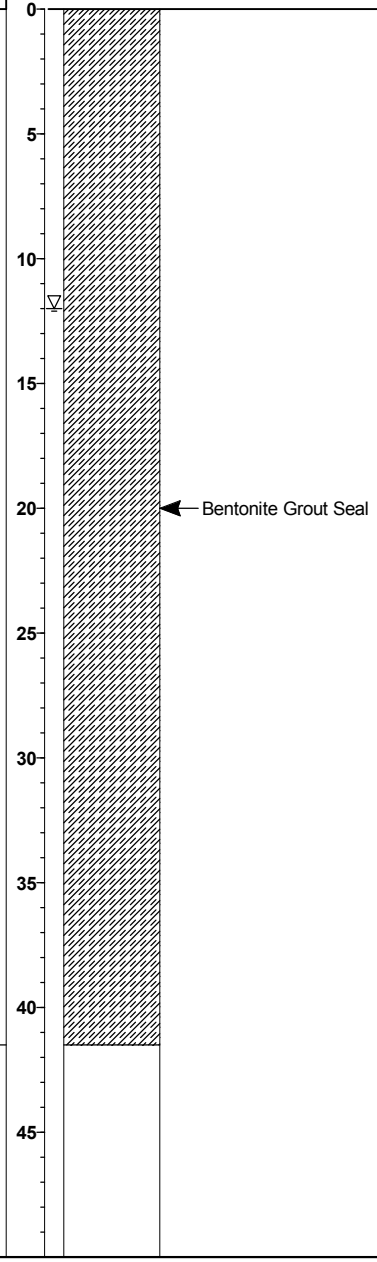
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. hammer; 30-inch drop). NWJ rods used.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
							Surface: gravel fill
							ALLUVIUM
			4B-1	---			
	5		4B-2	---		ML	5.0 feet (bottom of Shelby tube sample 4B-1), slightly CLAYEY SILT (ML), dark olive gray (5Y 3/2) with minor orange brown (oxide) mottling, moist, low to medium plasticity
						ML	At 7.5 feet (bottom of Shelby tube sample 4B-2), SILTY CLAY (CL), light olive brown (2.5Y 5/3) with orange brown (oxide) mottling, very moist, medium plasticity
	10		4B-3	---			
			4B-4	1 2 2		CL/ML	SILTY CLAY / CLAYEY SILT (ML/CL), dark yellowish brown (10YR 4/4), wet, soft, medium plasticity Grades to SILTY CLAY (CL) at bottom of sample
	15		4B-5	---			
						ML	At 17.5 feet (bottom of Shelby tube sample 4B-5), CLAYEY SILT (ML), dark yellowish brown (10YR 4/4), wet, faintly micaceous, low to medium plasticity
	20		4B-6	---			
						ML	At 22.5 feet (bottom of Shelby tube sample 4B-6), slightly CLAYEY SILT (ML), light olive brown (2.5Y 5/4), wet, slightly crumbly texture, low to medium plasticity
	25		4B-7	---			
			4B-8	3 4 8		ML	SILT (ML), dark greenish gray (GLEY1 4/1), wet at top of sample 4B-8 grading to very moist, stiff, low to medium plasticity
	30		4B-9	---			Could only push Shelby tube sample 4B-9 24 inches
			4B-10	---		ML	At 32.0 feet (bottom of Shelby tube sample 4B-9), CLAYEY SILT (ML), dark greenish gray (GLEY1 4/1), wet, very moist, low to medium plasticity
	35					ML	At 34.5 feet (bottom of Shelby tube sample 4B-10), same CLAYEY SILT (ML) as above in sample 4B-9
			4B-11	---			Only 4 inch recovery in Shelby tube sample 4B-11; did not retain sample
	40		4B-12	2 5 9		CL	CLAY (CL), very dark greenish gray (GLEY1 3/1) with slight orange brown (oxide) mottling), moist, stiff, medium to high plasticity
							Total Depth = 41.5 feet
							(Northing 2858.555, Easting 3904.450)
	45						NOTES: 1. 36-inch long Shelby tube samples were pushed 30 inches only. 2. Used 140 lb. hammer throughout entire borehole for SPT sample collection. 3. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.
0	0						
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15	50						

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Mud Rotary**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **3/2/12**
Date Ended: **3/2/12**
Boring Diameter: **5.0"**

Elevation: **146.3 ft.**
Total Depth: **41.5 ft.**

STANDARD_LOG RLF_PHASE 1B MSE BERM GEOTECH BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-05A

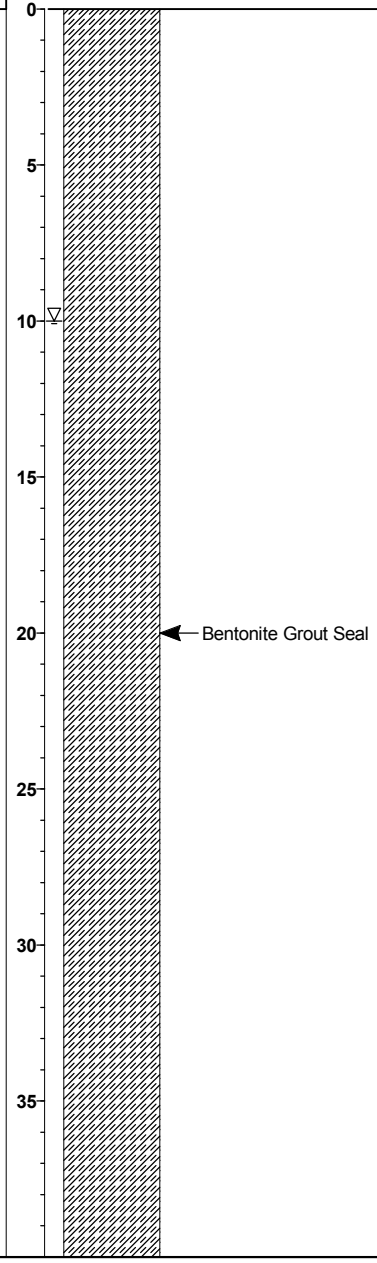
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. and 300 lb. hammers used, see notes at end of log; 30-inch drop). NWJ rods used.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
0	0					FILL	Surface: gravel fill Initially used 140 lb. hammer and switched to 300 lb. hammer as noted below. **ALLUVIUM**
1			5A-1	---			
	5		5A-2	0 (push)		CL	SILTY CLAY (CL), mottled very dark grayish brown (10YR 3/2) and dark yellowish brown (10YR 4/6), very moist, soft, some black soft carbonaceous nodules, medium plasticity
2			5A-3	---			
3	10					CL	At 10.0 feet (bottom of Shelby tube sample 5A-3), same SILTY CLAY (CL) as above but only slight dark grayish brown mottling, wet
4			5A-4	---			
	15					ML	At 15.0 feet (bottom of Shelby tube sample 5A-4), CLAYEY SILT (ML), yellowish brown (10YR 5/4), wet, medium plasticity
5			5A-5	---			
6	20		5A-6	1 3 3		CL	Same SILTY CLAY (CL) as above in sample 5A-4, with 1.5-inch lens of clayey silt, firm
7			5A-7	---			
	25					ML	At 25 feet (bottom of Shelby tube sample 5A-7), CLAYEY SILT (ML), dark gray (5Y 4/1) with slight greenish tint, moist, low to medium plasticity
8			5A-8	---			
9	30					CL/ML	At 30 feet (bottom of Shelby tube sample 5A-8), SILTY CLAY / CLAYEY SILT (CL/ML), dark gray (5Y 4/1), moist, low to medium plasticity, crumbly texture
10			5A-9	---			
	35					CH	At 35.0 feet (bottom of Shelby tube sample 5A-9), CLAY (CL), dark greenish gray (GLEY1 4/1) with minor orange brown (oxide) mottling, moist, high plasticity
11			5A-10	---			Could only push Shelby tube sample 5A-10 22 inches.
12	40					SM	At bottom of sample, SILTY FINE SAND (SM), yellowish brown (10YR 5/4) with moderate orange brown (oxide) mottling, moist, silt 20 - 30 percent

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Mud Rotary**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **2/29/12**
Date Ended: **3/1/12**
Boring Diameter: **5.0"**

Elevation: **139.1 ft.**
Total Depth: **70.3 ft.**

STANDARD_LOG RLF_PHASE 1B MSE BERM GEOTECH BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

Riverbend Landfill Company

JOB NUMBER: 04211001.01

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
12.8	40		5A-11	6 9 23		SM SW		**ALLUVIUM (Continued)** At 40 feet, same SILTY FINE SAND (SM) as above - Sharp contact with GRAVELLY SAND (SW) with fines, strong brown (7.5 YR 4/6) with abundant orange brown (oxide) mottling, very moist, dense, fine subrounded gravel 10 - 20 percent, fine to coarse sand, very weathered appearance
13.7	45		5A-12	26 50/4"		SC		- At 44 feet, driller reported abundant gravel encountered - At 45 feet, GRAVELLY, CLAYEY SAND (SC), mottled light olive brown (2.5Y 5/3) and yellowish brown (10YR 5/4) with abundant orange brown (oxide) mottling, moist, dense, fine to coarse subrounded gravel to 1-inch diameter 10 - 20 percent, fine to coarse sand (f:m:c = 60:30:10)
15.2	50		5A-13	14 21 36		GW		- Switched to 300 lb. hammer for sample 5A-13 and remaining samples - At 50 feet, SANDY GRAVEL (GW), brown (7.5Y 4/4) with abundant orange brown (oxide) mottling, wet, dense, fine to coarse sand (f:m:c = 60:30:10), fine to coarse subrounded gravel to 2-inch diameter, weathered appearance
16.8	55		5A-14	5 7 17		SM SW/GW		At 55 feet, SILTY FINE SAND (SM), dark gray (2.5Y 4/1), wet, medium dense, silty 20 - 30 percent, grades to fine to coarse sand Quickly grades to GRAVELLY SAND / SANDY GRAVEL (SW/GW), same color as above, fine to coarse sand (f:m:c = 20:40:40), fine to coarse subrounded gravel to 1-inch diameter
18.3	60		5A-15	9 9 12		SW/GW		At 60 feet, same GRAVELLY SAND / SANDY GRAVEL (SW/GW) as above Contact in sample with same SW/GW, but dark gray (2.5Y 4/1), fine to coarse sand (f:m:c = 40:40:20), gravels to 1/2-inch diameter, medium dense
19.8	65		5A-16	7 8 6		SW/GW		Same as above but loose. Primarily large piece of wood in sample shoe At 68 feet, driller reported much harder drilling
21.3	70		5A-17	50/3"		SLST		At 70 feet, SILTSTONE (SLST) with some fine sand, dark gray (2.5Y N4), moist, hard (moderately indurated), scattered white small nodules (1/16 to 1/8 inch)
22.8	75							
24.4	80							
25.9	85							

Total Depth = 70.3 feet
(Northing 2586.445, Easting 3967.732)

NOTES:
1. Drilled adjacent borehole on 3/2/12 with hollow stem augers to collect bulk soil cuttings samples 5A-18 (from 2.0 to 5.0 feet) and 5A-19 (from 5.0 to 10.0 feet).

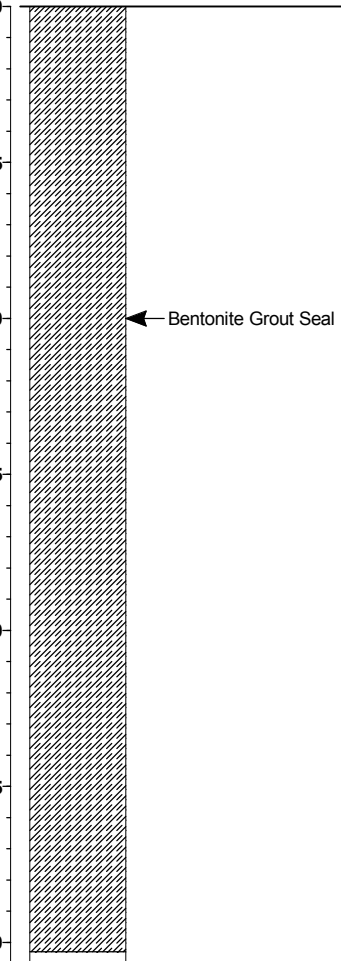
2. Initially used 140 lb. hammer for sample collection; switched to 300 lb. hammer before collecting sample 5A-13 at 50 feet and for remainder of borehole. Hammers not used for Shelby tube samples.

3. 36-inch long Shelby tube samples were pushed 30 inches only.

4. Shallow (Silt-Clay unit) groundwater encountered at 12.5 feet during drilling. Deep (Sand-Gravel unit) groundwater encountered at 50.0 feet during drilling.

5. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.

Completion Detail



SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-05B

Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

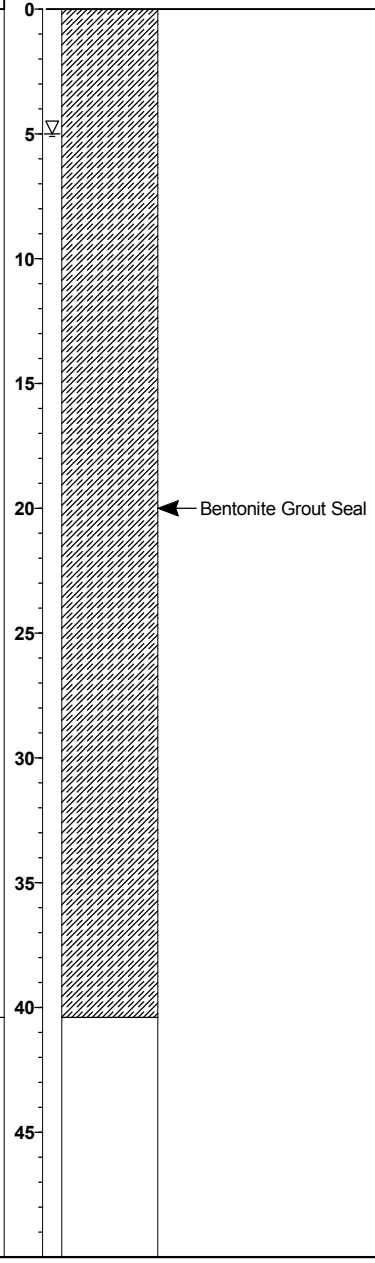
REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. and 300 lb. hammers used, see notes at end of log; 30-inch drop). NWJ rods used.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
							Surface: Grass **ALLUVIUM**
			5B-1	---			
			5B-2	0 2 3		CH	CLAY (CH) with sand, mottled dark yellowish brown (10YR 3/6) and dark grayish brown (2.5Y 4/2), wet, firm, high plasticity
			5B-3	---			
						CH	At 10.0 feet (bottom of Shelby tube sample 5B-3), CLAY (CH), grayish brown (2.5Y 5/2) with some orange brown (oxide) mottling, wet, high plasticity
			5B-4	---			
			5B-5	---		CH	At 15.0 feet (bottom of Shelby tube sample 5B-4), SILTY CLAY (CH), very dark greenish gray (GLEY1 3/1), very moist, high plasticity Drilled/sampled to 17.5 feet on 3/5/12, and completed remainder of borehole on 3/6/12
			5B-6	2 3 4		CH	At 17.5 feet, same SILTY CLAY (CH) as above but with few scattered rootlets, firm
			5B-7	---			
						CH	At 22.5 feet (bottom of Shelby tube sample 5B-7), SILTY CLAY (CH), dark greenish gray (GLEY1 4/1), very moist to wet, few scattered rootlets, high plasticity
			5B-8	---			- Driller reported last 3 inches of push for Shelby tube sample 5B-8 was hard, and tube was bent at the bottom
						GW	- At 27.5 feet (bottom of Shelby tube sample 5B-8), SANDY GRAVEL (GW), mottled dark yellowish brown (10YR 4/6) and olive gray (5Y 4/2), moist, fine to coarse sand (f:m:c = 20:40:40), fine to coarse subrounded gravel to 2-inch diameter - Switched to 300 lb. hammer for sample 5B-9 and for remainder of samples
			5B-9	13 26 50/4"			- At 32.0 feet, GRAVELLY SAND / SANDY GRAVEL (SW/GW) with clay, yellowish brown (10YR 5/6) with orange brown (oxide) mottling, very moist, very dense, fine to coarse sand (f:m:c = 40:40:20), fine to coarse subrounded gravel to 2-inch diameter
			5B-10	34 50/4"		SW/GW	- At 36.0 feet, same GRAVELLY SAND / SANDY GRAVEL (SW/GW) as above in sample 5B-9 - At 40 feet, SANDY GRAVEL (GW), dark greenish gray (GLEY1 3/1), wet, very dense, fine to coarse sand (f:m:c = 40:40:20), fine to coarse subrounded gravel to 1-inch diameter
			5B-11	50/5"		GW	

Total Depth = 40.4 feet (N. 2394.709, E. 3957.493)

NOTES:
1. 36-inch long Shelby tube samples were pushed 30 inches only.
2. Initially used 140 lb. hammer for sample collection; switched to 300 lb. hammer for sample 5B-9 and remaining samples.
3. Shallow (Silt-Clay unit) and deep (Sand-Gravel unit) groundwater encountered at 5.0 and 40 feet, respectively, during drilling.
4. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.

Completion Detail



Drilling Company:	**Major Drilling Environmental, LLC**
Drilling Method:	**Mud Rotary**
Logged By:	**David Lamadrid**
Sampling Method:	**See legend for explanation of sample types**

Date Started:	**3/5/12**	Elevation:	**125.9 ft.**
Date Ended:	**3/6/12**	Total Depth:	**40.4 ft.**
Boring Diameter:	**5.0"**		

STANDARD_LOG RLF_PHASE 1B MSE BERM GEOTECH BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-06A

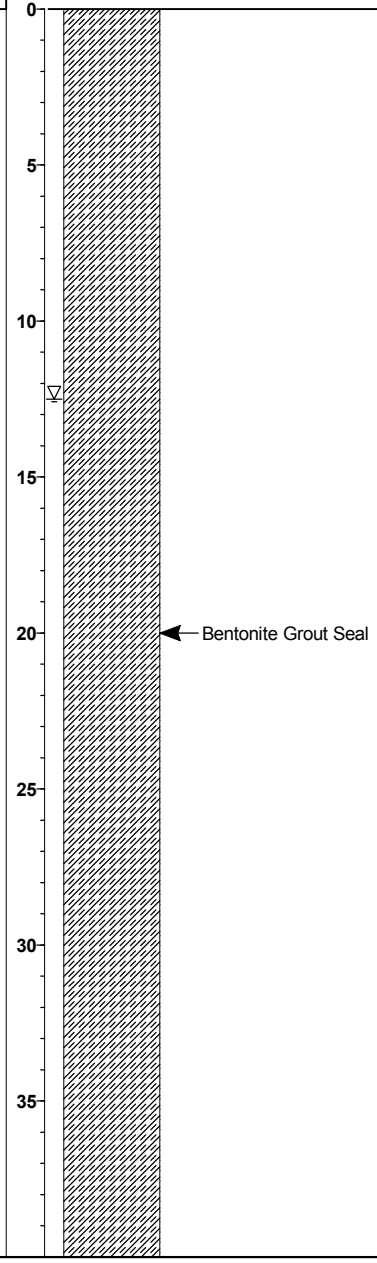
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. and 300 lb. hammers used, see notes at end of log; 30-inch drop). NWJ rods used.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
							Surface: Grass Note: Initially used 140 lb. hammer and switched to 300 lb. hammer as noted below.
1			6A-1	---			**ALLUVIUM**
	5		6A-2	---		CL	At 5.0 feet (bottom of Shelby tube sample 6A-1), SILTY CLAY (CL), brown (10YR 4/3) with pale brown (2.5Y 7/3) mottling, very moist, medium plasticity
2						CL	Can only push Shelby tube sample 6A-2 24.0 inches.
			6A-3	---			At bottom of sample, SILTY CLAY (CL), dark gray (2.5Y 4/1), very moist, medium plasticity
3	10		6A-4	---		CL	At 10.0 feet (bottom of Shelby tube sample 6A-3), SILTY CLAY (CL), dark gray (2.5Y 4/1) with slight orange brown (oxide) mottling, moist, noticeably more firm than above
4						CL	At 12.5 feet (bottom of Shelby tube ample 6A-4), SILTY CLAY (CL), very dark grayish brown (10YR 3/2), wet, low to medium plasticity
	15		6A-5	---			
5							
			6A-6	3 3 7		CL	SILTY CLAY (CL), light yellowish brown (2.5Y 6/3) with moderate orange brown (oxide) mottling, moist, stiff, low to medium plasticity
6	20		6A-7	---			
7						CL	At 22.5 feet (bottom of Shelby tube sample 6A-7), same SILTY CLAY (CL) as above in sample 6A-6
	25		6A-8	---			
8						CL	At 27.5 feet (bottom of Shelby tube sample 6A-8), SILTY CLAY (CL), dark grayish green (5GY 4/2), moist, low to medium plasticity, crumbly texture
9	30		6A-9	---			
10			6A-10	2 5 7		CL/CH	CLAY (CL/CH), dark greenish gray (GLEY 4/1), moist, stiff, medium to high plasticity
11	35		6A-11	---		CH	34-inch recovery in Shelby tube sample 6A-11 likely due to swelling. At top of sample, CLAY as above in sample 6A-10 but high plasticity
						ML	At bottom of sample 6A-11, SILT (ML) with clay, dark greenish gray (GLEY1 4/1) with some orange brown (oxide) mottling, slightly micaceous, low to medium plasticity
12	40						

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Mud Rotary**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **2/28/12**
Date Ended: **2/29/12**
Boring Diameter: **5.0"**

Elevation: **140.0 ft.**
Total Depth: **67.3 ft.**

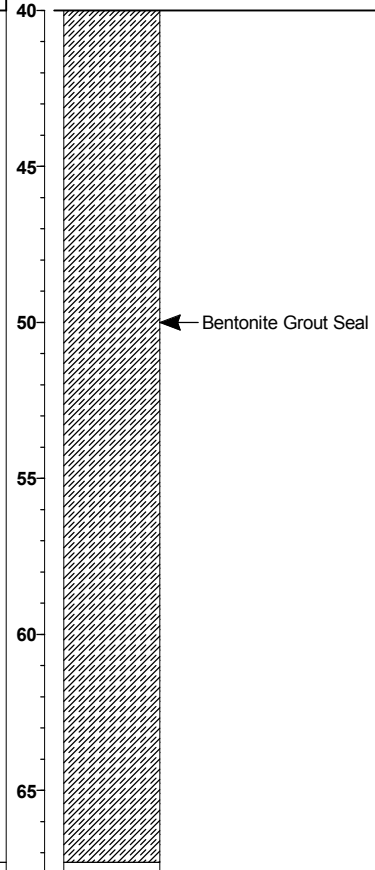
STANDARD_LOG RLF_PHASE 1B MSE BERM GEOTECH BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

Riverbend Landfill Company

JOB NUMBER: 04211001.01

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
	40		6A-12	---				**ALLUVIUM (Continued)**
13			6A-13	9 32 33		SM SM		SILTY FINE SAND (SM), yellowish brown (10YR 5/6), moist, silt 10 - 20 percent At 43.0 feet, sharp contact with SILTY SAND (SM) with fine gravel, strong brown (7.5YR 4/6) with orange brown (oxide) mottling, moist, hard, silt 10 - 20 percent, fine to coarse sand (f:m:c = 50:30:20), weathered appearance
14	45							At 46 feet, driller reported gravel encountered. Switched to 300 lb. hammer before collecting sample 6A-14 and for remainder of samples
15								
16	50		6A-14	20 40 50/2"		GC		SANDY, CLAYEY GRAVEL (GC), mottled dark grayish brown (10YR 4/2) and light yellowish brown (2.5Y 6/4), moist, hard, fine to medium sand 10 - 20 percent, fine to coarse subrounded gravel to 1.5-inch diameter
17	55		6A-15	23 16 16		GW SW		SANDY GRAVEL (GW), black (5Y 2.5/1), wet, medium dense, fine to coarse sand (f:m:c: = 20:40:40) 20 - 30 percent, fine to coarse subrounded gravel to 2.5-inch diameter Contact with GRAVELLY SAND (SW), dark yellowish brown (10YR 3/6), wet, medium dense, fine gravel to 1/2-inch diameter 10 - 20 percent, fine to medium sand (approximately 50/50)
18								
19	60		6A-16 6A-17	5 8 9 12 22 30		SM SM		Sample 6A-16, no recovery. In sample shoe is SILTY FINE SAND (SM), very dark gray (2.5Y 3/1), wet, silt 5 - 10 percent Sample 6A-17, same SILTY SAND (SM) as above but with 10 - 20 percent predominantly fine gravel to 1-inch diameter, increasing silt and gravel content with depth, medium dense to dense
20	65							At 67.0 feet, SILTSTONE (SLST) with some fine sand, dark gray (2.5Y N4), moist, hard (moderately indurated), scattered while small nodules (1/16 to 1/8 inch)
			6A-18	50/3"		SLST		
21								Total Depth = 67.3 feet (Northing 2550.768, Easting 4122.694)
22	70							NOTES: 1. Drilled adjacent borehole on 3/2/12 with hollow stem augers to collect bulk soil cuttings samples 6A-19 (0 to 5.0 feet) and 6A-20 (from 5.0 to 10.0 feet).
23	75							2. Initially used 140 lb. hammer for sample collection; switched to 300 lb. hammer before collected sample 6A-14 at 50 feet and for remainder of borehole. Hammer not used for Shelby tube samples. 3. 36-inch long Shelby tube samples were pushed 30 inches only.
24	80							4. Shallow (Silt-Clay unit) groundwater encountered at 12.5 feet during drilling. Deep (Sand-Gravel unit) groundwater encountered at 55.0 feet during drilling.
25								5. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.
26	85							

Completion Detail



SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-06B

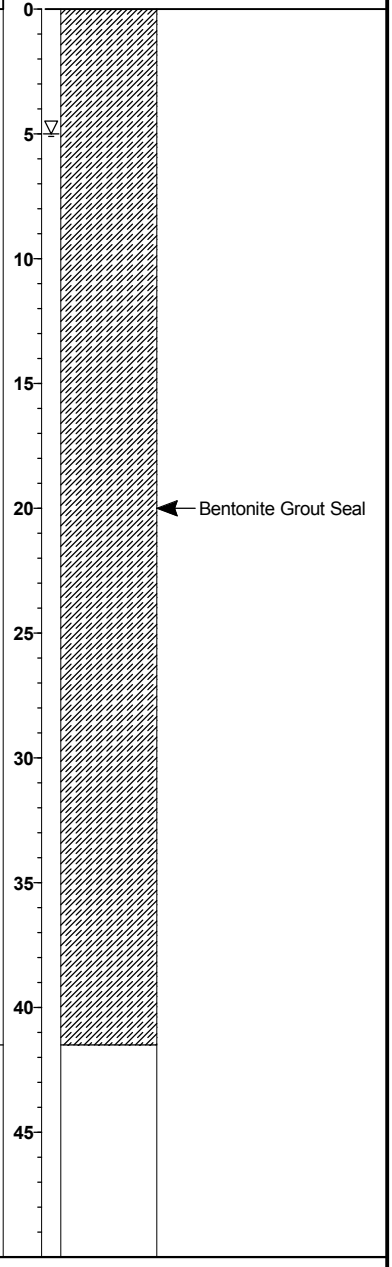
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig with automatic hammer (140 lb. and 300 lb. hammers used, see notes at end of log; 30-inch drop). NWJ rods used.

Depth (meters / feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0							Surface: grass Note: Initially used 140 lb. hammer and switched to 300 lb. hammer as noted below
1		6B-1	---				**ALLUVIUM**
5		6B-2	---		CL/CH		At 5.0 feet (bottom of Shelby tube sample 6B-1), CLAY (CL/CH), dark grayish brown (2.5Y 4/2) with minor minor orange brown (oxide) mottling, wet, medium to high plasticity
2					CL		At 7.5 feet (bottom of Shelby tube sample 6B-2), SILTY CLAY (CL), light olive brown (2.5Y 5/3) with moderate orange brown (oxide) mottling, wet, medium plasticity
3 / 10		6B-3	---				
4		6B-4	0 0 4		CH		At top of sample 6B-4, CLAY (CH), yellowish brown (10YR 5/4), wet, high plasticity
15		6B-5	---		CL		Sharp contact with CLAY (CL), dark gray (5Y 4/1), moist, noticeably more firm than above, medium plasticity
5		6B-6	---		CL		At 17.5 feet (bottom of Shelby tube sample 6B-5), SILTY CLAY (CL), dark greenish gray (GLEY1 4/1), moist, medium plasticity
6 / 20							At 20 feet (bottom of Shelby tube sample 6B-6), same SILTY CLAY (CL) but slightly crumbly texture
7							- Could only push Shelby tube sample 6B-7 20 inches. Disturbed gravels observed at bottom of sample. Switched to 300 lb. hammer for sample 6B-8 and remaining samples
25		6B-7	---		ML		- At 26.5 feet, CLAYEY GRAVELLY SAND / SANDY GRAVEL (SC/GC), strong brown (7.5YR 4/6) with abundant orange brown (oxide) mottling, moist, medium dense, clay 10 - 20 percent, fine to coarse sand (f:m:c = 40:30:30), fine to coarse subrounded gravel to 1.5-inch diameter, weathered appearance
8		6B-8	15 18 32		SC/GC		
9 / 30		6B-9	30 20 37		SC/GC		- At 30 feet, Same SC/GC as above - At 35.0 feet, SANDY CLAYEY GRAVEL (GC), mottled pale brown (2.5Y 8/4) and dark yellowish brown (10YR 4/4), very moist, dense, fine to coarse sand (f:m:c = 20:40:40) 10 - 20 percent, clay 10 - 20 percent, fine subrounded gravel to 3/4-inch diameter
10							- Sharp contact in sample 6B-10 with SANDY GRAVEL (GW) with fines, mottled strong brown (7.5YR 4/6) and light yellowish brown (2.5Y 6/4), very moist, dense, fine to coarse sand (f:m:c = 40:30:30), fine to coarse subrounded gravel to 2-inch diameter
35 / 11		6B-10	15 30 50/5"		GC GW		
12 / 40		6B-11	6 11 20		GW SW		- At 40 feet, same SANDY GRAVEL (GW) as above but with trace fines, wet. Sharp contact with GRAVELLY SAND (SW), dark greenish gray (GLEY1 3/1), wet, medium dense, trace fines, predominantly fine gravel, fine to coarse sand (f:m:c = 40:40:20)
13							Total Depth = 31.5 feet (N. 2413.173, E. 4135.229)
45 / 14							NOTES: 1. 36-in. long Shelby tubes were pushed 30 in. only. 2. Initially used 140 lb. hammer for sample collection; switched to 300 lb. hammer before collecting sample 6B-8 and remaining samples. 3. Shallow and deep groundwater encountered at 5.0 and 40.0 feet, respectively, during drilling. 4. Refer to compilation of laboratory test data by Geosyntec consultants, Inc., for soil test information.
15 / 50							

Completion Detail



Drilling Company:	**Major Drilling Environmental, LLC**	Date Started:	**3/5/12**
Drilling Method:	**Mud Rotary**	Date Ended:	**3/5/12**
Logged By:	**David Lamadrid**	Boring Diameter:	**5.0"**
Sampling Method:	**See legend for explanation of sample types**	Elevation:	**124.5 ft.**
		Total Depth:	**41.5 ft.**

STANDARD_LOG RLF_PHASE 1B MSE BERM GEOTECH BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-07

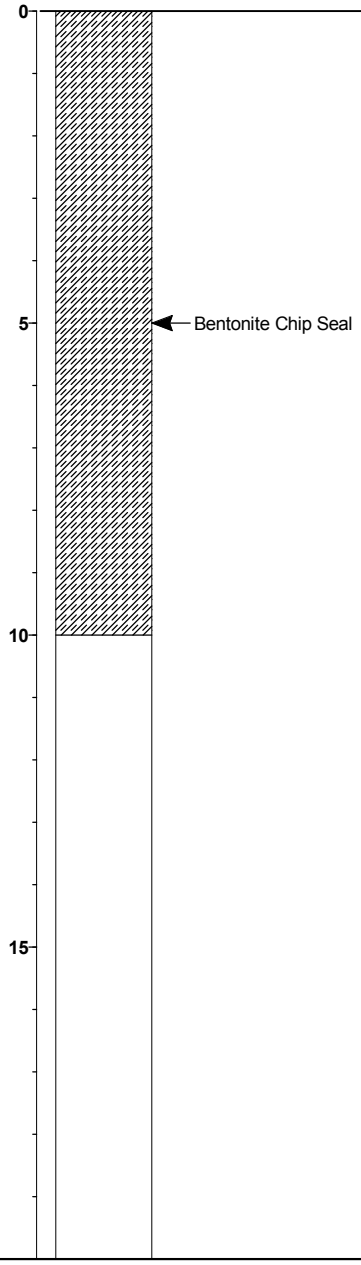
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig.

Depth (meters / feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0					FILL		Surface: gravel fill
1		7-1	---		CL		**ALLUVIUM** SILTY CLAY (CL), yellowish brown, very moist
5		7-2	---		CL		Grades to very moist to wet
10							Total Depth = 10.0 feet (Northing 3700.361, Easting 3967.166) NOTES: 1. Groundwater not encountered during drilling. 2. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc. for soil test information.

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Hollow Stem Auger**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **3/6/12**
Date Ended: **3/6/12**
Boring Diameter: **8.0"**

Elevation: **149.9 ft.**
Total Depth: **10.0 ft.**

STANDARD_LOG RLF_PHASE 1B MSE BERM GEOTECH SHALLOW BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-08

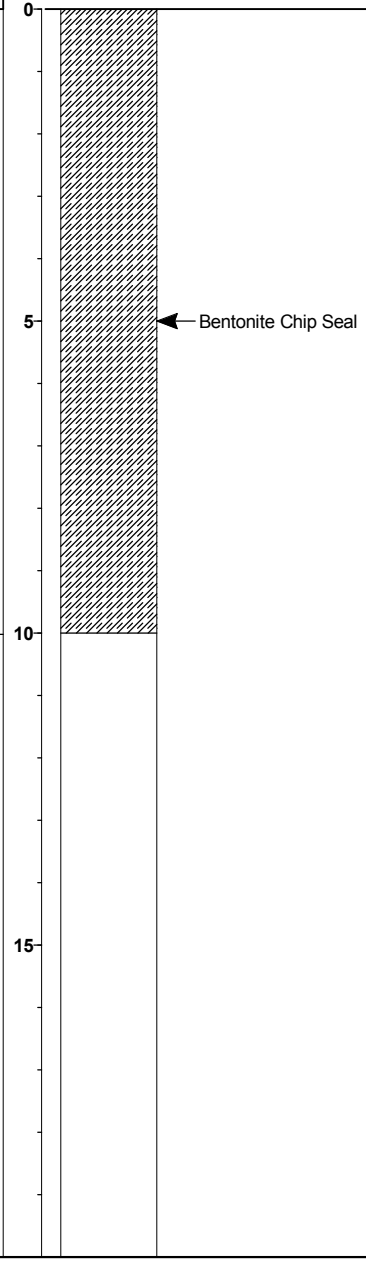
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					FILL		Surface: gravel fill
	1		8-1	---		CL		**ALLUVIUM** SILTY CLAY (CL), grayish brown, very moist
	2							
	3							
1								
	4							Becomes very moist to wet
	5		8-2	---		CL		
	6							
2								
	7							
	8							
	9							
3	10							Total Depth = 10.0 feet (Northing 3300.262, Easting 3956.582)
	11							
	12							NOTES: 1. Groundwater not encountered during drilling. 2. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.
4	13							
	14							
	15							
5	16							
	17							
	18							
	19							
6	20							

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Hollow Stem Auger**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **3/6/12**
Date Ended: **3/6/12**
Boring Diameter: **8.0"**

Elevation: **149.2 ft.**
Total Depth: **10.0 ft.**

STANDARD_LOG RLF_PHASE 1B MSE BERM GEOTECH SHALLOW BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-09

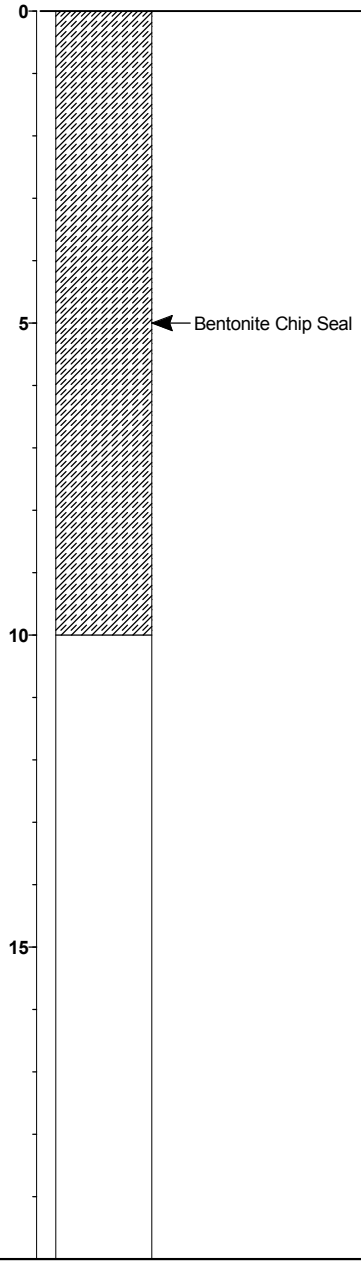
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig.

Depth (meters / feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0					FILL		Surface: gravel fill
2		9-1	---		ML		**ALLUVIUM** CLAYEY SILT (ML), yellowish brown, moist
5		9-2	---		ML		
							Grades to very moist to wet
10							Total Depth = 10.0 feet (Northing 3049.643, Easting 3999.323) NOTES: 1. Groundwater not encountered during drilling. 2. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Hollow Stem Auger**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **3/6/12**
Date Ended: **3/6/12**
Boring Diameter: **8.0"**

Elevation: **148.8 ft.**
Total Depth: **10.0 ft.**

STANDARD_LOG RLF_PHASE 1B MSE BERM GEOTECH SHALLOW BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-10

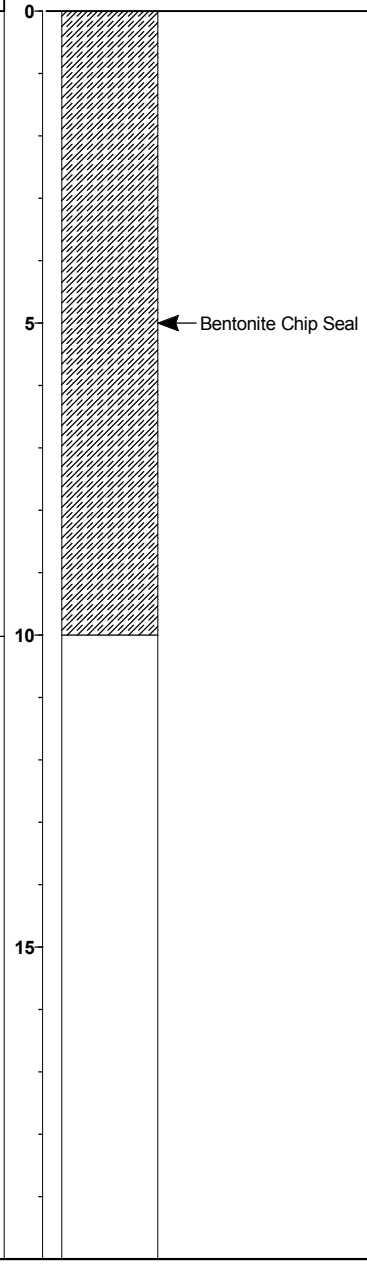
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					FILL		Surface: gravel fill
	1		10-1	---		CL		**FILL** SILTY CLAY (CL), greenish gray, moist, apparent fill soil
	2							
	3							
1	4							
	5		10-2	---		CL		
	6							
2	7							At approximately 7.0 feet, minor plastics and organics in fill soil
	8							
	9							
3	10							Total Depth = 10.0 feet (Northing 2964.379, Easting 4106.519)
	11							
	12							NOTES: 1. Groundwater not encountered during drilling. 2. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.
4	13							
	14							
	15							
5	16							
	17							
	18							
	19							
6	20							

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Hollow Stem Auger**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **3/6/12**
Date Ended: **3/6/12**
Boring Diameter: **8.0"**

Elevation: **148.3 ft.**
Total Depth: **10.0 ft.**

STANDARD_LOG RLF_PHASE 1B MSE BERM GEOTECH SHALLOW BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-11

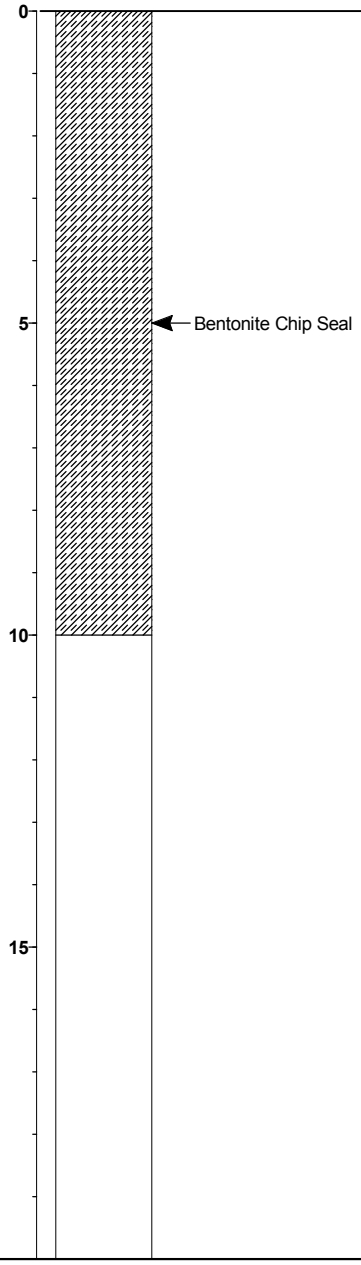
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0		11-1	---				Surface: Grass
	1					CL		**FILL** SILTY CLAY (CL), gray-brown, moist
	2					CL/ML		SILTY CLAY / CLAYEY SILT (CL/ML), greenish gray, moist, apparent fill soil
1	3							
	4							
	5		11-2	---		CL/ML		Grades to very moist
2	6							
	7							
	8							
	9							Plastic debris encountered in fill soil near bottom of borehole
3	10							Total Depth = 10.0 feet (Northing 2846.369, Easting 4129.031)
	11							
	12							NOTES: 1. Groundwater not encountered during drilling.
4	13							2. Refer to compilation of laboratory test data by Geosyntec, Inc., for soil test information.
	14							
	15							
5	16							
	17							
	18							
	19							
6	20							

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Hollow Stem Auger**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **3/6/12**
Date Ended: **3/6/12**
Boring Diameter: **8.0"**

Elevation: **148.0 ft.**
Total Depth: **10.0 ft.**

STANDARD_LOG RLF_PHASE 1B MSE BERM GEOTECH SHALLOW BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-12

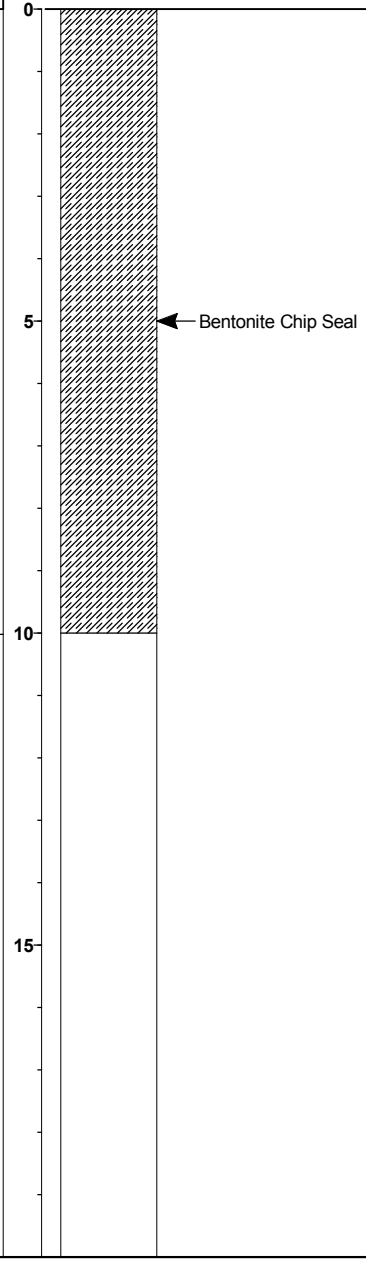
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					FILL		Surface: gravel fill
	2		12-1	---		CL		**ALLUVIUM** SILTY CLAY (CL), light bronw, very moist
1	5		12-2	---		CL		
2	6							Grades to very moist to wet
3	10							Total Depth = 10.0 feet (Northing 2710.683, Easting 3994.257) NOTES: 1. Groundwater not encountered during drilling. 2. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.
4	13							
5	15							
6	20							

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Hollow Stem Auger**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **3/2/12**
Date Ended: **3/2/12**
Boring Diameter: **8.0"**

Elevation: **143.1 ft.**
Total Depth: **10.0 ft.**

STANDARD_LOG RLF_PHASE 1B MSE BERM GEOTECH SHALLOW BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

SCS ENGINEERS

BORING LOG

14945 SW Sequoia Parkway, Suite 180
Portland, OR 97224

BORING NUMBER: GT12-13

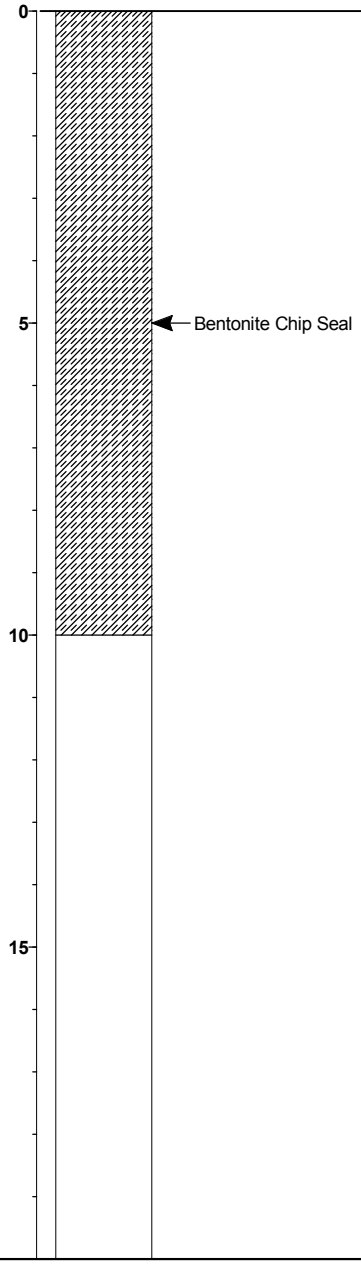
Riverbend Landfill Company
Riverbend Landfill
McMinnville, Oregon

JOB NUMBER: 04211001.01

REMARKS:
Mobile B-54 drill rig.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					FILL		Surface: gravel fill
	1		13-1	---		CH		**ALLUVIUM** SILTY CLAY (CL), brown, moist, high plasticity
1	2							
	3							
	4							
	5		13-2	---		CL		Grades to very moist, medium to high plasticity
2	6							
	7							
	8							
	9							
3	10							Total Depth = 10.0 feet (Northing 2624.516, Easting 4128.381)
	11							
	12							NOTES: 1. Groundwater not encountered during drilling. 2. Refer to compilation of laboratory test data by Geosyntec Consultants, Inc., for soil test information.
4	13							
	14							
	15							
5	16							
	17							
	18							
	19							
6	20							

Completion Detail



Drilling Company: **Major Drilling Environmental, LLC**
Drilling Method: **Hollow Stem Auger**
Logged By: **David Lamadrid**
Sampling Method: **See legend for explanation of sample types**

Date Started: **3/2/12**
Date Ended: **3/2/12**
Boring Diameter: **8.0"**

Elevation: **141.6 ft.**
Total Depth: **10.0 ft.**

STANDARD_LOG RLF_PHASE 1B MSE BERM GEOTECH SHALLOW BOREHOLE LOGS_V1.0.GPJ STD_LOG.GDT 7/17/12

Geosyntec consultants
1111 Broadway, 6th Fl
Oakland, CA 94607
Phone: (510) 836-3034
Fax: (510) 836-3036

GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-01 **SHEET** 1 **OF** 4
START DATE 8/9/2013
FINISH DATE 8/10/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 141.7 ft msl
DATUM Local
TOTAL DEPTH 99 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Surface: Brown grass and vegetation grubbed just off access road									13:30	
			140								
5	CLAY fill (CL), light brown, moist, 0-5%, fine sand, medium to high plasticity, medium stiff			1-1 C		2 3 4	7	50			
			135								Switch to 5" Wing Bit
10	Silty CLAY fill (CL), dark brown, moist, 5-10%, fine sand, medium to high plasticity, medium stiff			1-2				100			
			130								Pocket pen: 1.2 tsf
	Same but softer			1-3		0 2 2	4	100			
15	Same			1-4		1 3 2	5				
	Silty CLAY (CL), dark gray, moist, <5% fine sand, medium to high plasticity, firm		125								Cuttings: Clay, very dark gray to black
20	Silty CLAY (CL), dark brown to brown-gray with oxide mottling, moist, 5-10% fine sand, medium to high plasticity, stiff			1-5				100			
			120								Pocket pen: 2.3 tsf
				1-6		3 5 5	10	100			
25	Silty CLAY (CL), mottled dark brown and gray, moist, 5-10% fine sand, low to medium plasticity, stiff			1-7		3 5 6	11	70		14:45	
			115								Switch to 4 7/8" tricone
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2499.96
EASTING: 4488.65
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Sunny and hot, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
1111 Broadway, 6th Fl
Oakland, CA 94607
Phone: (510) 836-3034
Fax: (510) 836-3036

GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-01 **SHEET** 2 **OF** 4
START DATE 8/9/2013
FINISH DATE 8/10/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 141.7 ft msl
DATUM Local
TOTAL DEPTH 99 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane
	Clayey SILT (ML), mottled dark brown and gray, moist to wet, 5-10% fine sand, low to medium plasticity, stiff		110	1-8							Pocket pen: 1.0 tsf
	Sandy SILT (ML), dark brown, wet, 10-15% fine sand, low plasticity, stiff			1-9		4 5 5	10	100			
35	Silty CLAY (CH), dark gray mottled with black and brown, wet, medium to high plasticity, firm		105	1-10		3 3 5	8	100		16:15	
40	Silty CLAY (CH), blue-gray, wet, 10-15% fine sand, low to medium plasticity, firm			1-11				100		16:30	Pocket pen overload. End 8/9/13
	Sandy GRAVEL with silt (GW), reddish brown with dark gray mottling, wet, 1/2-inch minus subrounded gravel, 20-30% fine to coarse sand (f:m:c 20:40:40), 10-15% silty fines, dense		100	1-12		12 21 24	45	100		7:40	Begin 8/10/13
45	Same, but with 1" minus gravel		95	1-13 B C		15 40 50/3.5"	50+	100			
50	Same, but with 1" minus gravel		90	1-14		27 47 50/4"	50+	100			Cobbles Softened up a little bit
55				1-15 B C		14 12 22	34	100			
	Silty SAND (SM), dark gray-blue, wet, 60-70% fine to medium sand (f:m:c 90:10:0), trace 1/4" minus subrounded gravel, 30-40% silty fines, dense		85								
60											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2499.96
EASTING: 4488.65
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Sunny and hot, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-01 **SHEET** 3 **OF** 4
START DATE 8/9/2013
FINISH DATE 8/10/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 141.7 ft msl
DATUM Local
TOTAL DEPTH 99 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Sandy GRAVEL (GW), very dark gray with blue tint, wet, 3/4" minus subrounded gravel, 20-30% fine to coarse sand (f:m:c 10:40:50), 10-15% silty fines, dense to very dense		80	1-16		38 50/5.5"	50+	100			
65	Sandy GRAVEL with silt (GW), very dark gray to black, wet, 3/4" minus subrounded gravel, 20-30% fine to coarse sand (f:m:c 10:40:50), 20-25% silty fines, dense		75	1-17		16 22 21	43	100		09:30	
											Transition to silty sand
70	Silty SAND (SM), dark gray-blue, wet, fine to medium coarse sand (f:m:c 80:10:10), 15-25% silty fines, 20% gravel, medium dense to dense			1-18		17 14 16	30	100			
	Sandy GRAVEL with silt (GW), very dark gray to black, wet, 1" minus subrounded gravel, 20-30% sand (f:m:c 20:40:40), 20% silty fines, very dense		70	1-19 C		41 50/5.5"	50+	100			
75	Sandy GRAVEL (GW), very dark gray to olive, wet, 1" minus subrounded, 10-20% fine to medium coarse sand (f:m:c 30:30:40), 10% silty fines, very dense		65	1-20		38 50/4.5"	50+	100		10:30	
80	Sandy GRAVEL with silt (GW), very dark gray to black, wet, 1" minus subrounded gravel, 20-30% fine to coarse sand (f:m:c 20:30:50), 10% silty fines, dense		60	1-21		23 22 25	47	100			
85	Interbedded layers of silt and gravel		55	1-22 B C		8 18 24	42	100			
90											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2499.96
EASTING: 4488.65
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Sunny and hot, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-01 **SHEET** 4 **OF** 4
START DATE 8/9/2013
FINISH DATE 8/10/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 141.7 ft msl
DATUM Local
TOTAL DEPTH 99 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane
	SILT (ML), olive with blue-green tint, moist, low plasticity, very stiff to hard		50	1-23		10 14 17	31				
95	SILTSTONE, olive with blue-green tint, moist, very fine grained, highly weathered (W4), extremely weak (R0), moderately soft (H4), brittle		45	1-24		48 50/2.5"	50+				
100	End drilling at 99 ft bgs. 8/10 at 12:30. Boring backfilled by drilling contractor.		40								
105			35								
110			30								
115			25								
120											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2499.96
EASTING: 4488.65
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Sunny and hot, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-02 **SHEET** 1 **OF** 3
START DATE 8/10/2013
FINISH DATE 8/12/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 148.3 ft msl
DATUM Local
TOTAL DEPTH 73.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Surface: 0.5' of road base GRAVEL (GW), light gray, dry, 3" minus subrounded gravel, 10-20% nonplastic fines									14:30	8/10/13 - 2' with 4 1/4" HSA
										7:45	8/12/13
			145								
5	SILT fill (ML), very dark brown to black, moist, 0-5% fine sand, medium to high plasticity, stiff			2-1		4 4 4	8	100			
			140								
10	SILT fill (ML), very dark brown to gray, moist, 0-5% fine sand, medium to high plasticity, very stiff			2-2				87			
	Same as above		135	2-3		4 9 10	19	100			Pocket pen: 4.5 tsf
15	SILT fill (ML), dark brown, moist, 5-10% fine sand, low plasticity, very stiff			2-4 C		5 9 12	21	100			
			130								
20	Clayey SILT (ML), dark brown, moist, 5-10% fine sand, low plastcity, stiff to very stiff			2-5				85			
	Same as above		125	2-6		3 4 4	8	100		9:30	Pocket pen: 3.8 tsf
25	Clayey silt (ML), dark brown mottled with gray, moist, 5-10% fine sand, low to medium plasticity, stiff			2-7		4 5 7	12	90			
			120								
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2394.63
EASTING: 4788.02
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani
NOTES: Sunny and hot, 60s in the morning, high temperature in the 80s, humid, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-02 **SHEET** 2 **OF** 3
START DATE 8/10/2013
FINISH DATE 8/12/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 148.3 ft msl
DATUM Local
TOTAL DEPTH 73.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Silty CLAY (CH), mottled dark brown and dark gray, moist, medium to high plasticity, stiff			2-8				67			
	Same as above		115	2-9		4 5 7	12	100			Pocket pen: 1.7 tsf
35	Same as above			2-10 C		3 5 8	13	67			
			110								
40	Silty CLAY (CH), dark gray with brown mottling, moist, 5-10% fine sand, medium to high plasticity, firm			2-11				100		10:55	
	Same as above		105	2-12		0 3 4	7	100			Pocket pen: 1.3 tsf
45	Silty CLAY (CH), dark gray with brown and black mottling, moist, 10-15% fine sand, medium to high plasticity, stiff			2-13 C		2 4 5	9	80			
			100								
50	Sandy SILT (ML), dark gray with oxide mottling, moist to wet, 30-40% fine sand, firm, very stiff			2-14				100			
	Same as above		95	2-15		2 2 3	5	100			Pocket pen: 2.1 tsf Switch to 4 7/8" tricone
55	Sandy GRAVEL with silt (GW), dark gray to reddish brown, moist to wet, 20-25% fine to coarse sand (f:m:c 30:40:30), 20-25% silty fines, very dense		90	2-16 B C		14 21 53	50+	70			
60											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2394.63
EASTING: 4788.02
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani
NOTES: Sunny and hot, 60s in the morning, high temperature in the 80s, humid, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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BOREHOLE LOG

BORING GT13-02 **SHEET** 3 **OF** 3
START DATE 8/10/2013
FINISH DATE 8/12/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 148.3 ft msl
DATUM Local
TOTAL DEPTH 73.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Sandy GRAVEL (GW), reddish brown with black gravels, wet, 1/2" minus subrounded, 20-30% fine to coarse sand (f:m:c 20:40:40), 10-15% silty fines, very dense			2-17		42 50/4.7"	50+	100		13:40	
			85								
65	Same as above			2-18 B C		23 23 50	50+	100			
			80								
70	SILTSTONE, Olive w/blue-green tint and black speckling, highly weathered (W4), extremely weak (R0), moderately hard (H5), brittle			2-19		50/1"	50+	100		14:30	
			75								
	End drilling at 73.5 ft bgs. 8/12/13 at 14:30. Boring backfilled by drilling contractor.										
75											
			70								
80											
			65								
85											
			60								
90											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2394.63
EASTING: 4788.02
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani
NOTES: Sunny and hot, 60s in the morning, high temperature in the 80s, humid, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-03 **SHEET** 1 **OF** 3
START DATE 8/6/2013
FINISH DATE 8/7/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 145.5 ft msl
DATUM Local
TOTAL DEPTH 72.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Road base GRAVEL (GW), light brown, dry to moist, 3" minus subrounded gravel, 20% nonplastic fines	145						0 0 0 20.9	15:30 7:40	8/6/13 - 2' with 4 1/4" HSA 8/7/13
5	CLAY fill (CL), dark brown mottled with black, moist, medium to high plasticity, soft to firm	140	3-1		1 2 2	4	72			
10	CLAY fill (CL), dark gray with brown mottling, moist, medium to high plasticity, soft to firm	135	3-2		0 2 3	5	83			
15	Silty CLAY fill (CL), mottled dark gray and brown, moist, medium to high plasticity, soft to firm	130	3-3				70			
	Same as above		3-4		2 2 3	5	100			Pocket pen: 3.5 tsf
20	Clayey SILT (MH), dark gray mottled with brown, moist, medium to high plasticity, soft to firm	125	3-5		OST		100			
	Stiff		3-6		0 2 3	5	100	0 0 0 20.7	9:00	Pocket pen: 1.7 tsf
25	Silty CLAY (CL-ML), dark gray with brown mottling, moist, medium plasticity, soft to firm	120	3-7 C		2 2 3	5	50			
										Switch to 4 7/8" bit
30										Driller notes stiffening

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2198.3
EASTING: 4926.63
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-03 **SHEET** 2 **OF** 3
START DATE 8/6/2013
FINISH DATE 8/7/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 145.5 ft msl
DATUM Local
TOTAL DEPTH 72.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Silty CLAY (CH), dark brown with gray mottling, moist, medium to high plasticity, firm to stiff		115	3-8				100			Pocket pen: 3.0 tsf Switch to 5" bit
35	Same as above		110	3-9 B C		2 3 5	8	75	0 0 0 22.0	10:00	
40	Silty CLAY (CH), mottled dark brown and gray, moist, 5-10% fine sand, low to medium plasticity, firm to stiff		105	3-10				100			
	Same as above			3-11		2 3 5	8	100			Pocket pen: 1.7 tsf
45	Silty CLAY (CH), dark gray with brown mottling, moist to wet, 5-10% fine sand, medium to high plasticity, firm to stiff		100	3-12		0 3 5	8	100	0 0 0 22.7	10:30	
50	Same as above		95	3-13 B C		4 8 8	16	70			
	Sandy CLAY (CL), black with brown mottling, wet, 30% fine sand, trace gravel, loose to medium dense			3-14		4 5 6	11	100			
	Silty SAND (SM), bluish gray, 50-60% fine sand, 40-50% fines, medium dense			3-15		2 6 7	13	75			Switch to 4 7/8" bit
55	Sandy GRAVEL (GW), black with gray-blue tint, wet, 1/4"-2" subrounded gravel, 30-40% fine sand (f:m:c 70:20:10), 10-15% silty fines, very dense		90	3-16		3 26 48	50+	100			Driller notes 4-5" cobbles hit
60											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2198.3
EASTING: 4926.63
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-03 **SHEET** 3 **OF** 3
START DATE 8/6/2013
FINISH DATE 8/7/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 145.5 ft msl
DATUM Local
TOTAL DEPTH 72.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Sandy GRAVEL (GW), dark gray to reddish brown, wet, 1/4-1" subrounded gravel, 30-40% fine to medium coarse sand (f:m:c 60:30:10), 5-10% silty fines, dense to very dense		85	3-17		25 34 50/5.5"	50+	100			Driller notes rockier
65	Sandy GRAVEL (GW), dark gray to reddish yellow, wet, 1/8-3/4" subrounded gravel, 30-40% fine to medium coarse sand (f:m:c 50:40:10), 10% silty fines, dense		80	3-18		15 21 21	42	100		12:15	
	SILTSTONE, very fined grained, highly weathered (W4), extremely weak (R0), moderately hard (H5), platey, black with olive tint										
70			75	3-19		50/3"	50+	100			
	End drilling at 72.5 ft bgs. 8/7/2013 at 13:30. Boring backfilled by drilling contractor.										
75			70								
80			65								
85			60								
90											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2198.3
EASTING: 4926.63
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-04 **SHEET** 1 **OF** 3
START DATE 8/6/2013
FINISH DATE 8/6/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 144.1 ft msl
DATUM Local
TOTAL DEPTH 68.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Road base GRAVEL (GW), light brown and gray, dry to moist, 3" minus subrounded gravel, 20% fines, nonplastic							0 0 0 20.5	9:10	2' with 4 1/4" HSA
		140								
5	CLAY fill (CH), dark gray with brown mottling, moist, 5% fine sand, medium to high plasticity, soft		4-1				80			
	Same as above		4-2		0 0 3	3	67			Pocket pen: 1.0 tsf
		135								Driller notes stiffening: 9 to 10 ft bgs
10	CLAY fill (CH), dark brown with gray mottling, moist, medium to high plasticity, firm to stiff		4-3				100			Pocket pen: 2.1 tsf
		130						0 0 0 20.7	9:53	
15	CLAY fill (CH), dark brown with gray mottling, moist, medium to high plasticity, stiff		4-4 C		2 5 7	12	45			
		125								
20	CLAY fill (CH), dark gray with brown mottling, moist, medium to high plasticity, stiff		4-5 C		3 6 7	13	40			
		120								
25	Elastic SILT (MH), dark gray with brown mottling, moist, medium plasticity, very stiff		4-6				56			
	Same as above		4-7		2 3 3	6	100			Pocket pen: 2.4 tsf
		115								Switch to 4 7/8" bit
30										

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2064.43
EASTING: 5172.41
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani
NOTES: Sunny and hot, 60s in the morning, high temperature in the 90s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
1111 Broadway, 6th Fl
Oakland, CA 94607
Phone: (510) 836-3034
Fax: (510) 836-3036

GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-04 **SHEET** 2 **OF** 3
START DATE 8/6/2013
FINISH DATE 8/6/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 144.1 ft msl
DATUM Local
TOTAL DEPTH 68.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Same as above			4-8				20			Sample not taken
			110						0 0 0 20.9	11:02	
35	Silty CLAY (CH), dark gray with brown mottling, moist, 5% fine sand, high plasticity, medium stiff			4-9				50			
	Same as above			4-10		0 0 3	3	100			Pocket pen: 0.8 tsf
			105								
40	Clayey SILT (MH), light to dark brown, moist to wet, 5-10% fine sand, high plasticity, medium stiff			4-11 C		1 2 3	5	60			
			100								
45	Clayey SILT (MH), dark gray, wet to moist, 5% fine sand, high plasticity, stiff			4-12		OST					
				4-13		0 0 1	1	100			Pocket pen: 1.5 tsf
			95								
50	Silty SAND (SM), black, wet, 10% silty nonplastic fines, fine to medium coarse sand, (f:m:c 20:60:20), medium dense			4-14 B C		4 5 6	11	75			
			90								
55	Silty SAND with gravel (SM), black, wet, 20% 1/8-1" subrounded gravel, 60% sand (f:m:c 40:50:10), 20-30% nonplastic fines, medium dense to dense			4-15 C		6 12 17	29	60	0 0 0 22.6	13:30	
			85								
60											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2064.43
EASTING: 5172.41
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Sunny and hot, 60s in the morning, high temperature in the 90s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-04 **SHEET** 3 **OF** 3
START DATE 8/6/2013
FINISH DATE 8/6/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 144.1 ft msl
DATUM Local
TOTAL DEPTH 68.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Sandy SILT (ML), olive with blue tint, wet, 20% fine sand, low plasticity, stiff			4-16		3 4 5	9	100			
			80								Driller notes harder
65	SILTSTONE, olive with blue-green tint, moist, very fine grained, highly weathered (W4), extremely weak (R0), moderately hard (H9), platey, brittle			4-17		50/3.5"	50+	100			
	End drilling at 68 ft bgs. 8/6/13 at 14:20. Boring backfilled by drilling contractor.		75								
70											
			70								
75											
			65								
80											
			60								
85											
			55								
90											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2064.43
EASTING: 5172.41
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Sunny and hot, 60s in the morning, high temperature in the 90s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-05 **SHEET** 1 **OF** 3
START DATE 8/5/2013
FINISH DATE 8/6/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 144.8 ft msl
DATUM Local
TOTAL DEPTH 66.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Road base GRAVEL (GW), light brown and gray, dry to moist, 1/4-3" subrounded gravel, 20-30% plastic fines								7:30	3' with 4 1/4" HSA
								0 0 0 20.5	7:55	
5	SILT fill (MH), dark brown, moist, medium to high plasticity, stiff	140	5-1 C		2 4 6	10	30			
10	SILT fill (MH), mottled dark brown and gray, moist, medium to high plasticity, very stiff	135	5-2				47			Pocket pen: 3.0 tsf
15		130	5-3		2 5 5	10	61			
								0 0 0 20.8	8:52	
20		125	5-4				65			Pocket pen: 3.4 tsf
25	Silty CLAY (CL/CH), mottled dark brown and gray, moist, 5-10% fine sand, medium to low plasticity, very stiff	120	5-5				60		9:45	Track breakdown at 9:45.
									15:15	Pocket pen: 2.5 tsf Back up
30		115								

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2148.54
EASTING: 5550.41
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s in the morning, high temperature in the 80s to 90s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-05 **SHEET** 2 **OF** 3
START DATE 8/5/2013
FINISH DATE 8/6/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 144.8 ft msl
DATUM Local
TOTAL DEPTH 66.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Silty CLAY (CL/CH), dark brown with gray mottling, moist, 5-10% fine sand, low to medium plasticity, stiff		5-6		4 4 4	8	100	0 0 0 20.9	16:00	
35	Clayey SILT (MH), dark brown with gray speckling, moist, 5-10% fine sand, low plasticity, medium stiff	110	5-7				100			Pocket pen: 1.2 tsf
40	Clayey SILT (MH), dark brown with gray speckling, moist to wet, 5-10% fine sand, medium to high plasticity, very soft	105	5-8		0 0 0	0	100			Switch to 4 7/8" bit
45	Silty CLAY (CH), dark gray with brown speckling, moist to wet, 5-10% fine sand, low plasticity, medium stiff	100	5-9				80			Pocket pen: 0.8 tsf
50	SILT to silty SAND (ML/SM), dark gray, wet, 50% fine to medium coarse sand, 50% low plasticity silt, soft, loose	95	5-10 B C		2 2 3	5	70		17:00	End drilling 8/5/13
									7:15	Begin drilling 8/6/13
55	Sandy GRAVEL with silt (GW), dark gray to reddish brown, 1/16 - 1" subrounded gravel, wet, 30-40% sand (f:m:c 20:40:40), 15-20% silty fines, low plasticity, medium dense	90	5-11 C		8 15 17	32	65			
60		85								

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2148.54
EASTING: 5550.41
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s in the morning, high temperature in the 80s to 90s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-05 **SHEET** 3 **OF** 3
START DATE 8/5/2013
FINISH DATE 8/6/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 144.8 ft msl
DATUM Local
TOTAL DEPTH 66.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Sandy GRAVEL with silt (GW), black to dark gray, 1/16 - 3/4" subrounded gravel, wet, 30-40% sand (f:m:c 20:40:40), 5-10% silty low plasticity fines, dense			5-12		15 10 30	40	100			Driller notes stiffening but smooth.
	SILTSTONE, olive with green tint, moist, very fine grained, highly weathered (W4), extremely weak (R0), moderately soft (H5), brittle		80	5-13		50/4"	50+	100			
65	End drilling at 66.5 ft bgs. 8/6/13 at 08:20. Boring backfilled by drilling contractor.										End drilling
70			75								
75			70								
80			65								
85			60								
90			55								

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2148.54
EASTING: 5550.41
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani
NOTES: Sunny and warm, 60s in the morning, high temperature in the 80s to 90s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-16 **SHEET** 1 **OF** 2
START DATE 8/8/2013
FINISH DATE 8/8/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 126.9 ft msl
DATUM Local
TOTAL DEPTH 51.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane
	Surface: brown grass and vegetation									11:20	
	Silty CLAY (CH), light to dark brown, moist, 5-10% fine sand, low to medium plasticity, stiff to very stiff		125	16-1 C		6 7 8	15	70			
	Same as above			16-2		5 6 6	12	80			
5	Silty CLAY (CH), dark brown to yellow, moist, 5-10% fine sand, medium to high plasticity, stiff			16-3				100			
			120								Pocket pen: 2.0 tsf
	Same as above			16-4		2 4 4	8	100			
10	Silty CLAY (CH), dark yellowish brown, moist, 10% fine sand, medium to high plasticity, stiff to very stiff			16-5 C		3 6 9	15	90			
	Same as above			16-6		2 3 5	8	100			
			115							13:20	
15	Silty CLAY (CL), dark yellowish brown with gray mottling, moist, 10% fine sand, low to medium plasticity, stiff			16-7				100			
	Silty CLAY (CH), dark gray with green tint, moist, 5% fine sand, medium to high plasticity, stiff		110								Pocket pen: 1.7 tsf
				16-8		3 3 4	7	100			
20	Same as above			16-9				100		14:00	
			105								Pocket pen: 2.1 tsf
				16-10		3 3 4	7	100			
25	Silty CLAY (CH), dark gray mottled with brown, moist to wet, 10% fine to medium coarse sand, medium to high plasticity, stiff			16-11 C		3 6 7	13	72			
			100								
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2313.98
EASTING: 5921.26
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-16 **SHEET** 2 **OF** 2
START DATE 8/8/2013
FINISH DATE 8/8/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 126.9 ft msl
DATUM Local
TOTAL DEPTH 51.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Sandy CLAY (CL), mottled dark gray and brown, wet, 30% fine sand, 60-70% medium plasticity clay, soft to medium stiff		16-12		0 0 0	0	100			Switch to 4 7/8" bit
		95	16-13				100			
			16-14		0 13 34	47	100			Pocket pen: 1.3 tsf
35	Sandy GRAVEL with silt (GW), dark black to reddish brown, wet, 1/8-3/4" subrounded gravel, 20-30% sand (f:m:c 40:40:20), 10-15% silty fines, low plasticity, dense to very dense	90								
40	Sandy GRAVEL (GW), dark black to reddish brown, wet, 3/4" minus subrounded gravel, 20-30% sand (f:m:c 30:40:30), 10% silty fines, very dense	85	16-15 B C		30 40 48	88	100			
										Driller notes rocky
45	SILTSTONE with gravel, olive with green tint, very fine grained, 20% 3/4" minus gravels, highly weathered (W4), extremely weak (R0), moderately hard (H5), brittle	80	16-16		12 29 50	79	100			
50	SILTSTONE, olive green with blue tint, very fine grained, highly weathered (W4), extremely weak (R0), moderately hard (H5), brittle		16-17		50/3.5"	50+	100		16:00	
	End drilling at 51.5 ft bgs. 8/8/13 at 16:00. Boring backfilled by drilling contractor.	75								
55		70								
60										

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2313.98
EASTING: 5921.26
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani
NOTES: Sunny and warm, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-17 **SHEET** 1 **OF** 2
START DATE 8/9/2013
FINISH DATE 8/9/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 126.6 ft msl
DATUM Local
TOTAL DEPTH 52.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Surface: brown grasses and vegetation								0	7:45	
	CLAY with gravel (CH), dark to light brown, moist, 10% 1" minus subrounded gravels, medium to high plasticity, medium stiff		125	17-1 C		2 3 2	5	50			
	CLAY (CH), dark to light brown, moist, 5-10% fine sand, medium to high plasticity, firm			17-2		0 2 3	5	67			
5				17-3				60			
			120								Pocket pen: 1.5 tsf Switch to 5" wing bit
				17-4		3 3 5	8	90			
10	Silty CLAY (CH), light brown to dark brown with oxide mottling, moist, 5-10% fine sand, medium to high plasticity, stiff			17-5				100			
			115								Pocket pen: 1.4 tsf
	Same as above			17-6		1 2 2	4	100			
15	Silty CLAY (CH), dark brown with light brown to yellow mottling, moist to wet, 5-15% fine sand, medium to high plasticity, medium stiff			17-7 B C		1 2 2	4	89			
			110							9:00	
20	Sandy CLAY (CL), deep brown with dark gray mottle, moist to wet, 20-25% fine sand, medium to high plasticity, soft			17-8				100			
			105								Pocket pen: 0.4 tsf
	Same as above			17-9		0 0 0	0	100			
											Switch to 4 7/8" tricone
25	Silty CLAY with sand (CH), dark gray with blue tint, wet, 15-20% fine sand, medium to high plasticity, medium stiff			17-10 B C		1 3 4	7	100			
			100								
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2093.16
EASTING: 5586.49
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Partly cloudy and cool, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT13-17 **SHEET** 2 **OF** 2
START DATE 8/9/2013
FINISH DATE 8/9/2013
LOCATION Riverbend Landfill
PROJECT 2013 Investigation
PROJECT NUMBER WG1772

ELEVATION DATA
GROUND SURFACE 126.6 ft msl
DATUM Local
TOTAL DEPTH 52.5 ft bgs
DEPTH TO WATER Not measured

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Sandy SILT (MH), dark gray with blue tint, wet, 30-40% fine sand, medium to high plasticity, soft			17-11		0 0 1	1	100			
	Silty SAND (SM), black, wet, fine to medium coarse, 10-15% fines, loose		95	17-12				0			Attempted pushing a shelby tube. Shelby tube met refusal, therefore, drove sampler.
	Sandy GRAVEL (GW), dark gray to reddish brown, wet, 1/2" minus subrounded gravel, 30-40% sand (f:m:c 20:40:40), 15-20% low plasticity fines, dense			17-13		12 20 19	39	100			
35	Sandy GRAVEL (GW), dark gray to reddish brown, wet, 1" minus subrounded gravel, 30-40% sand (f:m:c 30:40:30), 10-20% low plasticity fines, medium dense		90	17-14 C		12 16 13	29	70		10:30	
40	Sandy GRAVEL to gravel (GP-GW), first 6" clean 1/2" subrounded gravel, second 6" sandy gravel, reddish brown to dark gray, wet, 30% sand (f:m:c 20:40:40), 5-10% nonplastic fines, dense		85	17-15 C		11 21 22	43	70			
45	SILTSTONE with gravel, 15-20% 1/2" subrounded gravel, very fine grained, olive with blue-green tint, highly weathered (W4), extremely weak (R0), moderately hard (H5), brittle		80	17-16		9 50/4.5"	50+	90			
50	SILTSTONE, olive green with blue tint, very fine grained, moderately weathered (W3), very weak (R1), moderately hard (H5), brittle		75	17-17		50/1"	50+	100			
	End drilling at 51.5 ft bgs. 8/9/13 at 11:45. Boring backfilled by drilling contractor.										
55			70								
60											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods
HAMMER TYPE: See Notes
BOREHOLE DIAMETER: 5 in.

NORTHING: 2093.16
EASTING: 5586.49
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER B. Martinez **REVIEWER** F. Settepani

NOTES: Partly cloudy and cool, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./ 30 in.). Rope and cathead used for Modified California samples (300 lb./ 30 in.).

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
1111 Broadway, 6th Fl
Oakland, CA 94607
Phone: (510) 836-3034
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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-01 **SHEET** 1 **OF** 3
START DATE 7/15/2014
FINISH DATE 7/16/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 148.4 ft msl
DATUM Local
TOTAL DEPTH 77.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Surface: Gravelly SAND fill (SW), brown, dry, ~30% fine to medium gravel up to 6-inch diamater, ~10% fines										
	CLAY (CL), olive green, moist, low plasticity, firm		145	1-01		2 2 4	6	100		10:20	
5	SILT (ML), light olive brown, moist, low plasticity, firm			1-02				100	100 100 250 350 500		Pocket pen: 0.75 tsf
	Same as above		140	1-03		1 2 2	4	100			
10	SILT (ML), light brown, moist to wet, ~10% fine sand, low plasticity			1-04				100	100 150 200 250 350	11:15	Pocket pen: 1.0 tsf
	CLAY (CH), brown, wet, ~20% fine sand, soft		135	1-05		1 1 2	3	100			
15	Same as above			1-06 B		1 3 2	5	80			Pocket pen: 1.75 tsf
	CLAY (CL), brown to olive mottled with bronze, moist, medium plasticity, firm		130								
20	@20' about 20% fine sand			1-07				100	100 300 350 400 500		Pocket pen: 1.0 tsf
	CLAY (CH), dark gray, moist, firm		125	1-08		2 2 3	5	90			
25				1-09 B C		3 3 3	6	65		12:25	Pocket pen: 1.5 tsf
			120								
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 3825.72
EASTING: 3641.59
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Sunny and hot, 60s in the morning, high temperature in the 90s, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-01 **SHEET** 2 **OF** 3
START DATE 7/15/2014
FINISH DATE 7/16/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 148.4 ft msl
DATUM Local
TOTAL DEPTH 77.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane
	Silty CLAY (CL), dark greenish gray, moist, trace sand, stiff			1-10				70	100 150 250 300 450		Pocket pen: 2.25 tsf
	Same as above		115	1-11		1 4 6	10	100		13:30	
35	Fat CLAY (CH), gray to olive, wet, high plasticity, hard			1-12 B C		5 15 21	36	80		8:15	Driller notes broken frame & engine trouble. Returns to Dundee for materials to repair. End drilling 7/15/2014. Resume drilling 7/16/2014
	Clayey GRAVEL (GC), brown and gray, wet, ~30% fine gravel, 40% medium subangular gravel up to 1/2", ~30% clayey fines, very dense		110								
40				1-13		21 31 50/4"	50+	50			
			105								
45	Sandy CLAY (CL) with some gravel, gray mottled with brown, wet, medium plasticity, hard			1-14		4 17 31	48	90			
			100								
50	Sandy GRAVEL (GW-GM), dark gray to black, moist 1/4" rounded to subrounded gravel, ~20% sand, ~10% nonplastic silty fines, very dense			1-15 B C		11 19 32	51	90			
			95								
55	Silty SAND with gravel (SM), black with brown streaks, subrounded gravel up to 3/8", ~30% medium plasticity silty fines, very dense			1-16		16 26 28	54	80			
			90								
60											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 3825.72
EASTING: 3641.59
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani
NOTES: Sunny and hot, 60s in the morning, high temperature in the 90s, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-01 **SHEET** 3 **OF** 3
START DATE 7/15/2014
FINISH DATE 7/16/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 148.4 ft msl
DATUM Local
TOTAL DEPTH 77.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Silty SAND (SM), dark gray to black, wet, 10% subrounded gravel up to 1/4", 15% low plasticity silty fines, medium dense			1-17		8 11 15	26	80			
	CLAY (CH), olive gray, moist, high plasticity, very stiff, 20% sand		85								
65	Same as above; greenish-gray silt			1-18		7 10 11	21	80			
	Transition to Silty SAND (SM), black, fine sand, ~20% low plasticity silty fines, medium dense		80								
70	Elastic SILT (MH), greenish gray to olive, moist to wet, high plasticity, stiff, trace sand			1-19		2 4 5	9	100			
			75								
75	Clayey SILT (MH), gray, moist, medium to high plasticity, very stiff			1-20				50	450 450 500 500 500	11:05	Pocket pen: 2.5 tsf
	Bottom of boring at 77.5 ft bgs. Boring backfilled by drilling contractor.		70								
80											
			65								
85											
			60								
90											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 3825.72
EASTING: 3641.59
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani
NOTES: Sunny and hot, 60s in the morning, high temperature in the 90s, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-01 HSA
SHEET 1 **OF** 1
START DATE 7/16/2014
FINISH DATE 7/16/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 148.5 ft msl
DATUM Local
TOTAL DEPTH 20 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane
	Surface: Silty CLAY (CL), brown, moist, low to medium plasticity										
			145								
5	Same as above										
			140								
10	CLAY (CL), light brown, moist to wet										
			135								
15	CLAY (CL), light brown, moist to wet, medium plasticity										
			130								
20	Bottom of boring at 20' bgs. Boring backfilled by drilling contractor.										
			125								
25											
			120								
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: Hollow Stem Auger
HAMMER TYPE: N/A
BOREHOLE DIAMETER: 4 1/4"

NORTHING: 3836.24
EASTING: 3646.01
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani
NOTES: Sunny and hot, 60s in the morning, high temperature in the 90s, light wind.

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-02 **SHEET** 1 **OF** 3
START DATE 7/17/2014
FINISH DATE 7/18/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 144.0 ft msl
DATUM Local
TOTAL DEPTH 81.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DESCRIPTION: 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)

COMMENTS: 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane

DEPTH (ft-bgs)	DESCRIPTION	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS
	Surface: Clayey GRAVEL (GC), brown, dry, angular to subangular cobbles up to 6-inch diameter									
		140								
5	Clayey SILT (ML), light olive brown to reddish brown, moist, ~10% fine sand, low plasticity, soft to firm		2-01		2 2 3	5	100		13:30	
			2-02				100	150 150 250 300 350		
		135								Pocket pen: 1.75 tsf
10			2-03		1 2 2	4	100			
		130								
15	Silty CLAY (CL), gray to greenish gray, moist, medium plasticity, very stiff		2-04				70	150 250 350 450 550	14:10	
										Pocket pen: 2.75 tsf
			2-05		4 8 8	16	70			
		125								
20	Silty CLAY (CL) with sand, dark gray, moist to wet, ~10% medium sand, medium to high plasticity, very stiff		2-06 B C		3 9 8	17	80			Pocket pen: 2.75 tsf
		120								
25			2-07				100	200 300 400 450 500	14:55	
										Pocket pen: 2.75 tsf
			2-08		3 4 3	7	100			
		115								
30										

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 3424.88
EASTING: 3336.01
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Sunny and hot, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-02 **SHEET** 2 **OF** 3
START DATE 7/17/2014
FINISH DATE 7/18/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 144.0 ft msl
DATUM Local
TOTAL DEPTH 81.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Silty CLAY (CL), dark gray/olive with black mottling, moist to wet, low plasticity, firm to stiff			2-09		1 4 5	9	90			
			110								
35	Same as above			2-10				60	200 200 450 550/3"	15:40	
	Transition to Silty SAND (SM), dark gray, moist, ~80% sand (f:m:c 20:80:0), ~20% silty fines										2" diameter rock in shoe
	Sandy GRAVEL with silt (GW/GM), gray mottled with brown, moist, ~30% fine sand, ~50% 1/8" subrounded gravel with some larger stones up to 1", very dense			2-11 B C		10 38 24	62	60		16:10	
			105								Driller notes gravels
40	Clayey GRAVEL (GC), reddish brown, moist, ~60% subrounded gravel (f:m:c 40:40:20), ~20% medium sand, ~20% plastic fines, dense to very dense			2-12		14 24 22	46	80			
											End drilling 7/17/14 at 16:15
											Begin drilling 7/18/14. RMA on site for energy measurements
			100								
45				2-13		22 50/4"	50+	30		7:30	2" gravel in shoe
	Same as above, but subrounded gravels up to 1" diameter			2-14 B C		33 50/4"	50+	60			
			95								
50											
	Silty GRAVEL with sand (GM), dark gray to black, moist, ~60% gravel (f:m:c 20:30:50), mostly rounded to subrounded gravel with some angular pieces up to 1.5" diameter, very dense			2-15 B C		47 50/4"	50+	50		9:15	
			90								
55											Driller notes softer
	Change to finer gravel (f:m:c 40:40:20)			2-16		16 35 41	76	70		10:30	
			85								
60											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 3424.88
EASTING: 3336.01
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Sunny and hot, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-02 **SHEET** 3 **OF** 3
START DATE 7/17/2014
FINISH DATE 7/18/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 144.0 ft msl
DATUM Local
TOTAL DEPTH 81.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Same as above		80	2-17 B C		21 46 50/4"	50+	80			
65	Sandy SILT (ML), dark greenish gray, moist, 40% fine sand (f:m:c 90:10:0), 60% low plasticity fines, medium dense, trace gravel		75	2-18		12 12 16	28	70			
70	Silty SAND (SM), bluish gray, 55% fine sand (f:m:c 95:5:0), 45% low plasticity fines, medium dense		70	2-19 B C		4 8 9	17	100		11:40	Driller notes harder
75	Silty SAND/sandy SILT (SM/ML), dark gray, moist to wet, ~50% fine sand, ~50% silt, stiff to very stiff, dense		65	2-20		12 16 24	40	60		12:05	RMA ends energy measurements and leaves site 12:15
80				2-21		8 16 18	34	80		13:10	
	Bottom of boring at 81.5 ft bgs. Boring backfilled by drilling contractor.		60								
85			55								
90											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 3424.88
EASTING: 3336.01
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani
NOTES: Sunny and hot, 60s in the morning, high temperature in the 80s, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-03 **SHEET** 1 **OF** 2
START DATE 7/23/2014
FINISH DATE 7/23/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 136.9 ft msl
DATUM Local
TOTAL DEPTH 50.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
5	Lean CLAY (CL), light brown to olive gray, moist, ~10% fine sand, low to medium plasticity, soft		135	3-01				100	150 300 450 500 550	9:20	Pocket pen: 0.75 tsf
10			130	3-02		2 1 3	4	80			
15	Silty CLAY (CL), gray, moist, medium plasticity, stiff		125	3-03				100	150 250 500 550 600	9:45	Pocket pen: 3.5 tsf
	Same as above		120	3-04		3 4 4	8	90			
20	CLAY (CH), dark greenish gray, wet, medium to high plasticity, stiff to very stiff		115	3-05 B C		3 5 9	14	70			Pocket pen: 4.75 tsf
25			110	3-06				100	150 250 300 400 500	10:20	Pocket pen: 2.75 tsf
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 2824.06
EASTING: 2686.7
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani
NOTES: Overcast and cool, 50s in the morning, 60s in the afternoon, scattered showers. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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BOREHOLE LOG

BORING GT14-03 **SHEET** 2 **OF** 2
START DATE 7/23/2014
FINISH DATE 7/23/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 136.9 ft msl
DATUM Local
TOTAL DEPTH 50.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	CLAY with sand (CH), olive gray, trace gravel (f:m:c 80:20:0), 10-20% medium sand, 80% medium to high plasticity fines, stiff		105	3-07		3 5 8	13	100		10:30	
											Driller notes transition to sand
35	Top: Clayey SAND (SC), reddish brown, wet, uniform fine sand, ~10-20% plastic fines, dense			3-08 B C		13 26 32	58	70			
	@36' Clayey GRAVEL (GC), dark brown with some black and red streaks, wet, ~60% subangular gravel up to 1.5" (f:m:c 30:40:30), ~20% sand, ~20% plastic fines, very dense		100								
40	Subangular to subrounded gravel (f:m:c 60:40:0)			3-09		19 23 28	51	90		11:10	
			95								
45	Same as above			3-10		14 21 26	47	80		12:05	
	@46' change to black/dark gray, moist, ~60% 1/4-inch diameter subrounded gravels, ~20% sand, ~20% silty fines, dense		90								
50	BASALT, black, moderately strong, slightly weathered, fine grained			3-11		50/3"	50+	10		12:30	Driller notes much harder, slower drilling
	Bottom of boring at 50.5 ft bgs. Boring backfilled by drilling contractor.		85								
55											
			80								
60											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 2824.06
EASTING: 2686.7
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani
NOTES: Overcast and cool, 50s in the morning, 60s in the afternoon, scattered showers. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-04 **SHEET** 1 **OF** 2
START DATE 7/21/2014
FINISH DATE 7/21/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 139.7 ft msl
DATUM Local
TOTAL DEPTH 51.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane
	Surface: CLAY (CL), brown, dry, some organics										
5	Silty CLAY (CL) with sand, light olive brown, wet, ~10-20% medium sand, low plasticity, firm		135	4-01				100	150 200 250 300 400		Pocket pen: 1.25 tsf
				4-02		2 2 3	5	90			
10			130	4-03				100	100 150 250 350 450	8:40	Pocket pen: 1.25 tsf
				4-04		2 3 3	6	80			
15			125	4-05 B C		2 3 3	6	80			Pocket pen: 0.75 tsf
20	becomes dark olive gray, stiff, trace sand		120	4-06				100	100 300 400 400 450	9:20	Pocket pen: 1.75 tsf
25	Same as above		115	4-07 B C		2 3 5	8	100			Pocket pen: 1.5 tsf
30			110								

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 2568.93
EASTING: 2468.36
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s and partly cloudy in the morning, 80s and sunny in the afternoon, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
1111 Broadway, 6th Fl
Oakland, CA 94607
Phone: (510) 836-3034
Fax: (510) 836-3036

GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-04 **SHEET** 2 **OF** 2
START DATE 7/21/2014
FINISH DATE 7/21/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 139.7 ft msl
DATUM Local
TOTAL DEPTH 51.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Top: Silty CLAY (CL), gray, wet to moist, medium plasticity, stiff		4-08				100	100 250 350 700 850	10:05	
	Bottom: Clayey GRAVEL with sand (GC/CL), ~50% fine gravel 1/8-inch diameter, ~50% clayey fines									Driller notes gravels
35	Same as above	105	4-09 B C		10 10 14	24	40			
	@35.5' Clay lense (CL), gray, moist, stiff, @36': 2.5-inch diameter rounded coarse gravel stuck in tube, very stiff									Driller notes slightly softer
	@36.5' Clayey GRAVEL with sand (GC), light reddish brown with some oxidation, ~50% subrounded gravel (f:m:c 70:20:10), ~20% sand, ~30% clayey fines, medium dense									Driller notes soft drilling
40	SAND (SP), reddish brown with gray streaks, moist, some fine gravel up to 1/4-inch diameter, uniform fine sand, some cementation, dense	100	4-10		7 16 21	37	70			
45	Clayey GRAVEL with sand (GC), reddish brown with light brown streaks, ~60% subrounded gravel 1/4-inch diameter, very dense	95	4-11		21 32 34	66	60		11:30	
	Sharp transition at 46 ft bgs to bedrock: weathered SILTSTONE, laminated, weak									
50		90	4-12		21 28 33	61	50		11:45	
	Bottom of boring at 51.5 ft bgs. Boring backfilled by drilling contractor.									
55		85								
60		80								

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 2568.93
EASTING: 2468.36
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s and partly cloudy in the morning, 80s and sunny in the afternoon, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-05 **SHEET** 1 **OF** 2
START DATE 7/22/2014
FINISH DATE 7/22/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 133.8 ft msl
DATUM Local
TOTAL DEPTH 50.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane
											Driller notes stiff material
			130								Driller notes softer
5	Top of tube: Lean CLAY with some gravel (CL), dark brown to gray, moist to wet. Bottom of tube: Silty CLAY (CL), gray mottled with light brown, moist to wet, medium plasticity, stiff			5-01				100	100 150 250 350 500	12:45	Pocket pen: 2.0 tsf
			125								
10				5-02		2 4 5	9	60			
			120								
15	Top: Lean CLAY (CL), light brown/gray			5-03				100	100 200 300 350 450	13:15	
	Bottom: CLAY (CH), dark gray, moist to wet, high plasticity, stiff										Pocket pen: 1.25 tsf
	SILT (ML), dark gray mottled with black, ~10% fine sand, low to medium plasticity, firm		115	5-04		1 2 3	5	100			
20	CLAY (CL), dark greenish gray, wet, high plasticity, stiff			5-05				100	100 200 300 350 500	13:55	Pocket pen: 1.25 tsf
			110								
25	SILT (ML), dark bluish gray, moist, low plasticity, firm, trace sand			5-06 B C		1 2 3	5	80			Pocket pen: 1.0 tsf
			105								
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 2640.46
EASTING: 2720.33
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s in the morning, high temperature in the 70s, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-05 **SHEET** 2 **OF** 2
START DATE 7/22/2014
FINISH DATE 7/22/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 133.8 ft msl
DATUM Local
TOTAL DEPTH 50.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane
	Clayey SAND (SC), yellowish brown, moist, ~50% sand, ~50% clayey fines, medium plasticity, dense			5-07				20	500 800/3"	14:15	Refusal after 9-inches
	GRAVEL with sand and clay (GW/GC), ~80% subangular gravel up to 2-inch diameter (f:m:c 30:30:40), ~10% sand, ~10% low plasticity fines, dense to very dense			5-08		12 23 21	44	60			
			100								
35	@35' ~30% sand, held together in clay matrix			5-09 B C		16 20 28	48	80		14:45	Sample inadvertently collected without liners; placed in bag
			95								@37.5-39 ft bgs driller notes softer, less gravels
40	Same as above. 2.5" subangular gravel in shoe			5-10 B C		14 29 28	57	90			
			90								Driller notes softer
45	Silty SAND (SM), light brown to olive, wet, 55% fine sand (f:m:c 90:10:0), 45% silty fines, loose			5-11		3 3 6	9	70		15:35	
	BASALT, dark gray to black, moderately weathered, moderately strong, fine grained			5-12		50/4"	50+	20			Driller notes stiffer
			85								
50				5-13		50/2"	50+	20		16:05	
	Bottom of boring at 50.5 ft bgs. Boring backfilled by drilling contractor.										
			80								
55											
			75								
60											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 2640.46
EASTING: 2720.33
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s in the morning, high temperature in the 70s, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-06 **SHEET** 1 **OF** 2
START DATE 7/21/2014
FINISH DATE 7/22/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 133.5 ft msl
DATUM Local
TOTAL DEPTH 57.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
5	Silty CLAY (CL), dark olive brown, moist, ~10% sand, low to medium plasticity, very stiff		130	6-01				80	100 200 300 350 450	15:45	Pocket pen: 2.5 tsf
10	SILT (ML), gray, moist, low plasticity, stiff		125	6-02		3 5 6	11	80			
15	Silty CLAY (CL), gray, moist to wet, medium to high plasticity, stiff		120	6-03				100	100 200 350 550 700	16:20	Pocket pen: 3.75 tsf
	SILT (ML), dark gray, moist, low plasticity, stiff, light cementation		115	6-04		3 6 7	13	80			End drilling 7/21/14 16:30 Resume drilling 7/22/14 7:50
20	CLAY (CH), dark bluish gray, moist, medium to high plasticity, firm to stiff			6-05				100	300 400 550 600 650	8:00	Pocket pen: 1.75 tsf
	Same as above		110	6-06		2 4 4	8	70			
25				6-07 B C		2 4 6	10	60			Pocket pen: 2.25 tsf Driller notes brown clay cuttings
30			105								

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 2738.63
EASTING: 3018.91
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s in the morning, high temperature in the 70s, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-06 **SHEET** 2 **OF** 2
START DATE 7/21/2014
FINISH DATE 7/22/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 133.5 ft msl
DATUM Local
TOTAL DEPTH 57.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Top: Elastic SILT with sand (MH), olive gray with brown mottling, wet, ~10-20% sand (f:m:c 20:40:40), high plasticity, stiff		6-08				100	250 450 650 850 850	9:00	
	Bottom: SILT with sand (ML), light brown to olive, ~30% fine sand, low to medium plasticity, very stiff									Pocket pen: 3.25 tsf
	Sandy SILT (ML), dark olive gray, moist to wet, 45% sand, 55% medium plasticity silt, stiff	100	6-09		4 6 8	14	90			
35	Clayey GRAVEL (GW/GC), light brown with black mottling, wet, ~50% subrounded gravel up to 2-inch diameter (f:m:c 30:40:30), ~40% sand, ~10% clayey fines, very dense		6-10 B C		21 50/4"	50+	50			
		95								
40										Driller notes large cobbles, slow drilling
	Silty GRAVEL with sand and cobbles (GW/GM), reddish brown with light gray mottling, moist, ~50% subrounded fine gravel 1/4-inch diameter with some angular gravel up to 2-inch diameter (f:m:c 20:50:30), ~30% sand, ~20% low plasticity silty fines, very dense		6-11		17 24 28	52	90		9:50	End cobbles/softer drilling
		90								
45	Same as above		6-12		13 19 35	54	100			
		85								Driller notes softer
50										Driller notes harder
	Sandy ElasticSILT (MH), top: mostly silt, bottom: 60% high plasticity silt, 40% fine sand, dark greenish gray, wet, stiff		6-13 B C		7 9 10	19	70			Pocket pen: 4.0 tsf
		80								
55			6-14				0		10:50	Shelby tube meets refusal @6" Very hard drilling
	BASALT, hard, moderately weathered, fine grained		6-15		50/5"	50+	20		11:10	
	Bottom of boring at 57.5 ft bgs. Boring backfilled by drilling contractor.	75								
60										

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 2738.63
EASTING: 3018.91
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s in the morning, high temperature in the 70s, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-06 HSA
SHEET 1 **OF** 1
START DATE 7/21/2014
FINISH DATE 7/21/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 132.4 ft msl
DATUM Local
TOTAL DEPTH 20 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane
	Surface: CLAY/SILT (CL/ML), dark brown, dry to moist, contains organics		130								
5	SILT (ML), brown, moist, low plasticity, contains some organics		125	BULK-1							Bulk sample collected from 5-10 ft bgs ("BULK-1")
10	Same as above										
	Transition to gray		120								
15											
	Change to wet		115								
20	Bottom of boring at 20 ft bgs. Boring backfilled by drilling contractor.										
			110								
25											
			105								
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: Hollow Stem Auger
HAMMER TYPE: N/A
BOREHOLE DIAMETER: 4 1/4"

NORTHING: 2728.91
EASTING: 3018.67
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg
REVIEWER F. Settepani
NOTES: Sunny and warm, 60s and partly cloudy in the morning, 80s and sunny in the afternoon, light wind

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-07 **SHEET** 1 **OF** 3
START DATE 7/16/2014
FINISH DATE 7/17/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 133.2 ft msl
DATUM Local
TOTAL DEPTH 65.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DESCRIPTION: 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)

COMMENTS: 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane

DEPTH (ft-bgs)	DESCRIPTION	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS
	Surface: CLAY with some gravel and organics, brown, dry to moist									
		130								
5	Lean CLAY (CL), light brown, moist, some gravel up to 1/2-inch diameter, low plasticity, firm to stiff, trace sand		7-01				100	200 200 400 400 500	15:45	Pocket pen: 2.75 tsf
	Same as above, but no gravel	125	7-02		4 5 6	11	70			
10			7-03 B C		3 3 3	6	60			Pocket pen: 1.0 tsf
		120								
15	Top of tube: Lean CLAY (CL), light brown to greenish gray, wet, medium plasticity, trace sand		7-04				100	200 200 300 450 500		
	Bottom of tube: Fat CLAY (CH), gray, medium to high plasticity, stiff	115	7-05		3 4 6	10	100			Pocket pen: 3.75 tsf
20	Same as above		7-06		4 3 5	8	100		15:40	
		110								
25	Becomes greenish gray, moist to wet, ~10% fine sand, medium to high plasticity, stiff		7-07				80	200 250 300 400 450	16:00	
		105	7-08		3 6 7	13	100			Pocket pen: 1.5 tsf
30										

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 2657.1
EASTING: 3519.83
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s and partly cloudy in the morning, 80s and sunny in the afternoon, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-07 **SHEET** 2 **OF** 3
START DATE 7/16/2014
FINISH DATE 7/17/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 133.2 ft msl
DATUM Local
TOTAL DEPTH 65.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Top: same as above (CH)			7-09 B C		3 6 10	16	100		16:30	Stop drilling 7/16/2014
	@30.5': Silty SAND with some gravel (SM), reddish brown with dark brown mottling, moist, 5% subrounded pea gravel, 65% sand (f:m:c 50:50:0), 30% medium plasticity silty fines, very stiff		100							8:05	Resume drilling 7/17/2014
35	Clayey GRAVEL (GC), gray mottled with brown, moist, ~70% subangular to angular 1/2-inch diameter gravel, medium plasticity fines, very dense			7-10		50/5"	50+	20		8:20	Driller notes gravels
			95								37-39 ft bgs - driller notes softer
40	GRAVEL with sand and clay (GW/GC), reddish brown mottled with light brown and gray, moist, ~60-70% subrounded gravel up to 1/2-inch diameter with some angular particles, ~20% fine sand, ~10-20% clay and silt, very dense			7-11 B C		11 25 55	80	90		9:00	
			90								
45	becomes black and brown, moist, ~20% subangular 1/2-inch diameter gravel, ~30% 1/4-inch diameter, ~30% medium sand, ~20% clayey fines, dense			7-12 B C		14 14 27	41	100		9:40	Driller notes sand Silt lens at 46 ft bgs, gray, stiff, pocket pen: 4.5 tsf
			85								Driller notes sandy at 49 ft bgs
50	Silty SAND (SM), black to gray, moist, ~80% fine sand, ~20% silty fines, dense @51.5' change to silty SAND with gravel (SM), black to gray, dense			7-13		7 14 25	39	60			
			80								
55	Same as above			7-14		9 17 35	52	80			Some gravel in cuttings
	GRAVEL with SILT and sand (GM-SM), dark gray, moist to wet, ~50% subrounded medium dense gravel up to 3/8-inch diameter, ~20% fine to medium sand, ~30% medium to high plasticity silty fines, stiff, dense		75								
60											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 2657.1
EASTING: 3519.83
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani
NOTES: Sunny and warm, 60s and partly cloudy in the morning, 80s and sunny in the afternoon, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-07 **SHEET** 3 **OF** 3
START DATE 7/16/2014
FINISH DATE 7/17/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 133.2 ft msl
DATUM Local
TOTAL DEPTH 65.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Same. GRAVEL with silt and sand, dark gray to black, moist to wet, ~50% fine gravel approximately 1/8-inch diameter, ~30% coarse sand, ~20% silty fines, dense			7-15		18 20 24	44	50			
			70								62.5-63 ft bgs: driller notes gravels
65	SILTSTONE, black to dark gray, moderately weathered, platy			7-16		50/2"	50+	10		11:30	
	Bottom of boring at 65.5 ft bgs. Boring backfilled by drilling contractor.										
			65								
70											
			60								
75											
			55								
80											
			50								
85											
			45								
90											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 4 7/8"

NORTHING: 2657.1
EASTING: 3519.83
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Sunny and warm, 60s and partly cloudy in the morning, 80s and sunny in the afternoon, light wind. Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
1111 Broadway, 6th Fl
Oakland, CA 94607
Phone: (510) 836-3034
Fax: (510) 836-3036

GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-08 **SHEET** 1 **OF** 1
START DATE 10/30/2014
FINISH DATE 10/30/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 128.7 ft msl
DATUM Local
TOTAL DEPTH 24 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Surface: Silty CLAY (CL), dark brown, wet, low plasticity, soft, contains organics		125								
5	Silty CLAY (CL), light brown, wet, low to medium plasticity, firm to stiff, trace sand			8-01				70	100 250 350 400 450	9:30	Pocket pen: 1.25 tsf
	SILT (ML), light brown with some black and bronze mottling, medium plasticity, firm to stiff, trace sand		120	8-02		2 3 5	8	50			
10				8-03				100	150 250 400 500 650	9:50	Pocket pen: 2.5 tsf
			115								
15				8-04 A B C		3 4 7	11	100		10:15	Pocket pen: 2.0 tsf
			110								Cuttings change to gray
20	CLAY (CH), dark bluish gray, moist, medium to high plasticity, firm, trace sand			8-05				70	150 250 350 400 500	10:40	Pocket pen: 1.75 tsf
	Same as above.		105	8-06		2 3 3	6	80			
25	Bottom of boring at 24 ft bgs. Boring backfilled by drilling contractor.									11:00	
			100								
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 5"

NORTHING: 2548.38
EASTING: 3672.53
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Overcast and drizzling in the morning (50s), mostly cloudy in the afternoon (60s). Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-09 **SHEET** 1 **OF** 1
START DATE 11/3/2014
FINISH DATE 11/3/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 154.6 ft msl
DATUM Local
TOTAL DEPTH 21.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane
	Surface: SILT (ML), dark brown, wet, low to medium plasticity, firm, contains organics										
			150								
5	SILT (ML), light brown, dry to moist, low plasticity, stiff to very stiff			9-01				100	300 350 500 650 800	15:45	Pocket pen: 4.5 tsf
			145								
10	Silty CLAY (CL), light brown, moist, low to medium plasticity, firm			9-02		2 2 3	5	60			
			140								
15	Silty CLAY (CL), light brown to olive, moist, ~5% fine sand, low plasticity, stiff			9-03				100	200 200 200 200 500	10:40	Pocket pen: 2.75 tsf
			135								
20	SILT (ML), dark bluish gray, moist to wet, low to medium plasticity, stiff to very stiff			9-04 B C		3 7 9	16	70			Pocket pen: 2.75 tsf
	Bottom of boring at 21.5 ft bgs. Boring backfilled by drilling contractor.									11:05	
			130								
25											
			125								
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 5"

NORTHING: 2786.55
EASTING: 3319.86
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Rain in the morning (50s), mostly cloudy in the afternoon (60s). Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-10 **SHEET** 1 **OF** 1
START DATE 11/3/2014
FINISH DATE 11/3/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 147.0 ft msl
DATUM Local
TOTAL DEPTH 26.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Surface: CLAY/Gravel road base (CL/GW), dark brown to gray, low plasticity clay, ~50% subangular gravel up to 1 inch		145								
5	SILT (ML), light brown to olive, moist, low plasticity, very stiff		140	10-01 B C		6 12 8	20	40		12:30	Pocket pen: 3.5 tsf
10			135	10-02				100	200 250 350 450 550	13:05	Pocket pen: 1.0 tsf
15	Silty CLAY (CL), light brown to olive, moist to wet, medium plasticity, soft		130	10-03		2 2 2	4	80			
20	Top: CLAY (CL) with sand, light brown to olive		125	10-04				100	175 200 250 300 450	13:35	Pocket pen: 2.0 tsf
	Bottom: becomes dark bluish gray, stiff										
25				10-05		4 5 4	9	80			
	Bottom of boring at 26.5 ft bgs. Boring backfilled by drilling contractor.		120							13:45	
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 5"

NORTHING: 3001.12
EASTING: 2876.82
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Rain in the morning (50s), mostly cloudy in the afternoon (60s). Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-11 **SHEET** 1 **OF** 1
START DATE 11/3/2014
FINISH DATE 11/3/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 149.1 ft msl
DATUM Local
TOTAL DEPTH 26.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Surface: Silty CLAY (CL), brown, wet, medium plasticity, firm										
			145								
5				11-01		2 3 4	7	80			
			140								
10				11-02				100	50 200 200 300 350	8:35	Pocket pen: 3.25 tsf
			135								
15				11-03 B C		3 3 3	6	70			Pocket pen: 1.5 tsf
			130								
20	Becomes dark bluish gray with sand			11-04				100	250 250 300 400 500	9:05	Pocket pen: 3.25 tsf
			125								
25	Same as above, very stiff			11-05		6 5 11	16	60			
	Bottom of boring at 26.5 ft bgs. Boring backfilled by drilling contractor.									9:25	
			120								
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 5"

NORTHING: 3230.51
EASTING: 3091.22
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani
NOTES: Rain in the morning (50s), mostly cloudy in the afternoon (60s). Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-12 **SHEET** 1 **OF** 1
START DATE 10/31/2014
FINISH DATE 10/31/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 147.9 ft msl
DATUM Local
TOTAL DEPTH 26.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Surface: SILT (ML), dark brown, moist, low plasticity, stiff, contains organics		145								
5	trace fine sand			12-01		4 4 6	10	50		12:50	
			140								
10				12-02				100	200 200 200 300 350	13:05	Pocket pen: 3.0 tsf
			135								
15	Silty CLAY (CL), light brown to olive, moist, low plasticity, stiff			12-03				100	150 200 200 400 500	13:30	Pocket pen: 2.75 tsf
			130								
20	Top: CLAY (CL), light brown, wet, medium plasticity, stiff			12-04 B C		6 5 7	12	60		13:40	Pocket pen: 2.5 tsf
	Bottom: SILT (ML), dark bluish gray, moist, stiff		125								
25	moist to wet, very stiff			12-05		5 6 13	19	80		13:55	
	Bottom of boring at 26.5 ft bgs. Boring backfilled by drilling contractor.		120								
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 5"

NORTHING: 3470.84
EASTING: 3190.84
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani
NOTES: Overcast in the morning (50s), mostly cloudy in the afternoon (60s). Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-13 **SHEET** 1 **OF** 2
START DATE 10/29/2014
FINISH DATE 10/29/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 144.6 ft msl
DATUM Local
TOTAL DEPTH 46.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Surface: SILT (ML), light yellowish brown, wet, medium to high plasticity, soft to stiff										
			140								
5				13-01				100	150 200 250 350 400	13:00	Pocket pen: 1.25 tsf
				13-02		1 1 1	2	70			
			135								
10	SILT (ML), yellowish brown, wet, low to medium plasticity, firm to stiff, trace sand			13-03				80	100 100 100 300 300	13:15	Pocket pen: 1.75 tsf
			130								Change to gray
15	Silty CLAY (CL), dark bluish gray, moist to wet, firm, medium plasticity			13-04 B C		3 4 4	8	60			Pocket pen: 1.25 tsf
			125								
20	SILT (ML), dark bluish gray, moist, medium to high plasticity, stiff			13-05				100	100 300 450 700 700	13:45	Pocket pen: 2.0 tsf
			120								
25	Silty CLAY (CL), dark greenish gray, moist to wet, medium plasticity, stiff			13-06				100	100 150 250 450 500	14:15	Pocket pen: 1.75 tsf Driller notes stiffer
			115								
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 5"

NORTHING: 3640.59
EASTING: 3484.2
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani
NOTES: Overcast and drizzling in the morning (50s), overcast in the afternoon (60s). Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-13 **SHEET** 2 **OF** 2
START DATE 10/29/2014
FINISH DATE 10/29/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 144.6 ft msl
DATUM Local
TOTAL DEPTH 46.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Silty CLAY (CL), dark bluish gray, medium plasticity, stiff			13-07		2 3 6	9	70			
			110								Gravels
35	Silty GRAVEL (GM), reddish brown with light gray streaks, 50% subrounded gravel up to 1-inch diameter (f:m:c 20:20:60), 35% sand, 15% silty fines, medium dense to very dense			13-08 B C		11 9 11	20	70		15:00	
			105								
40				13-09 B C		46 50/3"	50+	40		15:25	
			100								
45	Silty GRAVEL (GM), reddish brown with some black gravels, moist to wet, ~70% subrounded to subangular gravel up to 1-inch diameter, ~10% sand, ~20% silty fines, dense			13-10		17 23 23	46	80		16:00	
	Bottom of boring at 46.5 ft bgs. Boring backfilled by drilling contractor.										
			95								
50											
			90								
55											
			85								
60											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 5"

NORTHING: 3640.59
EASTING: 3484.2
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Overcast and drizzling in the morning (50s), overcast in the afternoon (60s). Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-14 **SHEET** 1 **OF** 2
START DATE 10/30/2014
FINISH DATE 10/31/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 145.4 ft msl
DATUM Local
TOTAL DEPTH 51.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane
	Surface: CLAY (CL) with silt, dark brown, moist to wet, low plasticity, soft to firm		145								Driller notes soft Driller notes stiffer
5	Elastic SILT (MH), light brown, moist, medium to high plasticity, stiff to very stiff		140	14-01				100	300 350 500 600 750	13:05	
				14-02		3 4 4	8	40			Pocket pen: 4.0 tsf Driller notes stiffer
10	Sandy SILT (ML), light brown to olive, moist, ~20% fine sand, ~80% clay, low to medium plasticity, soft to stiff		135	14-03				90	100 200 200 300 450	13:30	Pocket pen: 2.0 tsf
15			130	14-04				100	100 200 300 350 500	13:40	Pocket pen: 1.25 tsf
	Same as above			14-05		1 1 2	3	70			
20			125	14-06 B C		3 3 6	9	80			Pocket pen: 0.75 tsf
25	becomes dark greenish gray, stiff to very stiff		120	14-07				100	200 400 550 700 850	14:30	Pocket pen: 4.5 tsf End drilling 10/30/14 at 14:45 Begin drilling 10/31/14 at 8:30. RMA on site
				14-08		4 4 4	8	90			
30											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 5"

NORTHING: 3115.52
EASTING: 3590.34
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani

NOTES: Overcast and drizzling in the morning (50s), mostly cloudy in the afternoon (60s). Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-14 **SHEET** 2 **OF** 2
START DATE 10/30/2014
FINISH DATE 10/31/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 145.4 ft msl
DATUM Local
TOTAL DEPTH 51.5 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Silty CLAY (CL), dark bluish gray, wet, medium plasticity, stiff, trace fine sand		115	14-09 B C		5 6 9	15	70			Pocket pen: 1.5 tsf
35			110	14-10		3 5 5	10	80		9:15	
40	SILT (ML), dark bluish gray to olive, ~30% fine sand, ~70% low plasticity fines, very stiff, lower fines content at bottom of sample		105	14-11 B C		4 7 9	16	70		9:45	Pocket pen: 2.0 tsf
45	Elastic SILT with sand and gravel (MH), yellowish brown with bronze streaking, wet, 10% fine gravel, 20% sand, 70% high plasticity silt, very stiff		100	14-12		12 8 13	21	80		10:10	Driller notes gravels
50	Silty GRAVEL (GM), brown with dark reddish brown mottling, wet, ~70% subangular gravel up to 1.5-inch diameter (f:m:c 20:30:50), ~10% medium sand, ~20% silty fines, low plasticity fines, dense to very dense		95	14-13 B C		38 37 50/4"	50+	70		10:40	RMA leaves site
	Bottom of boring at 51.5 ft bgs. Boring backfilled by drilling contractor.										
55			90								
60											

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 5"

NORTHING: 3115.52
EASTING: 3590.34
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani
NOTES: Overcast and drizzling in the morning (50s), mostly cloudy in the afternoon (60s). Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

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GS FORM: GEOTECH1 01/04

BOREHOLE LOG

BORING GT14-15 **SHEET** 1 **OF** 1
START DATE 10/28/2014
FINISH DATE 10/28/2014
LOCATION Riverbend Landfill
PROJECT 2014 Investigation
PROJECT NUMBER WG1866

ELEVATION DATA
GROUND SURFACE 142.0 ft msl
DATUM Local
TOTAL DEPTH 29 ft bgs
DEPTH TO WATER

AS OF 22-JULY-2015

DEPTH (ft-bgs)	DESCRIPTION (1) Soil Name (USCS Sym.) (2) Color (3) Moisture (4) Grain Size (5) Percentage (6) Plasticity (7) Density/Consistency (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PRESSURE (PSF)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane
	Surface: CLAY with some organics (CL), dark brown, moist, medium plasticity, firm										Driller notes soft silt
			140								Driller notes stiffer
5				15-01				100	300 500 650 700 850	10:30	
			135								Pocket pen: 2.5 tsf
10				15-02		3 3 4	7	80			
			130								
15				15-03				100	150 200 300 350 400	11:00	
			125								Pocket pen: 1.0 tsf
20	SILT (ML), light brown, moist, low plasticity, firm			15-04 B C		3 3 4	7	90			Pocket pen: 1.25 tsf
			120								
25	Silty CLAY (CL), gray, moist to wet, medium plasticity, firm to very stiff			15-05				90	100 300 500 750 850	11:45	
			115								Pocket pen: 5.0 tsf
	Same as above, firm			15-06		3 4 4	8	80			
30	Bottom of boring at 29.0 ft bgs. Boring backfilled by drilling contractor.									11:50	

CONTRACTOR: Hard Core Drilling
EQUIPMENT: CME-850
DRILL MTHD: NWJ Rods, Mud Rotary
HAMMER TYPE: See notes
BOREHOLE DIAMETER: 5"

NORTHING: 4182.6
EASTING: 5100.59
COORDINATE SYSTEM: Local; Add 2.78 ft for NAVD88

LOGGER D. Umberg **REVIEWER** F. Settepani
NOTES: Overcast and scattered showers (50s). Automatic hammer used for SPT samples (140 lb./30 in.). Rope and cathead used for Modified California samples (300 lb./30 in.).

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

APPENDIX B

Historical Site Groundwater Elevation Data and Proposed Module 11 Area Groundwater Elevation Hydrographs

Historical Site Groundwater Elevation Data

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MB-1 North	31-Mar-97	149.10	22.63	126.47
MB-1 North	19-May-97	149.10	25.09	124.01
MB-1 North	9-Sep-97	149.10	22.16	126.94
MB-1 North	18-Dec-97	149.10	17.25	131.85
MB-1 North	17-Mar-98	149.10	17.20	131.90
MB-1 North	8-Jun-98	149.10	22.52	126.58
MB-1 North	18-Aug-98	149.10	25.40	123.70
MB-1 North	5-Nov-98	149.10	22.38	126.72
MB-1 North	22-Mar-99	149.10	15.01	134.09
MB-1 North	7-Sep-99	149.10	23.84	125.26
MB-1 North	9-Dec-99	149.10	19.21	129.89
MB-1 North	7-Feb-00	149.10	10.00	139.10
MB-1 North	29-May-00	149.10	21.47	127.63
MB-1 North [b]	21-Aug-00	149.10	24.88	124.22
MB-2 South	31-Mar-97	149.70	23.07	126.63
MB-2 South	19-May-97	149.70	23.63	126.07
MB-2 South	18-Dec-97	149.70	17.11	132.59
MB-2 South	17-Mar-98	149.70	18.50	131.20
MB-2 South	8-Jun-98	149.70	23.95	125.75
MB-2 South	18-Aug-98	149.70	24.11	125.59
MB-2 South	5-Nov-98	149.70	22.37	127.33
MB-2 South	22-Mar-99	149.70	15.13	134.57
MB-2 South	7-Sep-99	149.70	24.22	125.48
MB-2 South	9-Dec-99	149.70	20.73	128.97
MB-2 South	7-Feb-00	149.70	10.01	139.69
MB-2 South	29-May-00	149.70	22.71	126.99
MB-2 South	21-Aug-00	149.70	25.91	123.79
MB-2 South	6-Nov-00	149.70	22.72	126.98
MB-2 South	29-Jan-01	149.70	18.85	130.85
MB-2 South	23-Apr-01	149.70	19.25	130.45
MB-2 South	27-Aug-01	149.70	24.00	125.70
MB-2 South	5-Nov-01	149.70	26.65	123.05
MB-2 South	7-Feb-02	149.70	NR	---
MB-2 South	8-Apr-02	149.70	20.50	129.20
MB-2 South	22-Jul-02	149.70	25.91	123.79
MB-2 South	7-Oct-02	149.70	25.98	123.72
MB-2 South	24-Feb-03	149.70	18.43	131.27
MB-2 South	12-May-03	149.70	20.44	129.26
MB-2 South	18-Aug-03	149.70	35.35	114.35
MB-2 South	17-Nov-03	149.70	27.97	121.73
MB-2 South	19-Apr-04	149.70	22.36	127.34
MB-2 South	8-Nov-04	149.70	23.78	125.92
MB-2 South	23-May-05	149.70	21.80	127.90
MB-2 South	24-Oct-05	149.70	25.21	124.49
MB-2 South	8-May-06	149.70	30.17	119.53
MB-2 South	16-Oct-06	149.70	27.19	122.51
MB-2 South	7-May-07	149.70	21.22	128.48

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MB-2 South	5-Nov-07	149.70	25.32	124.38
MB-2 South	19-May-08	149.70	38.80	110.90
MB-2 South	10-Nov-08	149.70	36.86	112.84
MB-2 South	4-May-09	149.70	20.54	129.16
MB-2 South	16-Nov-09	149.70	23.42	126.28
MB-2 South	19-Apr-10	149.70	25.03	124.67
MB-2 South	4-Oct-10	149.70	27.30	122.40
MB-2 South	12-Apr-11	149.70	18.15	131.55
MB-2 South	1-Nov-11	149.70	25.17	124.53
MB-2 South	30-Apr-12	149.70	18.85	130.85
MB-2 South	12-Nov-12	149.70	34.23	115.47
MB-2 South	8-Apr-13	149.70	18.17	131.53
MB-2 South	18-Nov-13	149.70	21.25	128.45
MB-2 South	28-Apr-14	149.70	NR	---
MB-2 South	17-Nov-14	149.70	NR	---
MW-01A (Deep)	11-Feb-93	155.30	20.72	134.58
MW-01A (Deep)	12-May-93	155.30	22.37	132.93
MW-01A (Deep)	12-Jul-93	155.30	26.49	128.81
MW-01A (Deep)	10-Aug-93	155.30	28.08	127.22
MW-01A (Deep)	14-Sep-93	155.30	28.39	126.91
MW-01A (Deep)	12-Oct-93	155.30	29.33	125.97
MW-01A (Deep)	4-Dec-93	155.30	28.97	126.33
MW-01A (Deep)	5-Jan-94	155.30	22.76	132.54
MW-01A (Deep)	22-Feb-94	155.30	20.92	134.38
MW-01A (Deep)	25-Mar-94	155.30	21.83	133.47
MW-01A (Deep)	26-Apr-94	155.30	22.25	133.05
MW-01A (Deep)	26-May-94	155.30	31.57	123.73
MW-01A (Deep)	1-Jul-94	155.30	29.88	125.42
MW-01A (Deep)	2-Aug-94	155.30	33.00	122.30
MW-01A (Deep)	2-Sep-94	155.30	33.27	122.03
MW-01A (Deep)	13-Oct-94	155.30	30.12	125.18
MW-01A (Deep)	11-Nov-94	155.30	28.38	126.92
MW-01A (Deep)	21-Dec-94	155.30	23.22	132.08
MW-01A (Deep)	20-Jan-95	155.30	21.85	133.45
MW-01A (Deep)	23-Feb-95	155.30	21.49	133.81
MW-01A (Deep)	28-Mar-95	155.30	21.79	133.51
MW-01A (Deep)	14-Apr-95	155.30	23.00	132.30
MW-01A (Deep)	18-May-95	155.30	20.12	135.18
MW-01A (Deep)	20-Jun-95	155.30	26.24	129.06
MW-01A (Deep)	26-Jul-95	155.30	27.54	127.76
MW-01A (Deep)	22-Aug-95	155.30	32.40	122.90
MW-01A (Deep)	11-Sep-95	155.30	28.53	126.77
MW-01A (Deep)	24-Oct-95	155.30	27.29	128.01
MW-01A (Deep)	20-Dec-95	155.30	21.64	133.66
MW-01A (Deep)	11-Jan-96	155.30	22.19	133.11
MW-01A (Deep)	16-Feb-96	155.30	21.39	133.91
MW-01A (Deep)	30-Mar-96	155.30	22.58	132.72
MW-01A (Deep)	9-Apr-96	155.30	27.30	128.00
MW-01A (Deep)	28-May-96	155.30	26.72	128.58

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-01A (Deep)	28-Jun-96	155.30	30.90	124.40
MW-01A (Deep)	30-Jul-96	155.30	33.72	121.58
MW-01A (Deep)	29-Aug-96	155.30	31.58	123.72
MW-01A (Deep)	30-Sep-96	155.30	32.63	122.67
MW-01A (Deep)	31-Oct-96	155.30	32.20	123.10
MW-01A (Deep)	12-Dec-96	155.30	23.20	132.10
MW-01A (Deep)	22-Jan-97	155.30	21.23	134.07
MW-01A (Deep)	31-Mar-97	155.30	23.33	131.97
MW-01A (Deep)	19-May-97	155.30	32.13	123.17
MW-01A (Deep)	9-Sep-97	155.30	28.95	126.35
MW-01A (Deep)	18-Dec-97	155.30	21.79	133.51
MW-01A (Deep)	17-Mar-98	155.30	25.42	129.88
MW-01A (Deep)	8-Jun-98	155.30	30.90	124.40
MW-01A (Deep)	18-Aug-98	155.30	32.21	123.09
MW-01A (Deep)	5-Nov-98	155.30	26.93	128.37
MW-01A (Deep)	22-Mar-99	155.30	21.93	133.37
MW-01A (Deep)	7-Sep-99	155.30	31.58	123.72
MW-01A (Deep)	9-Dec-99	155.30	NR	---
MW-01A (Deep)	7-Feb-00	155.30	20.38	134.92
MW-01A (Deep)	29-May-00	155.30	29.43	125.87
MW-01A (Deep)	21-Aug-00	155.30	33.01	122.29
MW-01A (Deep)	6-Nov-00	155.30	27.14	128.16
MW-01A (Deep)	29-Jan-01	155.30	23.97	131.33
MW-01A (Deep)	23-Apr-01	155.30	23.59	131.71
MW-01A (Deep)	27-Aug-01	155.30	28.95	126.35
MW-01A (Deep)	5-Nov-01	155.30	29.45	125.85
MW-01A (Deep)	7-Feb-02	155.30	21.81	133.49
MW-01A (Deep)	8-Apr-02	155.30	25.93	129.37
MW-01A (Deep)	22-Jul-02	155.30	30.21	125.09
MW-01A (Deep)	7-Oct-02	155.30	30.21	125.09
MW-01A (Deep)	24-Feb-03	155.30	24.89	130.41
MW-01A (Deep)	12-May-03	155.30	27.77	127.53
MW-01A (Deep)	18-Aug-03	155.30	42.78	112.52
MW-01A (Deep)	17-Nov-03	155.30	32.69	122.61
MW-01A (Deep)	19-Apr-04	155.30	29.88	125.42
MW-01A (Deep)	8-Nov-04	155.30	29.16	126.14
MW-01A (Deep)	23-May-05	155.30	28.77	126.53
MW-01A (Deep)	24-Oct-05	155.30	29.76	125.54
MW-01A (Deep)	8-May-06	155.30	33.75	121.55
MW-01A (Deep)	16-Oct-06	155.30	32.05	123.25
MW-01A (Deep)	7-May-07	155.30	28.31	126.99
MW-01A (Deep)	5-Nov-07	155.30	30.35	124.95
MW-01A (Deep)	19-May-08	155.30	46.09	109.21
MW-01A (Deep)	10-Nov-08	155.30	40.69	114.61
MW-01A (Deep)	4-May-09	155.30	24.81	130.49
MW-01A (Deep)	16-Nov-09	155.30	28.06	127.24
MW-01A (Deep)	19-Apr-10	155.30	31.96	123.34
MW-01A (Deep)	4-Oct-10	155.30	34.29	121.01
MW-01A (Deep)	12-Apr-11	155.30	24.57	130.73

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-01A (Deep)	1-Nov-11	155.30	29.60	125.70
MW-01A (Deep)	30-Apr-12	155.30	23.35	131.95
MW-01A (Deep)	12-Nov-12	155.30	40.50	114.80
MW-01A (Deep)	8-Apr-13	155.30	22.65	132.65
MW-01A (Deep)	18-Nov-13	155.30	25.57	129.73
MW-01A (Deep)	28-Apr-14	155.30	23.28	132.02
MW-01A (Deep)	17-Nov-14	155.30	38.92	116.38
MW-01B (Shallow)	11-Feb-93	155.00	7.02	147.98
MW-01B (Shallow)	12-May-93	155.00	7.12	147.88
MW-01B (Shallow)	12-Jul-93	155.00	11.63	143.37
MW-01B (Shallow)	10-Aug-93	155.00	12.56	142.44
MW-01B (Shallow)	14-Sep-93	155.00	14.30	140.70
MW-01B (Shallow)	12-Oct-93	155.00	14.52	140.48
MW-01B (Shallow)	4-Dec-93	155.00	9.43	145.57
MW-01B (Shallow)	5-Jan-94	155.00	4.74	150.26
MW-01B (Shallow)	22-Feb-94	155.00	6.14	148.86
MW-01B (Shallow)	25-Mar-94	155.00	5.85	149.15
MW-01B (Shallow)	26-Apr-94	155.00	8.54	146.46
MW-01B (Shallow)	26-May-94	155.00	10.90	144.10
MW-01B (Shallow)	1-Jul-94	155.00	13.78	141.22
MW-01B (Shallow)	2-Aug-94	155.00	14.64	140.36
MW-01B (Shallow)	2-Sep-94	155.00	15.67	139.33
MW-01B (Shallow)	13-Oct-94	155.00	17.17	137.83
MW-01B (Shallow)	11-Nov-94	155.00	17.77	137.23
MW-01B (Shallow)	21-Dec-94	155.00	4.73	150.27
MW-01B (Shallow)	20-Jan-95	155.00	5.16	149.84
MW-01B (Shallow)	23-Feb-95	155.00	5.70	149.30
MW-01B (Shallow)	28-Mar-95	155.00	6.44	148.56
MW-01B (Shallow)	14-Apr-95	155.00	6.42	148.58
MW-01B (Shallow)	18-May-95	155.00	9.07	145.93
MW-01B (Shallow)	20-Jun-95	155.00	9.72	145.28
MW-01B (Shallow)	26-Jul-95	155.00	11.75	143.25
MW-01B (Shallow)	22-Aug-95	155.00	13.13	141.87
MW-01B (Shallow)	11-Sep-95	155.00	16.10	138.90
MW-01B (Shallow)	24-Oct-95	155.00	13.83	141.17
MW-01B (Shallow)	22-Nov-95	155.00	6.97	148.03
MW-01B (Shallow)	20-Dec-95	155.00	5.16	149.84
MW-01B (Shallow)	11-Jan-96	155.00	5.22	149.78
MW-01B (Shallow)	16-Feb-96	155.00	6.22	148.78
MW-01B (Shallow)	30-Mar-96	155.00	8.00	147.00
MW-01B (Shallow)	9-Apr-96	155.00	8.49	146.51
MW-01B (Shallow)	28-May-96	155.00	6.85	148.15
MW-01B (Shallow)	28-Jun-96	155.00	9.83	145.17
MW-01B (Shallow)	30-Jul-96	155.00	12.51	142.49
MW-01B (Shallow)	29-Aug-96	155.00	12.18	142.82
MW-01B (Shallow)	30-Sep-96	155.00	11.02	143.98
MW-01B (Shallow)	31-Oct-96	155.00	7.04	147.96
MW-01B (Shallow)	12-Dec-96	155.00	5.31	149.69
MW-01B (Shallow)	22-Jan-97	155.00	5.01	149.99

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-01B (Shallow)	31-Mar-97	155.00	6.73	148.27
MW-01B (Shallow)	19-May-97	155.00	9.16	145.84
MW-01B (Shallow)	9-Sep-97	155.00	11.53	143.47
MW-01B (Shallow)	18-Dec-97	155.00	4.96	150.04
MW-01B (Shallow)	17-Mar-98	155.00	5.98	149.02
MW-01B (Shallow)	8-Jun-98	155.00	8.10	146.90
MW-01B (Shallow)	18-Aug-98	155.00	10.71	144.29
MW-01B (Shallow)	5-Nov-98	155.00	11.97	143.03
MW-01B (Shallow)	22-Mar-99	155.00	5.13	149.87
MW-01B (Shallow)	7-Sep-99	155.00	14.43	140.57
MW-01B (Shallow)	9-Dec-99	155.00	NR	---
MW-01B (Shallow)	7-Feb-00	155.00	6.00	149.00
MW-01B (Shallow)	29-May-00	155.00	8.50	146.50
MW-01B (Shallow)	21-Aug-00	155.00	NR	---
MW-01B (Shallow)	6-Nov-00	155.00	NR	---
MW-01B (Shallow)	29-Jan-01	155.00	9.09	145.91
MW-01B (Shallow)	23-Apr-01	155.00	8.61	146.39
MW-01B (Shallow)	27-Aug-01	155.00	NR	---
MW-01B (Shallow)	5-Nov-01	155.00	NR	---
MW-01B (Shallow)	7-Feb-02	155.00	5.08	149.92
MW-01B (Shallow)	8-Apr-02	155.00	7.43	147.57
MW-01B (Shallow)	22-Jul-02	155.00	NR	---
MW-01B (Shallow)	7-Oct-02	155.00	NR	---
MW-01B (Shallow)	24-Feb-03	155.00	5.75	149.25
MW-01B (Shallow)	12-May-03	155.00	7.33	147.67
MW-01B (Shallow)	18-Aug-03	155.00	NR	---
MW-01B (Shallow)	17-Nov-03	155.00	20.62	134.38
MW-01B (Shallow)	19-Apr-04	155.00	7.54	147.46
MW-01B (Shallow)	8-Nov-04	155.00	17.53	137.47
MW-01B (Shallow)	23-May-05	155.00	7.57	147.43
MW-01B (Shallow)	24-Oct-05	155.00	22.25	132.75
MW-01B (Shallow)	8-May-06	155.00	9.24	145.76
MW-01B (Shallow)	16-Oct-06	155.00	23.22	131.78
MW-01B (Shallow)	7-May-07	155.00	8.10	146.90
MW-01B (Shallow)	5-Nov-07	155.00	19.03	135.97
MW-01B (Shallow)	19-May-08	155.00	8.49	146.51
MW-01B (Shallow)	10-Nov-08	155.00	17.43	137.57
MW-01B (Shallow)	4-May-09	155.00	6.90	148.10
MW-01B (Shallow)	16-Nov-09	155.00	9.70	145.30
MW-01B (Shallow)	19-Apr-10	155.00	6.55	148.45
MW-01B (Shallow)	5-Oct-10	155.00	18.01	136.99
MW-01B (Shallow)	12-Apr-11	155.00	5.16	149.84
MW-01B (Shallow)	1-Nov-11	155.00	13.34	141.66
MW-01B (Shallow)	30-Apr-12	155.00	7.09	147.91
MW-01B (Shallow)	12-Nov-12	155.00	10.14	144.86
MW-01B (Shallow)	8-Apr-13	155.00	6.54	148.46
MW-01B (Shallow)	18-Nov-13	155.00	9.81	145.19
MW-01B (Shallow)	28-Apr-14	155.00	5.51	149.49
MW-01B (Shallow)	17-Nov-14	155.00	7.70	147.30

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-02 (Shallow)	11-Feb-93	148.30	16.85	131.45
MW-02 (Shallow)	12-May-93	148.30	16.39	131.91
MW-02 (Shallow)	12-Jul-93	148.30	19.13	129.17
MW-02 (Shallow)	10-Aug-93	148.30	20.13	128.17
MW-02 (Shallow)	14-Sep-93	148.30	20.11	128.19
MW-02 (Shallow)	12-Oct-93	148.30	21.55	126.75
MW-02 (Shallow)	4-Dec-93	148.30	19.05	129.25
MW-02 (Shallow)	5-Jan-94	148.30	9.92	138.38
MW-02 (Shallow)	22-Feb-94	148.30	11.09	137.21
MW-02 (Shallow)	25-Mar-94	148.30	13.50	134.80
MW-02 (Shallow)	26-Apr-94	148.30	17.39	130.91
MW-02 (Shallow)	26-May-94	148.30	18.78	129.52
MW-02 (Shallow)	1-Jul-94	148.30	20.56	127.74
MW-02 (Shallow)	2-Aug-94	148.30	19.41	128.89
MW-02 (Shallow)	2-Sep-94	148.30	25.31	122.99
MW-02 (Shallow)	13-Oct-94	148.30	24.12	124.18
MW-02 (Shallow)	11-Nov-94	148.30	13.44	134.86
MW-02 (Shallow)	21-Dec-94	148.30	9.68	138.62
MW-02 (Shallow)	20-Jan-95	148.30	12.10	136.20
MW-02 (Shallow)	23-Feb-95	148.30	11.98	136.32
MW-02 (Shallow)	28-Mar-95	148.30	15.95	132.35
MW-02 (Shallow)	14-Apr-95	148.30	16.04	132.26
MW-02 (Shallow)	18-May-95	148.30	17.56	130.74
MW-02 (Shallow)	20-Jun-95	148.30	16.71	131.59
MW-02 (Shallow)	26-Jul-95	148.30	17.69	130.61
MW-02 (Shallow)	22-Aug-95	148.30	18.68	129.62
MW-02 (Shallow)	11-Sep-95	148.30	19.99	128.31
MW-02 (Shallow)	24-Oct-95	148.30	18.14	130.16
MW-02 (Shallow)	22-Nov-95	148.30	16.80	131.50
MW-02 (Shallow)	20-Dec-95	148.30	11.54	136.76
MW-02 (Shallow)	11-Jan-96	148.30	11.30	137.00
MW-02 (Shallow)	16-Feb-96	148.30	15.67	132.63
MW-02 (Shallow)	30-Mar-96	148.30	16.80	131.50
MW-02 (Shallow)	9-Apr-96	148.30	16.98	131.32
MW-02 (Shallow)	28-May-96	148.30	16.65	131.65
MW-02 (Shallow)	28-Jun-96	148.30	17.80	130.50
MW-02 (Shallow)	30-Jul-96	148.30	17.15	131.15
MW-02 (Shallow)	29-Aug-96	148.30	18.12	130.18
MW-02 (Shallow)	30-Sep-96	148.30	19.67	128.63
MW-02 (Shallow)	31-Oct-96	148.30	18.21	130.09
MW-02 (Shallow)	12-Dec-96	148.30	11.41	136.89
MW-02 (Shallow)	22-Jan-97	148.30	9.58	138.72
MW-02 (Shallow)	19-May-97	148.30	17.55	130.75
MW-02 (Shallow)	9-Sep-97	148.30	21.81	126.49
MW-02 (Shallow)	18-Dec-97	148.30	9.91	138.39
MW-02 (Shallow)	17-Mar-98	148.30	15.19	133.11
MW-02 (Shallow)	8-Jun-98	148.30	17.42	130.88
MW-02 (Shallow)	18-Aug-98	148.30	9.32	138.98
MW-02 (Shallow)	5-Nov-98	148.30	18.77	129.53

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-02 (Shallow)	22-Mar-99	148.30	15.98	132.32
MW-02 (Shallow)	7-Sep-99	148.30	24.52	123.78
MW-02 (Shallow)	9-Dec-99	148.30	NR	---
MW-02 (Shallow)	7-Feb-00	148.30	15.17	133.13
MW-02 (Shallow)	29-May-00	148.30	17.11	131.19
MW-02 (Shallow)	21-Aug-00	148.30	21.51	126.79
MW-02 (Shallow)	6-Nov-00	148.30	20.77	127.53
MW-02 (Shallow)	29-Jan-01	148.30	17.50	130.80
MW-02 (Shallow)	23-Apr-01	148.30	18.04	130.26
MW-02 (Shallow)	27-Aug-01	148.30	23.69	124.61
MW-02 (Shallow)	5-Nov-01	148.30	23.77	124.53
MW-02 (Shallow)	7-Feb-02	148.30	13.31	134.99
MW-02 (Shallow)	8-Apr-02	148.30	16.09	132.21
MW-02 (Shallow)	22-Jul-02	148.30	21.22	127.08
MW-02 (Shallow)	7-Oct-02	148.30	24.97	123.33
MW-02 (Shallow)	24-Feb-03	148.30	13.28	135.02
MW-02 (Shallow)	12-May-03	148.30	16.20	132.10
MW-02 (Shallow)	18-Aug-03	148.30	23.69	124.61
MW-02 (Shallow)	17-Nov-03	148.30	25.90	122.40
MW-02 (Shallow)	19-Apr-04	148.30	16.60	131.70
MW-02 (Shallow)	8-Nov-04	148.30	22.10	126.20
MW-02 (Shallow)	23-May-05	148.30	16.82	131.48
MW-02 (Shallow)	24-Oct-05	148.30	24.66	123.64
MW-02 (Shallow)	8-May-06	148.30	16.45	131.85
MW-02 (Shallow)	16-Oct-06	148.30	25.12	123.18
MW-02 (Shallow)	7-May-07	148.30	15.72	132.58
MW-02 (Shallow)	5-Nov-07	148.30	20.82	127.48
MW-02 (Shallow)	19-May-08	148.30	16.36	131.94
MW-02 (Shallow)	10-Nov-08	148.30	20.66	127.64
MW-02 (Shallow)	4-May-09	148.30	12.73	135.57
MW-02 (Shallow)	16-Nov-09	148.30	16.60	131.70
MW-02 (Shallow)	19-Apr-10	148.30	12.42	135.88
MW-02 (Shallow)	4-Oct-10	148.30	16.41	131.89
MW-02 (Shallow)	12-Apr-11	148.30	10.67	137.63
MW-02 (Shallow)	1-Nov-11	148.30	22.08	126.22
MW-02 (Shallow)	30-Apr-12	148.30	12.36	135.94
MW-02 (Shallow)	12-Nov-12	148.30	17.44	130.86
MW-02 (Shallow)	8-Apr-13	148.30	13.08	135.22
MW-02 (Shallow)	18-Nov-13	148.30	18.51	129.79
MW-02 (Shallow)	28-Apr-14	148.30	12.00	136.30
MW-02 (Shallow)	17-Nov-14	148.30	18.21	130.09
MW-03A (Shallow)	12-Jul-93	140.81	19.07	121.74
MW-03A (Shallow)	10-Aug-93	140.81	19.28	121.53
MW-03A (Shallow)	14-Sep-93	140.81	19.31	121.50
MW-03A (Shallow)	12-Oct-93	140.81	19.36	121.45
MW-03A (Shallow)	4-Dec-93	140.81	19.31	121.50
MW-03A (Shallow)	5-Jan-94	140.81	18.63	122.18
MW-03A (Shallow)	22-Feb-94	140.81	17.85	122.96
MW-03A (Shallow)	25-Mar-94	140.81	18.42	122.39

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-03A (Shallow)	26-Apr-94	140.81	18.70	122.11
MW-03A (Shallow)	26-May-94	140.81	19.05	121.76
MW-03A (Shallow)	1-Jul-94	140.81	19.28	121.53
MW-03A (Shallow)	2-Aug-94	140.81	19.33	121.48
MW-03A (Shallow)	2-Sep-94	140.81	19.42	121.39
MW-03A (Shallow)	13-Oct-94	140.81	19.45	121.36
MW-03A (Shallow)	11-Nov-94	140.81	19.17	121.64
MW-03A (Shallow)	21-Dec-94	140.81	16.46	124.35
MW-03A (Shallow)	20-Jan-95	140.81	17.34	123.47
MW-03A (Shallow)	23-Feb-95	140.81	17.48	123.33
MW-03A (Shallow)	28-Mar-95	140.81	18.28	122.53
MW-03A (Shallow)	14-Apr-95	140.81	18.56	122.25
MW-03A (Shallow)	18-May-95	140.81	19.00	121.81
MW-03A (Shallow)	20-Jun-95	140.81	19.85	120.96
MW-03A (Shallow)	26-Jul-95	140.81	19.31	121.50
MW-03A (Shallow)	22-Aug-95	140.81	19.23	121.58
MW-03A (Shallow)	11-Sep-95	140.81	19.33	121.48
MW-03A (Shallow)	24-Oct-95	140.81	19.46	121.35
MW-03A (Shallow)	22-Nov-95	140.81	19.12	121.69
MW-03A (Shallow)	20-Dec-95	140.81	14.83	125.98
MW-03A (Shallow)	11-Jan-96	140.81	18.43	122.38
MW-03A (Shallow)	16-Feb-96	140.81	17.49	123.32
MW-03A (Shallow)	30-Mar-96	140.81	18.49	122.32
MW-03A (Shallow)	9-Apr-96	140.81	18.68	122.13
MW-03A (Shallow)	28-May-96	140.81	18.59	122.22
MW-03A (Shallow)	28-Jun-96	140.81	18.79	122.02
MW-03A (Shallow)	30-Jul-96	140.81	23.26	117.55
MW-03A (Shallow)	29-Aug-96	140.81	19.29	121.52
MW-03A (Shallow)	30-Sep-96	140.81	19.35	121.46
MW-03A (Shallow)	31-Oct-96	140.81	19.40	121.41
MW-03A (Shallow)	12-Dec-96	140.81	18.46	122.35
MW-03A (Shallow)	22-Jan-97	140.81	18.16	122.65
MW-03A (Shallow)	31-Mar-97	140.81	18.24	122.57
MW-03A (Shallow)	19-May-97	140.81	18.52	122.29
MW-03A (Shallow)	9-Sep-97	140.81	19.08	121.73
MW-03A (Shallow)	18-Dec-97	140.81	17.55	123.26
MW-03A (Shallow)	17-Mar-98	140.81	18.28	122.53
MW-03A (Shallow)	8-Jun-98	140.81	18.52	122.29
MW-03A (Shallow)	18-Aug-98	140.81	18.91	121.90
MW-03A (Shallow)	5-Nov-98	140.81	19.24	121.57
MW-03A (Shallow)	22-Mar-99	140.81	17.84	122.97
MW-03A (Shallow)	7-Sep-99	140.81	19.34	121.47
MW-03A (Shallow)	9-Dec-99	140.81	18.01	122.80
MW-03A (Shallow)	7-Feb-00	140.81	18.20	122.61
MW-03A (Shallow)	29-May-00	140.81	18.40	122.41
MW-03A (Shallow)	21-Aug-00	140.81	19.05	121.76
MW-03A (Shallow)	6-Nov-00	140.81	19.39	121.42
MW-03A (Shallow)	29-Jan-01	140.81	19.35	121.46
MW-03A (Shallow)	23-Apr-01	140.81	18.97	121.84

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-03A (Shallow)	27-Aug-01	140.81	19.16	121.65
MW-03A (Shallow)	5-Nov-01	140.81	19.52	121.29
MW-03A (Shallow)	7-Feb-02	140.81	17.85	122.96
MW-03A (Shallow)	8-Apr-02	140.81	18.35	122.46
MW-03A (Shallow)	22-Jul-02	140.81	19.03	121.78
MW-03A (Shallow)	7-Oct-02	140.81	19.66	121.15
MW-03A (Shallow)	24-Feb-03	140.81	18.16	122.65
MW-03A (Shallow)	12-May-03	140.81	18.49	122.32
MW-03A (Shallow)	18-Aug-03	140.81	19.31	121.50
MW-03A (Shallow)	17-Nov-03	140.81	19.75	121.06
MW-03A (Shallow)	19-Apr-04	140.81	18.57	122.24
MW-03A (Shallow)	8-Nov-04	140.81	19.34	121.47
MW-03A (Shallow)	23-May-05	140.81	18.57	122.24
MW-03A (Shallow)	24-Oct-05	140.81	19.59	121.22
MW-03A (Shallow)	8-May-06	140.81	18.76	122.05
MW-03A (Shallow)	16-Oct-06	140.81	19.95	120.86
MW-03A (Shallow)	7-May-07	140.81	18.75	122.06
MW-03A (Shallow)	5-Nov-07	140.81	19.41	121.40
MW-03A (Shallow)	19-May-08	140.81	18.57	122.24
MW-03A (Shallow)	10-Nov-08	140.81	20.01	120.80
MW-03A (Shallow)	4-May-09	140.81	18.21	122.60
MW-03A (Shallow)	16-Nov-09	140.81	18.74	122.07
MW-03A (Shallow)	19-Apr-10	140.81	17.71	123.10
MW-03A (Shallow)	4-Oct-10	140.81	18.91	121.90
MW-03A (Shallow)	12-Apr-11	140.81	17.92	122.89
MW-03A (Shallow)	1-Nov-11	140.81	18.95	121.86
MW-03A (Shallow)	30-Apr-12	140.81	18.17	122.64
MW-03A (Shallow)	12-Nov-12	140.81	18.74	122.07
MW-03A (Shallow)	8-Apr-13	140.81	18.49	122.32
MW-03A (Shallow)	18-Nov-13	140.81	18.75	122.06
MW-03A (Shallow)	28-Apr-14	140.81	18.10	122.71
MW-03A (Shallow)	17-Nov-14	140.81	18.57	122.24
MW-03B (Deep)	12-Jul-93	140.57	20.37	120.20
MW-03B (Deep)	10-Aug-93	140.57	21.47	119.10
MW-03B (Deep)	14-Sep-93	140.57	22.55	118.02
MW-03B (Deep)	12-Oct-93	140.57	22.88	117.69
MW-03B (Deep)	4-Dec-93	140.57	22.08	118.49
MW-03B (Deep)	5-Jan-94	140.57	17.86	122.71
MW-03B (Deep)	22-Feb-94	140.57	18.63	121.94
MW-03B (Deep)	25-Mar-94	140.57	15.81	124.76
MW-03B (Deep)	26-Apr-94	140.57	17.27	123.30
MW-03B (Deep)	26-May-94	140.57	19.68	120.89
MW-03B (Deep)	1-Jul-94	140.57	21.81	118.76
MW-03B (Deep)	2-Aug-94	140.57	24.21	116.36
MW-03B (Deep)	2-Sep-94	140.57	23.91	116.66
MW-03B (Deep)	13-Oct-94	140.57	25.92	114.65
MW-03B (Deep)	11-Nov-94	140.57	20.34	120.23
MW-03B (Deep)	21-Dec-94	140.57	14.24	126.33
MW-03B (Deep)	20-Jan-95	140.57	13.54	127.03

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-03B (Deep)	23-Feb-95	140.57	13.96	126.61
MW-03B (Deep)	28-Mar-95	140.57	15.27	125.30
MW-03B (Deep)	14-Apr-95	140.57	13.40	127.17
MW-03B (Deep)	18-May-95	140.57	18.58	121.99
MW-03B (Deep)	20-Jun-95	140.57	14.97	125.60
MW-03B (Deep)	26-Jul-95	140.57	22.33	118.24
MW-03B (Deep)	22-Aug-95	140.57	22.64	117.93
MW-03B (Deep)	11-Sep-95	140.57	22.47	118.10
MW-03B (Deep)	24-Oct-95	140.57	22.31	118.26
MW-03B (Deep)	22-Nov-95	140.57	19.36	121.21
MW-03B (Deep)	20-Dec-95	140.57	13.88	126.69
MW-03B (Deep)	16-Feb-96	140.57	13.47	127.10
MW-03B (Deep)	30-Mar-96	140.57	17.00	123.57
MW-03B (Deep)	9-Apr-96	140.57	17.87	122.70
MW-03B (Deep)	28-May-96	140.57	16.88	123.69
MW-03B (Deep)	28-Jun-96	140.57	19.62	120.95
MW-03B (Deep)	30-Jul-96	140.57	21.84	118.73
MW-03B (Deep)	29-Aug-96	140.57	22.75	117.82
MW-03B (Deep)	12-Dec-96	140.57	15.17	125.40
MW-03B (Deep)	22-Jan-97	140.57	14.42	126.15
MW-03B (Deep)	31-Mar-97	140.57	15.56	125.01
MW-03B (Deep)	19-May-97	140.57	18.58	121.99
MW-03B (Deep)	9-Sep-97	140.57	21.93	118.64
MW-03B (Deep)	18-Dec-97	140.57	16.00	124.57
MW-03B (Deep)	17-Mar-98	140.57	15.25	125.32
MW-03B (Deep)	8-Jun-98	140.57	18.20	122.37
MW-03B (Deep)	18-Aug-98	140.57	21.95	118.62
MW-03B (Deep)	5-Nov-98	140.57	21.91	118.66
MW-03B (Deep)	22-Mar-99	140.57	14.63	125.94
MW-03B (Deep)	7-Sep-99	140.57	23.32	117.25
MW-03B (Deep)	9-Dec-99	140.57	16.63	123.94
MW-03B (Deep)	7-Feb-00	140.57	14.94	125.63
MW-03B (Deep)	29-May-00	140.57	18.59	121.98
MW-03B (Deep)	21-Aug-00	140.57	23.25	117.32
MW-03B (Deep)	6-Nov-00	140.57	22.54	118.03
MW-03B (Deep)	29-Jan-01	140.57	19.42	121.15
MW-03B (Deep)	23-Apr-01	140.57	19.25	121.32
MW-03B (Deep)	27-Aug-01	140.57	22.42	118.15
MW-03B (Deep)	5-Nov-01	140.57	22.95	117.62
MW-03B (Deep)	7-Feb-02	140.57	15.09	125.48
MW-03B (Deep)	8-Apr-02	140.57	16.77	123.80
MW-03B (Deep)	22-Jul-02	140.57	22.71	117.86
MW-03B (Deep)	7-Oct-02	140.57	24.43	116.14
MW-03B (Deep)	24-Feb-03	140.57	16.23	124.34
MW-03B (Deep)	12-May-03	140.57	17.98	122.59
MW-03B (Deep)	18-Aug-03	140.57	24.98	115.59
MW-03B (Deep)	17-Nov-03	140.57	24.34	116.23
MW-03B (Deep)	19-Apr-04	140.57	19.43	121.14
MW-03B (Deep)	8-Nov-04	140.57	22.40	118.17

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-03B (Deep)	23-May-05	140.57	18.87	121.70
MW-03B (Deep)	24-Oct-05	140.57	23.36	117.21
MW-03B (Deep)	8-May-06	140.57	19.95	120.62
MW-03B (Deep)	16-Oct-06	140.57	24.35	116.22
MW-03B (Deep)	7-May-07	140.57	18.68	121.89
MW-03B (Deep)	5-Nov-07	140.57	22.47	118.10
MW-03B (Deep)	19-May-08	140.57	22.13	118.44
MW-03B (Deep)	10-Nov-08	140.57	25.86	114.71
MW-03B (Deep)	4-May-09	140.57	18.68	121.89
MW-03B (Deep)	16-Nov-09	140.57	21.75	118.82
MW-03B (Deep)	19-Apr-10	140.57	16.77	123.80
MW-03B (Deep)	4-Oct-10	140.57	22.49	118.08
MW-03B (Deep)	12-Apr-11	140.57	15.88	124.69
MW-03B (Deep)	1-Nov-11	140.57	22.98	117.59
MW-03B (Deep)	30-Apr-12	140.57	16.82	123.75
MW-03B (Deep)	12-Nov-12	140.57	23.19	117.38
MW-03B (Deep)	8-Apr-13	140.57	17.80	122.77
MW-03B (Deep)	18-Nov-13	140.57	20.75	119.82
MW-03B (Deep)	28-Apr-14	140.57	17.05	123.52
MW-03B (Deep)	17-Nov-14	140.57	22.92	117.65
MW-04A (Shallow)	12-Jul-93	142.31	36.93	105.38
MW-04A (Shallow)	10-Aug-93	142.31	32.62	109.69
MW-04A (Shallow)	14-Sep-93	142.31	29.22	113.09
MW-04A (Shallow)	12-Oct-93	142.31	28.99	113.32
MW-04A (Shallow)	4-Dec-93	142.31	29.11	113.20
MW-04A (Shallow)	5-Jan-94	142.31	26.42	115.89
MW-04A (Shallow)	22-Feb-94	142.31	26.66	115.65
MW-04A (Shallow)	25-Mar-94	142.31	26.39	115.92
MW-04A (Shallow)	26-Apr-94	142.31	26.87	115.44
MW-04A (Shallow)	26-May-94	142.31	27.34	114.97
MW-04A (Shallow)	1-Jul-94	142.31	27.87	114.44
MW-04A (Shallow)	2-Aug-94	142.31	28.48	113.83
MW-04A (Shallow)	2-Sep-94	142.31	28.83	113.48
MW-04A (Shallow)	13-Oct-94	142.31	29.29	113.02
MW-04A (Shallow)	11-Nov-94	142.31	24.18	118.13
MW-04A (Shallow)	21-Dec-94	142.31	19.60	122.71
MW-04A (Shallow)	20-Jan-95	142.31	20.40	121.91
MW-04A (Shallow)	23-Feb-95	142.31	20.89	121.42
MW-04A (Shallow)	28-Mar-95	142.31	25.82	116.49
MW-04A (Shallow)	14-Apr-95	142.31	23.33	118.98
MW-04A (Shallow)	18-May-95	142.31	17.36	124.95
MW-04A (Shallow)	20-Jun-95	142.31	22.61	119.70
MW-04A (Shallow)	26-Jul-95	142.31	27.44	114.87
MW-04A (Shallow)	22-Aug-95	142.31	28.00	114.31
MW-04A (Shallow)	11-Sep-95	142.31	28.17	114.14
MW-04A (Shallow)	24-Oct-95	142.31	27.80	114.51
MW-04A (Shallow)	22-Nov-95	142.31	26.49	115.82
MW-04A (Shallow)	20-Dec-95	142.31	21.65	120.66
MW-04A (Shallow)	11-Jan-96	142.31	24.70	117.61

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-04A (Shallow)	16-Feb-96	142.31	22.17	120.14
MW-04A (Shallow)	30-Mar-96	142.31	26.45	115.86
MW-04A (Shallow)	9-Apr-96	142.31	26.79	115.52
MW-04A (Shallow)	28-May-96	142.31	26.28	116.03
MW-04A (Shallow)	28-Jun-96	142.31	27.40	114.91
MW-04A (Shallow)	30-Jul-96	142.31	27.70	114.61
MW-04A (Shallow)	29-Aug-96	142.31	28.01	114.30
MW-04A (Shallow)	30-Sep-96	142.31	27.72	114.59
MW-04A (Shallow)	31-Oct-96	142.31	27.74	114.57
MW-04A (Shallow)	12-Dec-96	142.31	24.81	117.50
MW-04A (Shallow)	22-Jan-97	142.31	24.72	117.59
MW-04A (Shallow)	31-Mar-97	142.31	26.07	116.24
MW-04A (Shallow)	19-May-97	142.31	26.92	115.39
MW-04A (Shallow)	9-Sep-97	142.31	27.82	114.49
MW-04A (Shallow)	18-Dec-97	142.31	24.87	117.44
MW-04A (Shallow)	17-Mar-98	142.31	25.65	116.66
MW-04A (Shallow)	8-Jun-98	142.31	26.50	115.81
MW-04A (Shallow)	18-Aug-98	142.31	27.53	114.78
MW-04A (Shallow)	5-Nov-98	142.31	26.89	115.42
MW-04A (Shallow)	22-Mar-99	142.31	25.35	116.96
MW-04A (Shallow)	7-Sep-99	142.31	28.13	114.18
MW-04A (Shallow)	9-Dec-99	142.31	24.00	118.31
MW-04A (Shallow)	7-Feb-00	142.31	25.14	117.17
MW-04A (Shallow)	29-May-00	142.31	29.59	112.72
MW-04A (Shallow)	21-Aug-00	142.31	27.82	114.49
MW-04A (Shallow)	6-Nov-00	142.31	27.71	114.60
MW-04A (Shallow)	29-Jan-01	142.31	27.02	115.29
MW-04A (Shallow)	23-Apr-01	142.31	26.61	115.70
MW-04A (Shallow)	27-Aug-01	142.31	27.34	114.97
MW-04A (Shallow)	5-Nov-01	142.31	27.70	114.61
MW-04A (Shallow)	7-Feb-02	142.31	24.76	117.55
MW-04A (Shallow)	8-Apr-02	142.31	26.02	116.29
MW-04A (Shallow)	22-Jul-02	142.31	27.89	114.42
MW-04A (Shallow)	7-Oct-02	142.31	28.53	113.78
MW-04A (Shallow)	24-Feb-03	142.31	25.33	116.98
MW-04A (Shallow)	12-May-03	142.31	26.44	115.87
MW-04A (Shallow)	18-Aug-03	142.31	28.46	113.85
MW-04A (Shallow)	17-Nov-03	142.31	28.71	113.60
MW-04A (Shallow)	19-Apr-04	142.31	26.67	115.64
MW-04A (Shallow)	8-Nov-04	142.31	28.01	114.30
MW-04A (Shallow)	23-May-05	142.31	26.80	115.51
MW-04A (Shallow)	24-Oct-05	142.31	29.00	113.31
MW-04A (Shallow)	8-May-06	142.31	27.06	115.25
MW-04A (Shallow)	16-Oct-06	142.31	29.08	113.23
MW-04A (Shallow)	7-May-07	142.31	26.86	115.45
MW-04A (Shallow)	5-Nov-07	142.31	28.82	113.49
MW-04A (Shallow)	19-May-08	142.31	26.96	115.35
MW-04A (Shallow)	10-Nov-08	142.31	29.11	113.20
MW-04A (Shallow)	4-May-09	142.31	26.56	115.75

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-04A (Shallow)	16-Nov-09	142.31	28.14	114.17
MW-04A (Shallow)	19-Apr-10	142.31	25.75	116.56
MW-04A (Shallow)	4-Oct-10	142.31	29.01	113.30
MW-04A (Shallow)	12-Apr-11	142.31	25.44	116.87
MW-04A (Shallow)	1-Nov-11	142.31	28.31	114.00
MW-04A (Shallow)	30-Apr-12	142.31	25.73	116.58
MW-04A (Shallow)	12-Nov-12	142.31	28.50	113.81
MW-04A (Shallow)	8-Apr-13	142.31	26.80	115.51
MW-04A (Shallow)	18-Nov-13	142.31	27.22	115.09
MW-04A (Shallow)	28-Apr-14	142.31	25.99	116.32
MW-04A (Shallow)	17-Nov-14	142.31	26.96	115.35
MW-04B (Deep)	12-Jul-93	141.81	30.31	111.50
MW-04B (Deep)	10-Aug-93	141.81	30.81	111.00
MW-04B (Deep)	14-Sep-93	141.81	31.33	110.48
MW-04B (Deep)	12-Oct-93	141.81	31.93	109.88
MW-04B (Deep)	4-Dec-93	141.81	31.53	110.28
MW-04B (Deep)	5-Jan-94	141.81	24.30	117.51
MW-04B (Deep)	22-Feb-94	141.81	26.71	115.10
MW-04B (Deep)	25-Mar-94	141.81	20.49	121.32
MW-04B (Deep)	26-Apr-94	141.81	27.50	114.31
MW-04B (Deep)	26-May-94	141.81	29.54	112.27
MW-04B (Deep)	1-Jul-94	141.81	30.94	110.87
MW-04B (Deep)	2-Aug-94	141.81	32.26	109.55
MW-04B (Deep)	2-Sep-94	141.81	32.88	108.93
MW-04B (Deep)	13-Oct-94	141.81	33.16	108.65
MW-04B (Deep)	11-Nov-94	141.81	27.71	114.10
MW-04B (Deep)	21-Dec-94	141.81	18.50	123.31
MW-04B (Deep)	20-Jan-95	141.81	19.25	122.56
MW-04B (Deep)	23-Feb-95	141.81	20.15	121.66
MW-04B (Deep)	28-Mar-95	141.81	23.30	118.51
MW-04B (Deep)	14-Apr-95	141.81	24.30	117.51
MW-04B (Deep)	18-May-95	141.81	23.29	118.52
MW-04B (Deep)	20-Jun-95	141.81	29.38	112.43
MW-04B (Deep)	26-Jul-95	141.81	31.00	110.81
MW-04B (Deep)	22-Aug-95	141.81	31.39	110.42
MW-04B (Deep)	11-Sep-95	141.81	31.62	110.19
MW-04B (Deep)	24-Oct-95	141.81	31.19	110.62
MW-04B (Deep)	22-Nov-95	141.81	26.99	114.82
MW-04B (Deep)	20-Dec-95	141.81	20.16	121.65
MW-04B (Deep)	11-Jan-96	141.81	22.29	119.52
MW-04B (Deep)	16-Feb-96	141.81	20.89	120.92
MW-04B (Deep)	30-Mar-96	141.81	26.44	115.37
MW-04B (Deep)	9-Apr-96	141.81	27.13	114.68
MW-04B (Deep)	28-May-96	141.81	25.80	116.01
MW-04B (Deep)	28-Jun-96	141.81	28.91	112.90
MW-04B (Deep)	30-Jul-96	141.81	30.36	111.45
MW-04B (Deep)	29-Aug-96	141.81	31.12	110.69
MW-04B (Deep)	30-Sep-96	141.81	30.52	111.29
MW-04B (Deep)	31-Oct-96	141.81	30.58	111.23

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-04B (Deep)	12-Dec-96	141.81	22.31	119.50
MW-04B (Deep)	22-Jan-97	141.81	21.94	119.87
MW-04B (Deep)	31-Mar-97	141.81	24.41	117.40
MW-04B (Deep)	19-May-97	141.81	27.84	113.97
MW-04B (Deep)	9-Sep-97	141.81	32.71	109.10
MW-04B (Deep)	18-Dec-97	141.81	20.84	120.97
MW-04B (Deep)	17-Mar-98	141.81	23.95	117.86
MW-04B (Deep)	8-Jun-98	141.81	27.60	114.21
MW-04B (Deep)	18-Aug-98	141.81	30.39	111.42
MW-04B (Deep)	5-Nov-98	141.81	30.91	110.90
MW-04B (Deep)	22-Mar-99	141.81	23.71	118.10
MW-04B (Deep)	7-Sep-99	141.81	31.69	110.12
MW-04B (Deep)	9-Dec-99	141.81	22.50	119.31
MW-04B (Deep)	7-Feb-00	141.81	22.67	119.14
MW-04B (Deep)	29-May-00	141.81	27.74	114.07
MW-04B (Deep)	21-Aug-00	141.81	31.37	110.44
MW-04B (Deep)	6-Nov-00	141.81	31.21	110.60
MW-04B (Deep)	29-Jan-01	141.81	28.46	113.35
MW-04B (Deep)	23-Apr-01	141.81	28.87	112.94
MW-04B (Deep)	27-Aug-01	141.81	30.88	110.93
MW-04B (Deep)	5-Nov-01	141.81	30.93	110.88
MW-04B (Deep)	7-Feb-02	141.81	22.99	118.82
MW-04B (Deep)	8-Apr-02	141.81	25.60	116.21
MW-04B (Deep)	22-Jul-02	141.81	30.68	111.13
MW-04B (Deep)	7-Oct-02	141.81	32.38	109.43
MW-04B (Deep)	24-Feb-03	141.81	24.81	117.00
MW-04B (Deep)	12-May-03	141.81	26.56	115.25
MW-04B (Deep)	18-Aug-03	141.81	32.04	109.77
MW-04B (Deep)	17-Nov-03	141.81	32.18	109.63
MW-04B (Deep)	19-Apr-04	141.81	27.79	114.02
MW-04B (Deep)	8-Nov-04	141.81	29.80	112.01
MW-04B (Deep)	23-May-05	141.81	27.50	114.31
MW-04B (Deep)	24-Oct-05	141.81	31.79	110.02
MW-04B (Deep)	8-May-06	141.81	28.15	113.66
MW-04B (Deep)	16-Oct-06	141.81	32.73	109.08
MW-04B (Deep)	7-May-07	141.81	27.88	113.93
MW-04B (Deep)	5-Nov-07	141.81	30.94	110.87
MW-04B (Deep)	19-May-08	141.81	28.82	112.99
MW-04B (Deep)	10-Nov-08	141.81	22.10	119.71
MW-04B (Deep)	4-May-09	141.81	27.50	114.31
MW-04B (Deep)	16-Nov-09	141.80	29.90	111.90
MW-04B (Deep)	19-Apr-10	141.80	24.61	117.19
MW-04B (Deep)	4-Oct-10	141.80	31.30	110.50
MW-04B (Deep)	12-Apr-11	141.80	24.14	117.66
MW-04B (Deep)	1-Nov-11	141.80	31.50	110.30
MW-04B (Deep)	30-Apr-12	141.80	25.49	116.31
MW-04B (Deep)	12-Nov-12	141.80	30.80	111.00
MW-04B (Deep)	8-Apr-13	141.80	26.65	115.15
MW-04B (Deep)	18-Nov-13	141.80	29.11	112.69

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-04B (Deep)	28-Apr-14	141.80	25.25	116.55
MW-04B (Deep)	17-Nov-14	141.80	29.87	111.93
MW-05A (Shallow)	11-Feb-93	138.73	22.22	116.51
MW-05A (Shallow)	14-Apr-93	138.73	21.03	117.70
MW-05A (Shallow)	12-May-93	138.73	22.41	116.32
MW-05A (Shallow)	12-Jul-93	138.73	26.81	111.92
MW-05A (Shallow)	10-Aug-93	138.73	26.78	111.95
MW-05A (Shallow)	14-Sep-93	138.73	27.68	111.05
MW-05A (Shallow)	12-Oct-93	138.73	28.43	110.30
MW-05A (Shallow)	4-Dec-93	138.73	23.81	114.92
MW-05A (Shallow)	5-Jan-94	138.73	19.24	119.49
MW-05A (Shallow)	22-Feb-94	138.73	20.79	117.94
MW-05A (Shallow)	25-Mar-94	138.73	21.08	117.65
MW-05A (Shallow)	26-Apr-94	138.73	24.21	114.52
MW-05A (Shallow)	26-May-94	138.73	26.39	112.34
MW-05A (Shallow)	1-Jul-94	138.73	27.80	110.93
MW-05A (Shallow)	2-Aug-94	138.73	28.48	110.25
MW-05A (Shallow)	2-Sep-94	138.73	28.87	109.86
MW-05A (Shallow)	13-Oct-94	138.73	29.03	109.70
MW-05A (Shallow)	11-Nov-94	138.73	19.06	119.67
MW-05A (Shallow)	21-Dec-94	138.73	15.48	123.25
MW-05A (Shallow)	20-Jan-95	138.73	27.60	111.13
MW-05A (Shallow)	23-Feb-95	138.73	17.57	121.16
MW-05A (Shallow)	28-Mar-95	138.73	21.26	117.47
MW-05A (Shallow)	14-Apr-95	138.73	17.02	121.71
MW-05A (Shallow)	18-May-95	138.73	24.85	113.88
MW-05A (Shallow)	20-Jun-95	138.73	22.32	116.41
MW-05A (Shallow)	26-Jul-95	138.73	27.89	110.84
MW-05A (Shallow)	22-Aug-95	138.73	33.57	105.16
MW-05A (Shallow)	11-Sep-95	138.73	28.55	110.18
MW-05A (Shallow)	24-Oct-95	138.73	27.17	111.56
MW-05A (Shallow)	22-Nov-95	138.73	22.68	116.05
MW-05A (Shallow)	20-Dec-95	138.73	17.67	121.06
MW-05A (Shallow)	11-Jan-96	138.73	19.35	119.38
MW-05A (Shallow)	16-Feb-96	138.73	18.65	120.08
MW-05A (Shallow)	30-Mar-96	138.73	22.70	116.03
MW-05A (Shallow)	9-Apr-96	138.73	23.57	115.16
MW-05A (Shallow)	28-May-96	138.73	21.79	116.94
MW-05A (Shallow)	28-Jun-96	138.73	25.15	113.58
MW-05A (Shallow)	30-Jul-96	138.73	27.07	111.66
MW-05A (Shallow)	29-Aug-96	138.73	27.85	110.88
MW-05A (Shallow)	30-Sep-96	138.73	25.65	113.08
MW-05A (Shallow)	31-Oct-96	138.73	25.70	113.03
MW-05A (Shallow)	12-Dec-96	138.73	19.44	119.29
MW-05A (Shallow)	22-Jan-97	138.73	18.67	120.06
MW-05A (Shallow)	31-Mar-97	138.73	21.49	117.24
MW-05A (Shallow)	19-May-97	138.73	24.40	114.33
MW-05A (Shallow)	9-Sep-97	138.73	27.17	111.56
MW-05A (Shallow)	18-Dec-97	138.73	16.54	122.19

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-05A (Shallow)	17-Mar-98	138.73	20.70	118.03
MW-05A (Shallow)	8-Jun-98	138.73	23.78	114.95
MW-05A (Shallow)	18-Aug-98	138.73	27.63	111.10
MW-05A (Shallow)	5-Nov-98	138.73	27.58	111.15
MW-05A (Shallow)	22-Mar-99	138.73	19.02	119.71
MW-05A (Shallow)	18-Jun-99	138.73	26.51	112.22
MW-05A (Shallow)	7-Sep-99	138.73	28.33	110.40
MW-05A (Shallow)	9-Dec-99	138.73	16.52	122.21
MW-05A (Shallow)	7-Feb-00	138.73	17.88	120.85
MW-05A (Shallow)	29-May-00	138.73	24.21	114.52
MW-05A (Shallow)	21-Aug-00	138.73	28.09	110.64
MW-05A (Shallow)	6-Nov-00	138.73	24.56	114.17
MW-05A (Shallow)	29-Jan-01	138.73	22.02	116.71
MW-05A (Shallow)	23-Apr-01	138.73	23.93	114.80
MW-05A (Shallow)	27-Aug-01	138.73	27.98	110.75
MW-05A (Shallow)	5-Nov-01	138.73	28.61	110.12
MW-05A (Shallow)	7-Feb-02	138.73	16.69	122.04
MW-05A (Shallow)	8-Apr-02	138.73	20.45	118.28
MW-05A (Shallow)	22-Jul-02	138.73	27.19	111.54
MW-05A (Shallow)	7-Oct-02	138.73	28.26	110.47
MW-05A (Shallow)	24-Feb-03	138.73	16.76	121.97
MW-05A (Shallow)	12-May-03	138.73	22.20	116.53
MW-05A (Shallow)	18-Aug-03	138.73	27.51	111.22
MW-05A (Shallow)	17-Nov-03	138.73	27.90	110.83
MW-05A (Shallow)	19-Apr-04	138.73	21.75	116.98
MW-05A (Shallow)	8-Nov-04	138.73	21.36	117.37
MW-05A (Shallow)	23-May-05	138.73	21.50	117.23
MW-05A (Shallow)	24-Oct-05	138.73	27.97	110.76
MW-05A (Shallow)	8-May-06	138.73	22.98	115.75
MW-05A (Shallow)	16-Oct-06	138.73	27.62	111.11
MW-05A (Shallow)	7-May-07	138.73	21.74	116.99
MW-05A (Shallow)	5-Nov-07	138.73	24.08	114.65
MW-05A (Shallow)	19-May-08	138.73	23.70	115.03
MW-05A (Shallow)	10-Nov-08	138.73	18.65	120.08
MW-05A (Shallow)	4-May-09	138.73	18.31	120.42
MW-05A (Shallow)	16-Nov-09	138.73	17.54	121.19
MW-05A (Shallow)	19-Apr-10	138.73	16.97	121.76
MW-05A (Shallow)	4-Oct-10	138.73	23.37	115.36
MW-05A (Shallow)	12-Apr-11	138.73	16.40	122.33
MW-05A (Shallow)	1-Nov-11	138.73	18.87	119.86
MW-05A (Shallow)	30-Apr-12	138.73	16.76	121.97
MW-05A (Shallow)	12-Nov-12	138.73	17.65	121.08
MW-05A (Shallow)	8-Apr-13	138.73	17.08	121.65
MW-05A (Shallow)	18-Nov-13	138.73	16.76	121.97
MW-05A (Shallow)	28-Apr-14	138.73	15.85	122.88
MW-05A (Shallow)	17-Nov-14	138.73	17.16	121.57
MW-05B (Deep)	11-Feb-93	138.82	27.22	111.60
MW-05B (Deep)	14-Apr-93	138.82	24.84	113.98
MW-05B (Deep)	12-May-93	138.82	27.06	111.76

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-05B (Deep)	12-Jul-93	138.82	31.04	107.78
MW-05B (Deep)	10-Aug-93	138.82	31.43	107.39
MW-05B (Deep)	14-Sep-93	138.82	32.36	106.46
MW-05B (Deep)	12-Oct-93	138.82	33.23	105.59
MW-05B (Deep)	4-Dec-93	138.82	32.84	105.98
MW-05B (Deep)	5-Jan-94	138.82	23.03	115.79
MW-05B (Deep)	22-Feb-94	138.82	26.08	112.74
MW-05B (Deep)	25-Mar-94	138.82	25.34	113.48
MW-05B (Deep)	26-Apr-94	138.82	28.97	109.85
MW-05B (Deep)	26-May-94	138.82	31.43	107.39
MW-05B (Deep)	1-Jul-94	138.82	32.78	106.04
MW-05B (Deep)	2-Aug-94	138.82	33.83	104.99
MW-05B (Deep)	2-Sep-94	138.82	35.60	103.22
MW-05B (Deep)	13-Oct-94	138.82	34.98	103.84
MW-05B (Deep)	11-Nov-94	138.82	22.41	116.41
MW-05B (Deep)	21-Dec-94	138.82	15.46	123.36
MW-05B (Deep)	20-Jan-95	138.82	17.60	121.22
MW-05B (Deep)	23-Feb-95	138.82	18.74	120.08
MW-05B (Deep)	28-Mar-95	138.82	24.14	114.68
MW-05B (Deep)	14-Apr-95	138.82	23.69	115.13
MW-05B (Deep)	18-May-95	138.82	30.00	108.82
MW-05B (Deep)	20-Jun-95	138.82	27.14	111.68
MW-05B (Deep)	26-Jul-95	138.82	32.42	106.40
MW-05B (Deep)	11-Sep-95	138.82	33.77	105.05
MW-05B (Deep)	24-Oct-95	138.82	33.14	105.68
MW-05B (Deep)	22-Nov-95	138.82	27.47	111.35
MW-05B (Deep)	20-Dec-95	138.82	19.09	119.73
MW-05B (Deep)	11-Jan-96	138.82	21.68	117.14
MW-05B (Deep)	16-Feb-96	138.82	20.77	118.05
MW-05B (Deep)	30-Mar-96	138.82	27.88	110.94
MW-05B (Deep)	9-Apr-96	138.82	28.87	109.95
MW-05B (Deep)	28-May-96	138.82	23.36	115.46
MW-05B (Deep)	28-Jun-96	138.82	30.96	107.86
MW-05B (Deep)	30-Jul-96	138.82	32.51	106.31
MW-05B (Deep)	29-Aug-96	138.82	33.14	105.68
MW-05B (Deep)	30-Sep-96	138.82	33.21	105.61
MW-05B (Deep)	31-Oct-96	138.82	33.29	105.53
MW-05B (Deep)	12-Dec-96	138.82	21.76	117.06
MW-05B (Deep)	22-Jan-97	138.82	21.20	117.62
MW-05B (Deep)	31-Mar-97	138.82	25.45	113.37
MW-05B (Deep)	19-May-97	138.82	29.86	108.96
MW-05B (Deep)	9-Sep-97	138.82	32.88	105.94
MW-05B (Deep)	18-Dec-97	138.82	19.55	119.27
MW-05B (Deep)	17-Mar-98	138.82	24.65	114.17
MW-05B (Deep)	8-Jun-98	138.82	29.71	109.11
MW-05B (Deep)	18-Aug-98	138.82	33.14	105.68
MW-05B (Deep)	5-Nov-98	138.82	34.01	104.81
MW-05B (Deep)	22-Mar-99	138.82	24.16	114.66
MW-05B (Deep)	7-Sep-99	138.82	34.06	104.76

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-05B (Deep)	9-Dec-99	138.82	21.49	117.33
MW-05B (Deep)	7-Feb-00	138.82	22.47	116.35
MW-05B (Deep)	29-May-00	138.82	30.16	108.66
MW-05B (Deep)	21-Aug-00	138.82	33.86	104.96
MW-05B (Deep)	6-Nov-00	138.82	33.91	104.91
MW-05B (Deep)	29-Jan-01	138.82	30.73	108.09
MW-05B (Deep)	23-Apr-01	138.82	30.57	108.25
MW-05B (Deep)	27-Aug-01	138.82	33.88	104.94
MW-05B (Deep)	5-Nov-01	138.82	33.96	104.86
MW-05B (Deep)	7-Feb-02	138.82	22.39	116.43
MW-05B (Deep)	8-Apr-02	138.82	26.22	112.60
MW-05B (Deep)	22-Jul-02	138.82	32.72	106.10
MW-05B (Deep)	7-Oct-02	138.82	34.41	104.41
MW-05B (Deep)	24-Feb-03	138.82	22.94	115.88
MW-05B (Deep)	12-May-03	138.82	27.19	111.63
MW-05B (Deep)	18-Aug-03	138.82	33.91	104.91
MW-05B (Deep)	17-Nov-03	138.82	34.55	104.27
MW-05B (Deep)	19-Apr-04	138.82	28.80	110.02
MW-05B (Deep)	8-Nov-04	138.82	31.86	106.96
MW-05B (Deep)	23-May-05	138.82	28.24	110.58
MW-05B (Deep)	24-Oct-05	138.82	34.19	104.63
MW-05B (Deep)	8-May-06	138.82	29.54	109.28
MW-05B (Deep)	16-Oct-06	138.82	34.81	104.01
MW-05B (Deep)	7-May-07	138.82	29.44	109.38
MW-05B (Deep)	5-Nov-07	138.82	32.43	106.39
MW-05B (Deep)	19-May-08	138.82	29.60	109.22
MW-05B (Deep)	10-Nov-08	138.82	22.04	116.78
MW-05B (Deep)	4-May-09	138.82	28.52	110.30
MW-05B (Deep)	16-Nov-09	138.82	28.65	110.17
MW-05B (Deep)	19-Apr-10	138.82	23.84	114.98
MW-05B (Deep)	4-Oct-10	138.82	32.80	106.02
MW-05B (Deep)	12-Apr-11	138.82	23.43	115.39
MW-05B (Deep)	1-Nov-11	138.82	NR	---
MW-05B (Deep)	30-Apr-12	138.82	25.67	113.15
MW-05B (Deep) [c]	12-Nov-12	138.88	28.72	110.16
MW-05B (Deep)	8-Apr-13	138.88	26.51	112.37
MW-05B (Deep)	18-Nov-13	138.88	30.15	108.73
MW-05B (Deep)	28-Apr-14	138.88	23.86	115.02
MW-05B (Deep)	17-Nov-14	138.88	29.61	109.27
MW-06A (Shallow)	12-Jul-93	128.95	19.28	109.67
MW-06A (Shallow)	10-Aug-93	128.95	16.78	112.17
MW-06A (Shallow)	14-Sep-93	128.95	17.10	111.85
MW-06A (Shallow)	12-Oct-93	128.95	17.41	111.54
MW-06A (Shallow)	4-Dec-93	128.95	17.71	111.24
MW-06A (Shallow)	5-Jan-94	128.95	17.47	111.48
MW-06A (Shallow)	22-Feb-94	128.95	15.48	113.47
MW-06A (Shallow)	25-Mar-94	128.95	15.50	113.45
MW-06A (Shallow)	26-Apr-94	128.95	14.07	114.88

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-06A (Shallow)	26-May-94	128.95	14.98	113.97
MW-06A (Shallow)	1-Jul-94	128.95	16.36	112.59
MW-06A (Shallow)	2-Aug-94	128.95	16.70	112.25
MW-06A (Shallow)	2-Sep-94	128.95	17.46	111.49
MW-06A (Shallow)	13-Oct-94	128.95	18.47	110.48
MW-06A (Shallow)	11-Nov-94	128.95	18.33	110.62
MW-06A (Shallow)	21-Dec-94	128.95	15.33	113.62
MW-06A (Shallow)	20-Jan-95	128.95	12.06	116.89
MW-06A (Shallow)	23-Feb-95	128.95	11.35	117.60
MW-06A (Shallow)	28-Mar-95	128.95	11.57	117.38
MW-06A (Shallow)	14-Apr-95	128.95	12.04	116.91
MW-06A (Shallow)	18-May-95	128.95	13.44	115.51
MW-06A (Shallow)	20-Jun-95	128.95	12.35	116.60
MW-06A (Shallow)	26-Jul-95	128.95	15.42	113.53
MW-06A (Shallow)	22-Aug-95	128.95	16.00	112.95
MW-06A (Shallow)	11-Sep-95	128.95	16.47	112.48
MW-06A (Shallow)	20-Dec-95	128.95	15.92	113.03
MW-06A (Shallow)	11-Jan-96	128.95	14.64	114.31
MW-06A (Shallow)	16-Feb-96	128.95	11.65	117.30
MW-06A (Shallow)	30-Mar-96	128.95	11.36	117.59
MW-06A (Shallow)	9-Apr-96	128.95	11.64	117.31
MW-06A (Shallow)	28-May-96	128.95	11.69	117.26
MW-06A (Shallow)	28-Jun-96	128.95	13.39	115.56
MW-06A (Shallow)	30-Jul-96	128.95	14.75	114.20
MW-06A (Shallow)	29-Aug-96	128.95	15.29	113.66
MW-06A (Shallow)	30-Sep-96	128.95	13.80	115.15
MW-06A (Shallow)	31-Oct-96	128.95	17.10	111.85
MW-06A (Shallow)	22-Jan-97	128.95	13.48	115.47
MW-06A (Shallow)	31-Mar-97	128.95	12.17	116.78
MW-06A (Shallow)	19-May-97	128.95	12.82	116.13
MW-06A (Shallow)	9-Sep-97	128.95	15.60	113.35
MW-06A (Shallow)	18-Dec-97	128.95	13.21	115.74
MW-06A (Shallow)	17-Mar-98	128.95	15.41	113.54
MW-06A (Shallow)	8-Jun-98	128.95	15.06	113.89
MW-06A (Shallow)	18-Aug-98	128.95	15.19	113.76
MW-06A (Shallow)	5-Nov-98	128.95	17.09	111.86
MW-06A (Shallow)	22-Mar-99	128.95	14.96	113.99
MW-06A (Shallow)	7-Sep-99	128.95	16.14	112.81
MW-06A (Shallow)	9-Dec-99	128.95	13.43	115.52
MW-06A (Shallow)	7-Feb-00	128.95	11.13	117.82
MW-06A (Shallow)	29-May-00	128.95	13.62	115.33
MW-06A (Shallow)	21-Aug-00	128.95	16.07	112.88
MW-06A (Shallow)	6-Nov-00	128.95	NR	---
MW-06A (Shallow)	29-Jan-01	128.95	NR	---
MW-06A (Shallow)	23-Apr-01	128.95	16.39	112.56
MW-06A (Shallow)	27-Aug-01	128.95	16.70	112.25
MW-06A (Shallow)	5-Nov-01	128.95	17.95	111.00
MW-06A (Shallow)	7-Feb-02	128.95	11.55	117.40
MW-06A (Shallow)	8-Apr-02	128.95	9.91	119.04

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-06A (Shallow)	22-Jul-02	128.95	14.36	114.59
MW-06A (Shallow)	7-Oct-02	128.95	16.63	112.32
MW-06A (Shallow)	24-Feb-03	128.95	10.14	118.81
MW-06A (Shallow)	12-May-03	128.95	10.78	118.17
MW-06A (Shallow)	18-Aug-03	128.95	14.82	114.13
MW-06A (Shallow)	17-Nov-03	128.95	14.85	114.10
MW-06A (Shallow)	19-Apr-04	128.95	9.98	118.97
MW-06A (Shallow)	8-Nov-04	128.95	10.00	118.95
MW-06A (Shallow)	23-May-05	128.95	9.59	119.36
MW-06A (Shallow)	24-Oct-05	128.95	12.36	116.59
MW-06A (Shallow)	8-May-06	128.95	9.43	119.52
MW-06A (Shallow)	16-Oct-06	128.95	12.67	116.28
MW-06A (Shallow)	7-May-07	128.95	8.98	119.97
MW-06A (Shallow)	5-Nov-07	128.95	10.08	118.87
MW-06A (Shallow)	19-May-08	128.95	9.84	119.11
MW-06A (Shallow)	10-Nov-08	128.95	8.31	120.64
MW-06A (Shallow)	4-May-09	128.95	8.05	120.90
MW-06A (Shallow)	16-Nov-09	128.95	6.77	122.18
MW-06A (Shallow)	19-Apr-10	128.95	7.07	121.88
MW-06A (Shallow)	4-Oct-10	128.95	9.67	119.28
MW-06A (Shallow)	12-Apr-11	128.95	6.62	122.33
MW-06A (Shallow)	1-Nov-11	128.95	8.15	120.80
MW-06A (Shallow)	30-Apr-12	128.95	7.41	121.54
MW-06A (Shallow)	12-Nov-12	128.95	6.94	122.01
MW-06A (Shallow)	8-Apr-13	128.95	6.69	122.26
MW-06A (Shallow)	18-Nov-13	128.95	8.28	120.67
MW-06A (Shallow)	28-Apr-14	128.95	6.36	122.59
MW-06A (Shallow)	17-Nov-14	128.95	9.21	119.74
MW-06B (Deep)	12-Jul-93	128.59	18.24	110.35
MW-06B (Deep)	10-Aug-93	128.59	18.79	109.80
MW-06B (Deep)	14-Sep-93	128.59	19.60	108.99
MW-06B (Deep)	12-Oct-93	128.59	20.39	108.20
MW-06B (Deep)	4-Dec-93	128.59	20.82	107.77
MW-06B (Deep)	5-Jan-94	128.59	15.69	112.90
MW-06B (Deep)	22-Feb-94	128.59	15.50	113.09
MW-06B (Deep)	25-Mar-94	128.59	14.49	114.10
MW-06B (Deep)	26-Apr-94	128.59	16.03	112.56
MW-06B (Deep)	26-May-94	128.59	17.68	110.91
MW-06B (Deep)	1-Jul-94	128.59	18.90	109.69
MW-06B (Deep)	2-Aug-94	128.59	20.00	108.59
MW-06B (Deep)	2-Sep-94	128.59	20.50	108.09
MW-06B (Deep)	13-Oct-94	128.59	21.15	107.44
MW-06B (Deep)	11-Nov-94	128.59	18.00	110.59
MW-06B (Deep)	21-Dec-94	128.59	10.53	118.06
MW-06B (Deep)	20-Jan-95	128.59	9.46	119.13
MW-06B (Deep)	23-Feb-95	128.59	9.75	118.84
MW-06B (Deep)	28-Mar-95	128.59	12.27	116.32
MW-06B (Deep)	14-Apr-95	128.59	14.08	114.51
MW-06B (Deep)	18-May-95	128.59	16.23	112.36

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-06B (Deep)	20-Jun-95	128.59	17.42	111.17
MW-06B (Deep)	26-Jul-95	128.59	18.18	110.41
MW-06B (Deep)	22-Aug-95	128.59	18.89	109.70
MW-06B (Deep)	11-Sep-95	128.59	19.19	109.40
MW-06B (Deep)	24-Oct-95	128.59	19.55	109.04
MW-06B (Deep)	22-Nov-95	128.59	16.36	112.23
MW-06B (Deep)	20-Dec-95	128.59	9.64	118.95
MW-06B (Deep)	11-Jan-96	128.59	12.04	116.55
MW-06B (Deep)	16-Feb-96	128.59	9.63	118.96
MW-06B (Deep)	30-Mar-96	128.59	14.09	114.50
MW-06B (Deep)	9-Apr-96	128.59	15.13	113.46
MW-06B (Deep)	28-May-96	128.59	14.45	114.14
MW-06B (Deep)	28-Jun-96	128.59	16.62	111.97
MW-06B (Deep)	30-Jul-96	128.59	18.29	110.30
MW-06B (Deep)	29-Aug-96	128.59	19.02	109.57
MW-06B (Deep)	30-Sep-96	128.59	18.47	110.12
MW-06B (Deep)	31-Oct-96	128.59	19.61	108.98
MW-06B (Deep)	22-Jan-97	128.59	10.80	117.79
MW-06B (Deep)	31-Mar-97	128.59	12.67	115.92
MW-06B (Deep)	19-May-97	128.59	15.91	112.68
MW-06B (Deep)	9-Sep-97	128.59	19.27	109.32
MW-06B (Deep)	18-Dec-97	128.59	12.53	116.06
MW-06B (Deep)	17-Mar-98	128.59	12.31	116.28
MW-06B (Deep)	8-Jun-98	128.59	16.88	111.71
MW-06B (Deep)	18-Aug-98	128.59	18.38	110.21
MW-06B (Deep)	5-Nov-98	128.59	19.49	109.10
MW-06B (Deep)	22-Mar-99	128.59	11.16	117.43
MW-06B (Deep)	7-Sep-99	128.59	19.11	109.48
MW-06B (Deep)	9-Dec-99	128.59	12.23	116.36
MW-06B (Deep)	7-Feb-00	128.59	11.21	117.38
MW-06B (Deep)	29-May-00	128.59	15.88	112.71
MW-06B (Deep)	21-Aug-00	128.59	18.86	109.73
MW-06B (Deep)	6-Nov-00	128.59	19.09	109.50
MW-06B (Deep)	29-Jan-01	128.59	17.27	111.32
MW-06B (Deep)	23-Apr-01	128.59	16.95	111.64
MW-06B (Deep)	27-Aug-01	128.59	19.02	109.57
MW-06B (Deep)	5-Nov-01	128.59	19.52	109.07
MW-06B (Deep)	7-Feb-02	128.59	10.16	118.43
MW-06B (Deep)	8-Apr-02	128.59	12.15	116.44
MW-06B (Deep)	22-Jul-02	128.59	16.38	112.21
MW-06B (Deep)	7-Oct-02	128.59	18.08	110.51
MW-06B (Deep)	24-Feb-03	128.59	11.05	117.54
MW-06B (Deep)	12-May-03	128.59	13.31	115.28
MW-06B (Deep)	18-Aug-03	128.59	18.28	110.31
MW-06B (Deep)	17-Nov-03	128.59	19.76	108.83
MW-06B (Deep)	19-Apr-04	128.59	14.94	113.65
MW-06B (Deep)	8-Nov-04	128.59	18.45	110.14
MW-06B (Deep)	23-May-05	128.59	15.06	113.53
MW-06B (Deep)	24-Oct-05	128.59	18.80	109.79

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-06B (Deep)	8-May-06	128.59	15.15	113.44
MW-06B (Deep)	16-Oct-06	128.59	19.67	108.92
MW-06B (Deep)	7-May-07	128.59	15.49	113.10
MW-06B (Deep)	5-Nov-07	128.59	19.00	109.59
MW-06B (Deep)	19-May-08	128.59	15.39	113.20
MW-06B (Deep)	10-Nov-08	128.59	19.99	108.60
MW-06B (Deep)	4-May-09	128.59	15.23	113.36
MW-06B (Deep)	16-Nov-09	128.59	18.19	110.40
MW-06B (Deep)	19-Apr-10	128.59	12.31	116.28
MW-06B (Deep)	4-Oct-10	128.59	19.31	109.28
MW-06B (Deep)	12-Apr-11	128.59	12.08	116.51
MW-06B (Deep)	1-Nov-11	128.59	19.91	108.68
MW-06B (Deep)	30-Apr-12	128.59	12.97	115.62
MW-06B (Deep)	12-Nov-12	128.59	18.20	110.39
MW-06B (Deep)	8-Apr-13	128.59	14.58	114.01
MW-06B (Deep)	18-Nov-13	128.59	17.74	110.85
MW-06B (Deep)	28-Apr-14	128.59	13.06	115.53
MW-06B (Deep)	17-Nov-14	128.59	17.93	110.66
MW-09A (Shallow)	4-Dec-93	128.42	13.28	115.14
MW-09A (Shallow)	5-Jan-94	128.42	11.13	117.29
MW-09A (Shallow)	22-Feb-94	128.42	10.28	118.14
MW-09A (Shallow)	25-Mar-94	128.42	9.25	119.17
MW-09A (Shallow)	26-Apr-94	128.42	9.81	118.61
MW-09A (Shallow)	26-May-94	128.42	11.29	117.13
MW-09A (Shallow)	1-Jul-94	128.42	12.19	116.23
MW-09A (Shallow)	2-Aug-94	128.42	13.39	115.03
MW-09A (Shallow)	2-Sep-94	128.42	11.25	117.17
MW-09A (Shallow)	13-Oct-94	128.42	13.41	115.01
MW-09A (Shallow)	11-Nov-94	128.42	11.84	116.58
MW-09A (Shallow)	21-Dec-94	128.42	8.82	119.60
MW-09A (Shallow)	20-Jan-95	128.42	8.42	120.00
MW-09A (Shallow)	23-Feb-95	128.42	8.23	120.19
MW-09A (Shallow)	28-Mar-95	128.42	8.46	119.96
MW-09A (Shallow)	14-Apr-95	128.42	8.85	119.57
MW-09A (Shallow)	18-May-95	128.42	9.73	118.69
MW-09A (Shallow)	20-Jun-95	128.42	10.54	117.88
MW-09A (Shallow)	26-Jul-95	128.42	10.93	117.49
MW-09A (Shallow)	22-Aug-95	128.42	12.12	116.30
MW-09A (Shallow)	11-Sep-95	128.42	12.11	116.31
MW-09A (Shallow)	24-Oct-95	128.42	12.99	115.43
MW-09A (Shallow)	22-Nov-95	128.42	12.30	116.12
MW-09A (Shallow)	20-Dec-95	128.42	10.28	118.14
MW-09A (Shallow)	11-Jan-96	128.42	9.79	118.63
MW-09A (Shallow)	16-Feb-96	128.42	8.49	119.93
MW-09A (Shallow)	30-Mar-96	128.42	8.76	119.66
MW-09A (Shallow)	9-Apr-96	128.42	9.02	119.40
MW-09A (Shallow)	28-May-96	128.42	8.78	119.64
MW-09A (Shallow)	28-Jun-96	128.42	10.07	118.35

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-09A (Shallow)	30-Jul-96	128.42	10.54	117.88
MW-09A (Shallow)	29-Aug-96	128.42	11.53	116.89
MW-09A (Shallow)	30-Sep-96	128.42	12.53	115.89
MW-09A (Shallow)	31-Oct-96	128.42	13.06	115.36
MW-09A (Shallow)	22-Jan-97	128.42	11.88	116.54
MW-09A (Shallow)	31-Mar-97	128.42	9.41	119.01
MW-09A (Shallow)	19-May-97	128.42	9.28	119.14
MW-09A (Shallow)	9-Sep-97	128.42	12.71	115.71
MW-09A (Shallow)	18-Dec-97	128.42	10.74	117.68
MW-09A (Shallow)	17-Mar-98	128.42	2.94	125.48
MW-09A (Shallow)	8-Jun-98	128.42	11.85	116.57
MW-09A (Shallow)	18-Aug-98	128.42	11.47	116.95
MW-09A (Shallow)	5-Nov-98	128.42	12.94	115.48
MW-09A (Shallow)	22-Mar-99	128.42	10.19	118.23
MW-09A (Shallow)	7-Sep-99	128.42	12.13	116.29
MW-09A (Shallow)	9-Dec-99	128.42	10.67	117.75
MW-09A (Shallow)	7-Feb-00	128.42	9.83	118.59
MW-09A (Shallow)	29-May-00	128.42	10.36	118.06
MW-09A (Shallow)	21-Aug-00	128.42	11.90	116.52
MW-09A (Shallow)	6-Nov-00	128.42	13.31	115.11
MW-09A (Shallow)	29-Jan-01	128.42	12.68	115.74
MW-09A (Shallow)	23-Apr-01	128.42	10.95	117.47
MW-09A (Shallow)	27-Aug-01	128.42	12.12	116.30
MW-09A (Shallow)	5-Nov-01	128.42	12.66	115.76
MW-09A (Shallow)	7-Feb-02	128.42	9.59	118.83
MW-09A (Shallow)	8-Apr-02	128.42	7.99	120.43
MW-09A (Shallow)	22-Jul-02	128.42	9.47	118.95
MW-09A (Shallow)	7-Oct-02	128.42	11.13	117.29
MW-09A (Shallow)	24-Feb-03	128.42	10.62	117.80
MW-09A (Shallow)	12-May-03	128.42	8.56	119.86
MW-09A (Shallow)	18-Aug-03	128.42	11.63	116.79
MW-09A (Shallow)	17-Nov-03	128.42	12.41	116.01
MW-09A (Shallow)	19-Apr-04	128.42	9.58	118.84
MW-09A (Shallow)	8-Nov-04	128.42	12.09	116.33
MW-09A (Shallow)	23-May-05	128.42	10.34	118.08
MW-09A (Shallow)	24-Oct-05	128.42	13.01	115.41
MW-09A (Shallow)	8-May-06	128.42	9.65	118.77
MW-09A (Shallow)	16-Oct-06	128.42	13.97	114.45
MW-09A (Shallow)	7-May-07	128.42	9.75	118.67
MW-09A (Shallow)	5-Nov-07	128.42	13.60	114.82
MW-09A (Shallow)	19-May-08	128.42	9.82	118.60
MW-09A (Shallow)	10-Nov-08	128.42	13.05	115.37
MW-09A (Shallow)	4-May-09	128.42	10.89	117.53
MW-09A (Shallow)	16-Nov-09	128.42	12.57	115.85
MW-09A (Shallow)	19-Apr-10	128.42	8.75	119.67
MW-09A (Shallow)	4-Oct-10	128.42	13.16	115.26
MW-09A (Shallow)	12-Apr-11	128.42	0.20	128.22
MW-09A (Shallow)	1-Nov-11	128.42	12.37	116.05
MW-09A (Shallow)	30-Apr-12	128.42	8.70	119.72

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-09A (Shallow)	12-Nov-12	128.42	12.17	116.25
MW-09A (Shallow)	8-Apr-13	128.42	8.60	119.82
MW-09A (Shallow)	18-Nov-13	128.42	11.15	117.27
MW-09A (Shallow)	28-Apr-14	128.42	8.28	120.14
MW-09A (Shallow)	17-Nov-14	128.42	12.20	116.22
MW-09B(R)(Deep)	2-Sep-94	127.40	8.15	119.25
MW-09B(R)(Deep)	13-Oct-94	127.40	8.15	119.25
MW-09B(R)(Deep)	11-Nov-94	127.40	5.97	121.43
MW-09B(R)(Deep)	21-Dec-94	127.40	3.90	123.50
MW-09B(R)(Deep)	20-Jan-95	127.40	4.14	123.26
MW-09B(R)(Deep)	23-Feb-95	127.40	3.00	124.40
MW-09B(R)(Deep)	28-Mar-95	127.40	3.12	124.28
MW-09B(R)(Deep)	14-Apr-95	127.40	3.71	123.69
MW-09B(R)(Deep)	18-May-95	127.40	3.88	123.52
MW-09B(R)(Deep)	20-Jun-95	127.40	5.00	122.40
MW-09B(R)(Deep)	26-Jul-95	127.40	6.76	120.64
MW-09B(R)(Deep)	22-Aug-95	127.40	6.67	120.73
MW-09B(R)(Deep)	11-Sep-95	127.40	7.24	120.16
MW-09B(R)(Deep)	24-Oct-95	127.40	6.28	121.12
MW-09B(R)(Deep)	22-Nov-95	127.40	4.56	122.84
MW-09B(R)(Deep)	20-Dec-95	127.40	2.78	124.62
MW-09B(R)(Deep)	11-Jan-96	127.40	3.34	124.06
MW-09B(R)(Deep)	16-Feb-96	127.40	2.40	125.00
MW-09B(R)(Deep)	30-Mar-96	127.40	3.58	123.82
MW-09B(R)(Deep)	9-Apr-96	127.40	3.68	123.72
MW-09B(R)(Deep)	28-May-96	127.40	3.49	123.91
MW-09B(R)(Deep)	28-Jun-96	127.40	3.90	123.50
MW-09B(R)(Deep)	30-Jul-96	127.40	4.71	122.69
MW-09B(R)(Deep)	29-Aug-96	127.40	4.87	122.53
MW-09B(R)(Deep)	30-Sep-96	127.40	4.72	122.68
MW-09B(R)(Deep)	31-Oct-96	127.40	6.33	121.07
MW-09B(R)(Deep)	22-Jan-97	127.40	2.41	124.99
MW-09B(R)(Deep)	31-Mar-97	127.40	6.68	120.72
MW-09B(R)(Deep)	19-May-97	127.40	5.18	122.22
MW-09B(R)(Deep)	9-Sep-97	127.40	2.99	124.41
MW-09B(R)(Deep)	18-Dec-97	127.40	3.65	123.75
MW-09B(R)(Deep)	17-Mar-98	127.40	3.46	123.94
MW-09B(R)(Deep)	8-Jun-98	127.40	0.00	127.40
MW-09B(R)(Deep)	18-Aug-98	127.40	0.65	126.75
MW-09B(R)(Deep)	5-Nov-98	127.40	2.26	125.14
MW-09B(R)(Deep)	22-Mar-99	127.40	0.00	127.40
MW-09B(R)(Deep)	7-Sep-99	127.40	2.96	124.44
MW-09B(R)(Deep)	9-Dec-99	127.40	2.14	125.26
MW-09B(R)(Deep)	7-Feb-00	127.40	0.00	127.40
MW-09B(R)(Deep)	29-May-00	127.40	0.25	127.15
MW-09B(R)(Deep)	21-Aug-00	127.40	2.96	124.44
MW-09B(R)(Deep)	6-Nov-00	127.40	2.85	124.55
MW-09B(R)(Deep)	29-Jan-01	127.40	2.39	125.01
MW-09B(R)(Deep)	23-Apr-01	127.40	1.92	125.48

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-09B(R)(Deep)	27-Aug-01	127.40	2.55	124.85
MW-09B(R)(Deep)	5-Nov-01	127.40	2.66	124.74
MW-09B(R)(Deep)	7-Feb-02	127.40	0.00	127.40
MW-09B(R)(Deep)	8-Apr-02	127.40	0.00	127.40
MW-09B(R)(Deep)	22-Jul-02	127.40	0.88	126.52
MW-09B(R)(Deep)	7-Oct-02	127.40	3.31	124.09
MW-09B(R)(Deep)	24-Feb-03	127.40	2.43	124.97
MW-09B(R)(Deep)	12-May-03	127.40	0.38	127.02
MW-09B(R)(Deep)	18-Aug-03	127.40	4.64	122.76
MW-09B(R)(Deep)	17-Nov-03	127.40	2.69	124.71
MW-09B(R)(Deep)	19-Apr-04	127.40	0.47	126.93
MW-09B(R)(Deep)	8-Nov-04	127.40	1.68	125.72
MW-09B(R)(Deep)	23-May-05	127.40	9.97	117.43
MW-09B(R)(Deep)	24-Oct-05	127.40	4.04	123.36
MW-09B(R)(Deep)	8-May-06	127.40	0.51	126.89
MW-09B(R)(Deep)	16-Oct-06	127.40	2.81	124.59
MW-09B(R)(Deep)	7-May-07	127.40	0.35	127.05
MW-09B(R)(Deep)	5-Nov-07	127.40	1.71	125.69
MW-09B(R)(Deep)	19-May-08	127.40	1.31	126.09
MW-09B(R)(Deep)	10-Nov-08	127.40	7.50	119.90
MW-09B(R)(Deep)	4-May-09	127.40	5.30	122.10
MW-09B(R)(Deep)	16-Nov-09	127.40	3.96	123.44
MW-09B(R)(Deep)	19-Apr-10	127.40	0.68	126.72
MW-09B(R)(Deep)	4-Oct-10	127.40	3.73	123.67
MW-09B(R)(Deep)	12-Apr-11	127.40	7.86	119.54
MW-09B(R)(Deep)	1-Nov-11	127.40	1.75	125.65
MW-09B(R)(Deep)	30-Apr-12	127.40	0.73	126.67
MW-09B(R)(Deep)	12-Nov-12	127.40	1.60	125.80
MW-09B(R)(Deep)	8-Apr-13	127.40	0.86	126.54
MW-09B(R)(Deep)	18-Nov-13	127.40	2.25	125.15
MW-09B(R)(Deep)	28-Apr-14	127.40	1.36	126.04
MW-09B(R)(Deep)	17-Nov-14	127.40	5.22	122.18
MW-10A (Shallow)	4-Dec-93	153.21	16.35	136.86
MW-10A (Shallow)	5-Jan-94	153.21	4.08	149.13
MW-10A (Shallow)	22-Feb-94	153.21	3.96	149.25
MW-10A (Shallow)	25-Mar-94	153.21	4.62	148.59
MW-10A (Shallow)	26-Apr-94	153.21	6.22	146.99
MW-10A (Shallow)	26-May-94	153.21	8.31	144.90
MW-10A (Shallow)	1-Jul-94	153.21	15.49	137.72
MW-10A (Shallow)	2-Aug-94	153.21	19.44	133.77
MW-10A (Shallow)	2-Sep-94	153.21	20.72	132.49
MW-10A (Shallow)	13-Oct-94	153.21	21.71	131.50
MW-10A (Shallow)	11-Nov-94	153.21	14.42	138.79
MW-10A (Shallow)	21-Dec-94	153.21	4.82	148.39
MW-10A (Shallow)	20-Jan-95	153.21	4.65	148.56
MW-10A (Shallow)	23-Feb-95	153.21	4.88	148.33
MW-10A (Shallow)	28-Mar-95	153.21	5.41	147.80
MW-10A (Shallow)	14-Apr-95	153.21	5.60	147.61
MW-10A (Shallow)	18-May-95	153.21	8.05	145.16

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-10A (Shallow)	20-Jun-95	153.21	9.54	143.67
MW-10A (Shallow)	26-Jul-95	153.21	14.69	138.52
MW-10A (Shallow)	22-Aug-95	153.21	17.20	136.01
MW-10A (Shallow)	11-Sep-95	153.21	18.32	134.89
MW-10A (Shallow)	24-Oct-95	153.21	17.85	135.36
MW-10A (Shallow)	22-Nov-95	153.21	7.00	146.21
MW-10A (Shallow)	20-Dec-95	153.21	4.39	148.82
MW-10A (Shallow)	11-Jan-96	153.21	4.46	148.75
MW-10A (Shallow)	16-Feb-96	153.21	5.16	148.05
MW-10A (Shallow)	30-Mar-96	153.21	6.24	146.97
MW-10A (Shallow)	9-Apr-96	153.21	6.49	146.72
MW-10A (Shallow)	28-May-96	153.21	5.66	147.55
MW-10A (Shallow)	28-Jun-96	153.21	9.63	143.58
MW-10A (Shallow)	30-Jul-96	153.21	15.73	137.48
MW-10A (Shallow)	29-Aug-96	153.21	18.35	134.86
MW-10A (Shallow)	30-Sep-96	153.21	10.01	143.20
MW-10A (Shallow)	31-Oct-96	153.21	17.97	135.24
MW-10A (Shallow)	12-Dec-96	153.21	4.56	148.65
MW-10A (Shallow)	22-Jan-97	153.21	4.55	148.66
MW-10A (Shallow)	31-Mar-97	153.21	5.67	147.54
MW-10A (Shallow)	19-May-97	153.21	6.74	146.47
MW-10A (Shallow)	9-Sep-97	153.21	15.49	137.72
MW-10A (Shallow)	18-Dec-97	153.21	3.93	149.28
MW-10A (Shallow)	17-Mar-98	153.21	5.00	148.21
MW-10A (Shallow)	8-Jun-98	153.21	6.20	147.01
MW-10A (Shallow)	18-Aug-98	153.21	11.35	141.86
MW-10A (Shallow)	5-Nov-98	153.21	14.03	139.18
MW-10A (Shallow)	22-Mar-99	153.21	5.29	147.92
MW-10A (Shallow)	7-Sep-99	153.21	18.22	134.99
MW-10A (Shallow)	9-Dec-99	153.21	NR	---
MW-10A (Shallow)	7-Feb-00	153.21	5.00	148.21
MW-10A (Shallow)	29-May-00	153.21	6.70	146.51
MW-10A (Shallow)	21-Aug-00	153.21	17.19	136.02
MW-10A (Shallow)	6-Nov-00	153.21	19.82	133.39
MW-10A (Shallow)	29-Jan-01	153.21	8.34	144.87
MW-10A (Shallow)	23-Apr-01	153.21	7.26	145.95
MW-10A (Shallow)	27-Aug-01	153.21	13.70	139.51
MW-10A (Shallow)	5-Nov-01	153.21	19.78	133.43
MW-10A (Shallow)	7-Feb-02	153.21	4.62	148.59
MW-10A (Shallow)	8-Apr-02	153.21	5.98	147.23
MW-10A (Shallow)	22-Jul-02	153.21	15.39	137.82
MW-10A (Shallow)	7-Oct-02	153.21	21.01	132.20
MW-10A (Shallow)	24-Feb-03	153.21	5.00	148.21
MW-10A (Shallow)	12-May-03	153.21	6.02	147.19
MW-10A (Shallow)	18-Aug-03	153.21	18.81	134.40
MW-10A (Shallow)	17-Nov-03	153.21	27.01	126.20
MW-10A (Shallow)	19-Apr-04	153.21	5.97	147.24
MW-10A (Shallow)	8-Nov-04	153.21	19.61	133.60
MW-10A (Shallow)	23-May-05	153.21	5.70	147.51

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-10A (Shallow)	24-Oct-05	153.21	20.74	132.47
MW-10A (Shallow)	8-May-06	153.21	7.44	145.77
MW-10A (Shallow)	16-Oct-06	153.21	22.55	130.66
MW-10A (Shallow)	7-May-07	153.21	6.21	147.00
MW-10A (Shallow)	5-Nov-07	153.21	20.39	132.82
MW-10A (Shallow)	19-May-08	153.21	7.15	146.06
MW-10A (Shallow)	10-Nov-08	153.21	19.75	133.46
MW-10A (Shallow)	4-May-09	153.21	5.51	147.70
MW-10A (Shallow)	16-Nov-09	153.21	12.95	140.26
MW-10A (Shallow)	19-Apr-10	153.21	4.81	148.40
MW-10A (Shallow)	4-Oct-10	153.21	19.05	134.16
MW-10A (Shallow)	12-Apr-11	153.21	3.94	149.27
MW-10A (Shallow)	1-Nov-11	153.21	19.07	134.14
MW-10A (Shallow)	30-Apr-12	153.21	4.84	148.37
MW-10A (Shallow)	12-Nov-12	153.21	17.95	135.26
MW-10A (Shallow)	8-Apr-13	153.21	4.65	148.56
MW-10A (Shallow)	18-Nov-13	153.21	17.96	135.25
MW-10A (Shallow)	28-Apr-14	153.21	4.38	148.83
MW-10A (Shallow)	17-Nov-14	153.21	14.95	138.26
MW-10B (Deep)	4-Dec-93	152.87	23.61	129.26
MW-10B (Deep)	5-Jan-94	152.87	18.59	134.28
MW-10B (Deep)	22-Feb-94	152.87	12.53	140.34
MW-10B (Deep)	25-Mar-94	152.87	6.55	146.32
MW-10B (Deep)	26-Apr-94	152.87	17.44	135.43
MW-10B (Deep)	26-May-94	152.87	20.31	132.56
MW-10B (Deep)	1-Jul-94	152.87	21.99	130.88
MW-10B (Deep)	2-Aug-94	152.87	25.65	127.22
MW-10B (Deep)	2-Sep-94	152.87	25.20	127.67
MW-10B (Deep)	13-Oct-94	152.87	25.83	127.04
MW-10B (Deep)	11-Nov-94	152.87	22.60	130.27
MW-10B (Deep)	21-Dec-94	152.87	18.13	134.74
MW-10B (Deep)	20-Jan-95	152.87	17.11	135.76
MW-10B (Deep)	23-Feb-95	152.87	16.71	136.16
MW-10B (Deep)	28-Mar-95	152.87	17.06	135.81
MW-10B (Deep)	14-Apr-95	152.87	17.44	135.43
MW-10B (Deep)	18-May-95	152.87	18.64	134.23
MW-10B (Deep)	20-Jun-95	152.87	19.00	133.87
MW-10B (Deep)	26-Jul-95	152.87	22.52	130.35
MW-10B (Deep)	22-Aug-95	152.87	23.88	128.99
MW-10B (Deep)	11-Sep-95	152.87	23.74	129.13
MW-10B (Deep)	24-Oct-95	152.87	23.23	129.64
MW-10B (Deep)	22-Nov-95	152.87	20.78	132.09
MW-10B (Deep)	20-Dec-95	152.87	16.44	136.43
MW-10B (Deep)	11-Jan-96	152.87	16.25	136.62
MW-10B (Deep)	16-Feb-96	152.87	15.57	137.30
MW-10B (Deep)	30-Mar-96	152.87	17.07	135.80
MW-10B (Deep)	9-Apr-96	152.87	19.30	133.57
MW-10B (Deep)	28-May-96	152.87	17.15	135.72
MW-10B (Deep)	28-Jun-96	152.87	19.86	133.01

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-10B (Deep)	30-Jul-96	152.87	22.85	130.02
MW-10B (Deep)	29-Aug-96	152.87	24.53	128.34
MW-10B (Deep)	30-Sep-96	152.87	22.39	130.48
MW-10B (Deep)	31-Oct-96	152.87	23.31	129.56
MW-10B (Deep)	12-Dec-96	152.87	16.38	136.49
MW-10B (Deep)	22-Jan-97	152.87	16.15	136.72
MW-10B (Deep)	31-Mar-97	152.87	16.17	136.70
MW-10B (Deep)	19-May-97	152.87	19.86	133.01
MW-10B (Deep)	9-Sep-97	152.87	22.91	129.96
MW-10B (Deep)	18-Dec-97	152.87	16.94	135.93
MW-10B (Deep)	17-Mar-98	152.87	15.75	137.12
MW-10B (Deep)	8-Jun-98	152.87	19.47	133.40
MW-10B (Deep)	18-Aug-98	152.87	22.70	130.17
MW-10B (Deep)	5-Nov-98	152.87	22.89	129.98
MW-10B (Deep)	22-Mar-99	152.87	14.86	138.01
MW-10B (Deep)	7-Sep-99	152.87	25.29	127.58
MW-10B (Deep)	9-Dec-99	152.87	19.41	133.46
MW-10B (Deep)	7-Feb-00	152.87	15.87	137.00
MW-10B (Deep)	29-May-00	152.87	19.08	133.79
MW-10B (Deep)	21-Aug-00	152.87	24.45	128.42
MW-10B (Deep)	6-Nov-00	152.87	23.13	129.74
MW-10B (Deep)	29-Jan-01	152.87	18.78	134.09
MW-10B (Deep)	23-Apr-01	152.87	18.50	134.37
MW-10B (Deep)	27-Aug-01	152.87	23.88	128.99
MW-10B (Deep)	5-Nov-01	152.87	25.06	127.81
MW-10B (Deep)	7-Feb-02	152.87	16.15	136.72
MW-10B (Deep)	8-Apr-02	152.87	18.32	134.55
MW-10B (Deep)	22-Jul-02	152.87	26.14	126.73
MW-10B (Deep)	7-Oct-02	152.87	26.75	126.12
MW-10B (Deep)	24-Feb-03	152.87	17.52	135.35
MW-10B (Deep)	12-May-03	152.87	19.45	133.42
MW-10B (Deep)	18-Aug-03	152.87	29.72	123.15
MW-10B (Deep)	17-Nov-03	152.87	22.86	130.01
MW-10B (Deep)	19-Apr-04	152.87	21.34	131.53
MW-10B (Deep)	8-Nov-04	152.87	24.13	128.74
MW-10B (Deep)	23-May-05	152.87	20.86	132.01
MW-10B (Deep)	24-Oct-05	152.87	26.07	126.80
MW-10B (Deep)	8-May-06	152.87	24.46	128.41
MW-10B (Deep)	16-Oct-06	152.87	26.44	126.43
MW-10B (Deep)	7-May-07	152.87	19.64	133.23
MW-10B (Deep)	5-Nov-07	152.87	24.89	127.98
MW-10B (Deep)	19-May-08	152.87	30.87	122.00
MW-10B (Deep)	10-Nov-08	152.87	34.44	118.43
MW-10B (Deep)	4-May-09	152.87	19.43	133.44
MW-10B (Deep)	16-Nov-09	152.87	23.95	128.92
MW-10B (Deep)	19-Apr-10	152.87	20.14	132.73
MW-10B (Deep)	4-Oct-10	152.87	24.70	128.17
MW-10B (Deep)	12-Apr-11	152.87	16.88	135.99
MW-10B (Deep)	1-Nov-11	152.87	25.77	127.10

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-10B (Deep)	30-Apr-12	152.87	17.50	135.37
MW-10B (Deep)	12-Nov-12	152.87	27.25	125.62
MW-10B (Deep)	8-Apr-13	152.87	17.57	135.30
MW-10B (Deep)	18-Nov-13	152.87	21.99	130.88
MW-10B (Deep)	28-Apr-14	152.87	17.71	135.16
MW-10B (Deep)	17-Nov-14	152.87	30.34	122.53
MW-12A (Shallow)	22-Aug-95	126.00	18.72	107.28
MW-12A (Shallow)	11-Sep-95	126.00	18.91	107.09
MW-12A (Shallow)	24-Oct-95	126.00	15.96	110.04
MW-12A (Shallow)	22-Nov-95	126.00	12.07	113.93
MW-12A (Shallow)	20-Dec-95	126.00	9.08	116.92
MW-12A (Shallow)	11-Jan-96	126.00	9.39	116.61
MW-12A (Shallow)	16-Feb-96	126.00	8.66	117.34
MW-12A (Shallow)	30-Mar-96	126.00	13.18	112.82
MW-12A (Shallow)	9-Apr-96	126.00	14.63	111.37
MW-12A (Shallow)	28-May-96	126.00	11.63	114.37
MW-12A (Shallow)	28-Jun-96	126.00	16.36	109.64
MW-12A (Shallow)	30-Jul-96	126.00	17.68	108.32
MW-12A (Shallow)	29-Aug-96	126.00	17.22	108.78
MW-12A (Shallow)	30-Sep-96	126.00	14.24	111.76
MW-12A (Shallow)	31-Oct-96	126.00	14.31	111.69
MW-12A (Shallow)	22-Jan-97	126.00	8.18	117.82
MW-12A (Shallow)	31-Mar-97	126.00	11.41	114.59
MW-12A (Shallow)	19-May-97	126.00	15.85	110.15
MW-12A (Shallow)	9-Sep-97	126.00	15.53	110.47
MW-12A (Shallow)	18-Dec-97	126.00	4.12	121.88
MW-12A (Shallow)	17-Mar-98	126.00	10.70	115.30
MW-12A (Shallow)	8-Jun-98	126.00	14.80	111.20
MW-12A (Shallow)	18-Aug-98	126.00	18.55	107.45
MW-12A (Shallow)	5-Nov-98	126.00	19.49	106.51
MW-12A (Shallow)	22-Mar-99	126.00	8.02	117.98
MW-12A (Shallow)	7-Sep-99	126.00	19.32	106.68
MW-12A (Shallow)	9-Dec-99	126.00	5.85	120.15
MW-12A (Shallow)	7-Feb-00	126.00	7.08	118.92
MW-12A (Shallow)	29-May-00	126.00	15.58	110.42
MW-12A (Shallow)	21-Aug-00	126.00	19.15	106.85
MW-12A (Shallow)	6-Nov-00	126.00	17.81	108.19
MW-12A (Shallow)	29-Jan-01	126.00	14.82	111.18
MW-12A (Shallow)	23-Apr-01	126.00	15.51	110.49
MW-12A (Shallow)	27-Aug-01	126.00	19.58	106.42
MW-12A (Shallow)	5-Nov-01	126.00	19.36	106.64
MW-12A (Shallow)	7-Feb-02	126.00	6.04	119.96
MW-12A (Shallow)	8-Apr-02	126.00	10.69	115.31
MW-12A (Shallow)	22-Jul-02	126.00	18.27	107.73
MW-12A (Shallow)	7-Oct-02	126.00	20.14	105.86
MW-12A (Shallow)	24-Feb-03	126.00	6.15	119.85
MW-12A (Shallow)	12-May-03	126.00	12.41	113.59
MW-12A (Shallow)	18-Aug-03	126.00	18.90	107.10

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-12A (Shallow)	17-Nov-03	126.00	20.21	105.79
MW-12A (Shallow)	19-Apr-04	126.00	13.75	112.25
MW-12A (Shallow)	8-Nov-04	126.00	14.97	111.03
MW-12A (Shallow)	23-May-05	126.00	13.89	112.11
MW-12A (Shallow)	24-Oct-05	126.00	20.21	105.79
MW-12A (Shallow)	8-May-06	126.00	14.95	111.05
MW-12A (Shallow)	16-Oct-06	126.00	20.49	105.51
MW-12A (Shallow)	7-May-07	126.00	14.36	111.64
MW-12A (Shallow)	5-Nov-07	126.00	15.33	110.67
MW-12A (Shallow)	19-May-08	126.00	15.03	110.97
MW-12A (Shallow)	10-Nov-08	126.00	13.15	112.85
MW-12A (Shallow)	4-May-09	126.00	12.18	113.82
MW-12A (Shallow)	16-Nov-09	126.00	10.45	115.55
MW-12A (Shallow)	19-Apr-10	126.00	7.07	118.93
MW-12A (Shallow)	4-Oct-10	126.00	18.53	107.47
MW-12A (Shallow)	12-Apr-11	126.00	6.80	119.20
MW-12A (Shallow)	1-Nov-11	126.00	18.70	107.30
MW-12A (Shallow)	30-Apr-12	126.00	11.02	114.98
MW-12A (Shallow)	12-Nov-12	126.00	10.74	115.26
MW-12A (Shallow)	8-Apr-13	126.00	9.79	116.21
MW-12A (Shallow)	18-Nov-13	126.00	14.71	111.29
MW-12A (Shallow)	28-Apr-14	126.00	7.01	118.99
MW-12A (Shallow)	17-Nov-14	126.00	13.05	112.95
MW-12B (Deep)	22-Aug-95	126.54	22.73	103.81
MW-12B (Deep)	11-Sep-95	126.54	22.96	103.58
MW-12B (Deep)	24-Oct-95	126.54	22.65	103.89
MW-12B (Deep)	22-Nov-95	126.54	17.03	109.51
MW-12B (Deep)	20-Dec-95	126.54	8.36	118.18
MW-12B (Deep)	11-Jan-96	126.54	10.59	115.95
MW-12B (Deep)	16-Feb-96	126.54	10.37	116.17
MW-12B (Deep)	30-Mar-96	126.54	17.06	109.48
MW-12B (Deep)	9-Apr-96	126.54	18.41	108.13
MW-12B (Deep)	28-May-96	126.54	15.55	110.99
MW-12B (Deep)	28-Jun-96	126.54	20.53	106.01
MW-12B (Deep)	30-Jul-96	126.54	22.02	104.52
MW-12B (Deep)	29-Aug-96	126.54	22.68	103.86
MW-12B (Deep)	30-Sep-96	126.54	21.76	104.78
MW-12B (Deep)	31-Oct-96	126.54	21.88	104.66
MW-12B (Deep)	22-Jan-97	126.54	10.25	116.29
MW-12B (Deep)	31-Mar-97	126.54	15.03	111.51
MW-12B (Deep)	19-May-97	126.54	11.69	114.85
MW-12B (Deep)	9-Sep-97	126.54	22.90	103.64
MW-12B (Deep)	18-Dec-97	126.54	6.11	120.43
MW-12B (Deep)	17-Mar-98	126.54	14.35	112.19
MW-12B (Deep)	8-Jun-98	126.54	19.90	106.64
MW-12B (Deep)	18-Aug-98	126.54	22.76	103.78
MW-12B (Deep)	5-Nov-98	126.54	23.41	103.13
MW-12B (Deep)	22-Mar-99	126.54	14.22	112.32
MW-12B (Deep)	7-Sep-99	126.54	23.62	102.92

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-12B (Deep)	9-Dec-99	126.54	9.12	117.42
MW-12B (Deep)	7-Feb-00	126.54	12.24	114.30
MW-12B (Deep)	29-May-00	126.54	20.09	106.45
MW-12B (Deep)	21-Aug-00	126.54	23.40	103.14
MW-12B (Deep)	6-Nov-00	126.54	23.77	102.77
MW-12B (Deep)	29-Jan-01	126.54	21.27	105.27
MW-12B (Deep)	23-Apr-01	126.54	20.46	106.08
MW-12B (Deep)	27-Aug-01	126.54	23.47	103.07
MW-12B (Deep)	5-Nov-01	126.54	23.52	103.02
MW-12B (Deep)	7-Feb-02	126.54	11.73	114.81
MW-12B (Deep)	8-Apr-02	126.54	16.67	109.87
MW-12B (Deep)	22-Jul-02	126.54	22.60	103.94
MW-12B (Deep)	7-Oct-02	126.54	24.09	102.45
MW-12B (Deep)	24-Feb-03	126.54	13.10	113.44
MW-12B (Deep)	12-May-03	126.54	17.73	108.81
MW-12B (Deep)	18-Aug-03	126.54	23.39	103.15
MW-12B (Deep)	17-Nov-03	126.54	23.47	103.07
MW-12B (Deep)	19-Apr-04	126.54	19.13	107.41
MW-12B (Deep)	8-Nov-04	126.54	22.29	104.25
MW-12B (Deep)	23-May-05	126.54	18.49	108.05
MW-12B (Deep)	24-Oct-05	126.54	23.90	102.64
MW-12B (Deep)	8-May-06	126.54	19.90	106.64
MW-12B (Deep)	16-Oct-06	126.54	24.61	101.93
MW-12B (Deep)	7-May-07	126.54	19.82	106.72
MW-12B (Deep)	5-Nov-07	126.54	23.11	103.43
MW-12B (Deep)	19-May-08	126.54	19.78	106.76
MW-12B (Deep)	10-Nov-08	126.54	22.38	104.16
MW-12B (Deep)	4-May-09	126.54	19.07	107.47
MW-12B (Deep)	16-Nov-09	126.54	20.26	106.28
MW-12B (Deep)	19-Apr-10	126.54	14.70	111.84
MW-12B (Deep)	4-Oct-10	126.54	23.55	102.99
MW-12B (Deep)	12-Apr-11	126.54	14.35	112.19
MW-12B (Deep)	1-Nov-11	126.54	23.71	102.83
MW-12B (Deep)	30-Apr-12	126.54	16.88	109.66
MW-12B (Deep)	12-Nov-12	126.54	20.71	105.83
MW-12B (Deep)	8-Apr-13	126.54	16.19	110.35
MW-12B (Deep)	18-Nov-13	126.54	20.95	105.59
MW-12B (Deep)	28-Apr-14	126.54	14.72	111.82
MW-12B (Deep)	17-Nov-14	126.54	21.30	105.24
MW-14A (Shallow)	16-Jun-96	121.87	17.41	104.46
MW-14A (Shallow)	22-Jan-97	121.87	8.23	113.64
MW-14A (Shallow)	31-Mar-97	121.87	12.70	109.17
MW-14A (Shallow)	19-May-97	121.87	16.65	105.22
MW-14A (Shallow)	9-Sep-97	121.87	17.22	104.65
MW-14A (Shallow)	17-Mar-98	121.87	11.05	110.82
MW-14A (Shallow)	8-Jun-98	121.87	16.65	105.22
MW-14A (Shallow)	18-Aug-98	121.87	19.10	102.77
MW-14A (Shallow)	5-Nov-98	121.87	DRY	---

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-14A (Shallow)	22-Mar-99	121.87	12.39	109.48
MW-14A (Shallow)	7-Sep-99	121.87	21.25	100.62
MW-14A (Shallow)	9-Dec-99	121.87	5.72	116.15
MW-14A (Shallow)	7-Feb-00	121.87	9.90	111.97
MW-14A (Shallow)	29-May-00	121.87	16.49	105.38
MW-14A (Shallow)	21-Aug-00	121.87	NR	---
MW-14A (Shallow)	6-Nov-00	121.87	21.10	100.77
MW-14A (Shallow)	29-Jan-01	121.87	17.22	104.65
MW-14A (Shallow)	23-Apr-01	121.87	16.76	105.11
MW-14A (Shallow)	27-Aug-01	121.87	18.31	103.56
MW-14A (Shallow)	5-Nov-01	121.87	19.81	102.06
MW-14A (Shallow)	7-Feb-02	121.87	11.36	110.51
MW-14A (Shallow)	8-Apr-02	121.87	14.86	107.01
MW-14A (Shallow)	22-Jul-02	121.87	19.44	102.43
MW-14A (Shallow)	7-Oct-02	121.87	22.09	99.78
MW-14A (Shallow)	24-Feb-03	121.87	11.54	110.33
MW-14A (Shallow)	12-May-03	121.87	15.40	106.47
MW-14A (Shallow)	18-Aug-03	121.87	20.73	101.14
MW-14A (Shallow)	17-Nov-03	121.87	21.51	100.36
MW-14A (Shallow)	19-Apr-04	121.87	16.68	105.19
MW-14A (Shallow)	8-Nov-04	121.87	20.30	101.57
MW-14A (Shallow)	23-May-05	121.87	16.19	105.68
MW-14A (Shallow)	24-Oct-05	121.87	21.56	100.31
MW-14A (Shallow)	8-May-06	121.87	16.93	104.94
MW-14A (Shallow)	16-Oct-06	121.87	22.59	99.28
MW-14A (Shallow)	7-May-07	121.87	16.92	104.95
MW-14A (Shallow)	5-Nov-07	121.87	21.10	100.77
MW-14A (Shallow)	19-May-08	121.87	16.83	105.04
MW-14A (Shallow)	10-Nov-08	121.87	20.34	101.53
MW-14A (Shallow)	4-May-09	121.87	16.64	105.23
MW-14A (Shallow)	16-Nov-09	121.87	20.11	101.76
MW-14A (Shallow)	19-Apr-10	121.87	13.02	108.85
MW-14A (Shallow)	5-Oct-10	121.87	21.32	100.55
MW-14A (Shallow)	12-Apr-11	121.87	12.45	109.42
MW-14A (Shallow)	1-Nov-11	121.87	21.49	100.38
MW-14A (Shallow)	30-Apr-12	121.87	15.21	106.66
MW-14A (Shallow)	12-Nov-12	121.87	18.65	103.22
MW-14A (Shallow)	8-Apr-13	121.87	15.57	106.30
MW-14A (Shallow)	18-Nov-13	121.87	18.52	103.35
MW-14A (Shallow)	28-Apr-14	121.87	13.31	108.56
MW-14A (Shallow)	17-Nov-14	121.87	19.62	102.25
MW-14B (Deep)	16-Jun-96	123.32	19.17	104.15
MW-14B (Deep)	22-Jan-97	123.32	8.50	114.82
MW-14B (Deep)	31-Mar-97	123.32	14.20	109.12
MW-14B (Deep)	19-May-97	123.32	18.16	105.16
MW-14B (Deep)	9-Sep-97	123.32	21.11	102.21
MW-14B (Deep)	17-Mar-98	123.32	13.52	109.80
MW-14B (Deep)	8-Jun-98	123.32	19.25	104.07
MW-14B (Deep)	18-Aug-98	123.32	20.58	102.74

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-14B (Deep)	5-Nov-98	123.32	21.16	102.16
MW-14B (Deep)	22-Mar-99	123.32	13.80	109.52
MW-14B (Deep)	7-Sep-99	123.32	22.09	101.23
MW-14B (Deep)	9-Dec-99	123.32	6.12	117.20
MW-14B (Deep)	7-Feb-00	123.32	11.04	112.28
MW-14B (Deep)	29-May-00	123.32	18.11	105.21
MW-14B (Deep)	21-Aug-00	123.32	21.67	101.65
MW-14B (Deep)	6-Nov-00	123.32	21.58	101.74
MW-14B (Deep)	29-Jan-01	123.32	18.68	104.64
MW-14B (Deep)	23-Apr-01	123.32	18.41	104.91
MW-14B (Deep)	27-Aug-01	123.32	20.66	102.66
MW-14B (Deep)	5-Nov-01	123.32	20.68	102.64
MW-14B (Deep)	7-Feb-02	123.32	11.35	111.97
MW-14B (Deep)	8-Apr-02	123.32	16.28	107.04
MW-14B (Deep)	22-Jul-02	123.32	20.85	102.47
MW-14B (Deep)	7-Oct-02	123.32	22.62	100.70
MW-14B (Deep)	24-Feb-03	123.32	12.43	110.89
MW-14B (Deep)	12-May-03	123.32	16.76	106.56
MW-14B (Deep)	18-Aug-03	123.32	21.78	101.54
MW-14B (Deep)	17-Nov-03	123.32	21.00	102.32
MW-14B (Deep)	19-Apr-04	123.32	17.99	105.33
MW-14B (Deep)	8-Nov-04	123.32	20.57	102.75
MW-14B (Deep)	23-May-05	123.32	17.00	106.32
MW-14B (Deep)	24-Oct-05	123.32	22.11	101.21
MW-14B (Deep)	8-May-06	123.32	18.44	104.88
MW-14B (Deep)	16-Oct-06	123.32	23.21	100.11
MW-14B (Deep)	7-May-07	123.32	18.49	104.83
MW-14B (Deep)	5-Nov-07	123.32	21.57	101.75
MW-14B (Deep)	19-May-08	123.32	18.39	104.93
MW-14B (Deep)	10-Nov-08	123.32	20.20	103.12
MW-14B (Deep)	4-May-09	123.32	18.04	105.28
MW-14B (Deep)	16-Nov-09	123.32	19.21	104.11
MW-14B (Deep)	19-Apr-10	123.32	14.16	109.16
MW-14B (Deep)	4-Oct-10	123.32	22.06	101.26
MW-14B (Deep)	12-Apr-11	123.32	13.52	109.80
MW-14B (Deep)	1-Nov-11	123.32	22.11	101.21
MW-14B (Deep)	30-Apr-12	123.32	16.22	107.10
MW-14B (Deep)	12-Nov-12	123.32	19.10	104.22
MW-14B (Deep)	8-Apr-13	123.32	14.93	108.39
MW-14B (Deep)	18-Nov-13	123.32	18.95	104.37
MW-14B (Deep)	28-Apr-14	123.32	13.79	109.53
MW-14B (Deep)	17-Nov-14	123.32	19.99	103.33
MW-15A (Shallow)	22-Jan-97	130.07	9.26	120.81
MW-15A (Shallow)	31-Mar-97	130.07	11.39	118.68
MW-15A (Shallow)	19-May-97	130.07	16.35	113.72
MW-15A (Shallow)	9-Sep-97	130.07	20.86	109.21
MW-15A (Shallow)	18-Dec-97	130.07	17.56	112.51
MW-15A (Shallow)	17-Mar-98	130.07	12.10	117.97
MW-15A (Shallow)	8-Jun-98	130.07	17.38	112.69

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-15A (Shallow)	18-Aug-98	130.07	19.86	110.21
MW-15A (Shallow)	5-Nov-98	130.07	21.81	108.26
MW-15A (Shallow)	22-Mar-99	130.07	12.59	117.48
MW-15A (Shallow)	18-Jun-99	130.07	16.75	113.32
MW-15A (Shallow)	7-Sep-99	130.07	20.33	109.74
MW-15A (Shallow)	9-Dec-99	130.07	5.26	124.81
MW-15A (Shallow)	7-Feb-00	130.07	10.65	119.42
MW-15A (Shallow)	29-May-00	130.07	15.95	114.12
MW-15A (Shallow)	21-Aug-00	130.07	21.45	108.62
MW-15A (Shallow)	6-Nov-00	130.07	NR	---
MW-15A (Shallow)	29-Jan-01	130.07	9.95	120.12
MW-15A (Shallow)	23-Apr-01	130.07	9.96	120.11
MW-15A (Shallow)	28-Aug-01	130.07	20.99	109.08
MW-15A (Shallow)	5-Nov-01	130.07	22.82	107.25
MW-15A (Shallow)	7-Feb-02	130.07	3.79	126.28
MW-15A (Shallow)	8-Apr-02	130.07	5.91	124.16
MW-15A (Shallow)	22-Jul-02	130.07	15.29	114.78
MW-15A (Shallow)	7-Oct-02	130.07	NR	---
MW-15A (Shallow)	24-Feb-03	130.07	3.79	126.28
MW-15A (Shallow)	12-May-03	130.07	6.11	123.96
MW-15A (Shallow)	18-Aug-03	130.07	17.58	112.49
MW-15A (Shallow)	17-Nov-03	130.07	22.34	107.73
MW-15A (Shallow)	19-Apr-04	130.07	7.75	122.32
MW-15A (Shallow)	8-Nov-04	130.07	20.97	109.10
MW-15A (Shallow)	23-May-05	130.07	6.35	123.72
MW-15A (Shallow)	24-Oct-05	130.07	20.29	109.78
MW-15A (Shallow)	8-May-06	130.07	8.13	121.94
MW-15A (Shallow)	16-Oct-06	130.07	20.90	109.17
MW-15A (Shallow)	7-May-07	130.07	8.76	121.31
MW-15A (Shallow)	5-Nov-07	130.07	21.22	108.85
MW-15A (Shallow)	19-May-08	130.07	8.87	121.20
MW-15A (Shallow)	10-Nov-08	130.07	21.22	108.85
MW-15A (Shallow)	4-May-09	130.07	8.54	121.53
MW-15A (Shallow)	16-Nov-09	130.07	9.31	120.76
MW-15A (Shallow)	19-Apr-10	130.07	8.13	121.94
MW-15A (Shallow)	4-Oct-10	130.07	19.12	110.95
MW-15A (Shallow)	12-Apr-11	130.07	9.12	120.95
MW-15A (Shallow)	1-Nov-11	130.07	20.91	109.16
MW-15A (Shallow)	30-Apr-12	130.07	9.40	120.67
MW-15A (Shallow)	12-Nov-12	130.07	9.78	120.29
MW-15A (Shallow)	8-Apr-13	130.07	8.28	121.79
MW-15A (Shallow)	18-Nov-13	130.07	9.51	120.56
MW-15A (Shallow)	28-Apr-14	130.07	8.35	121.72
MW-15A (Shallow)	17-Nov-14	130.07	9.25	120.82
MW-15B (Deep)	22-Jan-97	129.73	12.44	117.29
MW-15B (Deep)	31-Mar-97	129.73	15.26	114.47
MW-15B (Deep)	19-May-97	129.73	18.99	110.74
MW-15B (Deep)	9-Sep-97	129.73	22.60	107.13
MW-15B (Deep)	18-Dec-97	129.73	13.19	116.54

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-15B (Deep)	17-Mar-98	129.73	14.80	114.93
MW-15B (Deep)	8-Jun-98	129.73	18.98	110.75
MW-15B (Deep)	18-Aug-98	129.73	21.99	107.74
MW-15B (Deep)	5-Nov-98	129.73	22.84	106.89
MW-15B (Deep)	22-Mar-99	129.73	13.66	116.07
MW-15B (Deep)	18-Jun-99	129.73	19.79	109.94
MW-15B (Deep)	7-Sep-99	129.73	22.69	107.04
MW-15B (Deep)	9-Dec-99	129.73	13.74	115.99
MW-15B (Deep)	7-Feb-00	129.73	13.55	116.18
MW-15B (Deep)	29-May-00	129.73	19.26	110.47
MW-15B (Deep)	21-Aug-00	129.73	22.42	107.31
MW-15B (Deep)	6-Nov-00	129.73	22.84	106.89
MW-15B (Deep)	29-Jan-01	129.73	20.27	109.46
MW-15B (Deep)	23-Apr-01	129.73	19.92	109.81
MW-15B (Deep)	27-Aug-01	129.73	22.50	107.23
MW-15B (Deep)	5-Nov-01	129.73	23.10	106.63
MW-15B (Deep)	7-Feb-02	129.73	12.44	117.29
MW-15B (Deep)	8-Apr-02	129.73	15.19	114.54
MW-15B (Deep)	22-Jul-02	129.73	20.35	109.38
MW-15B (Deep)	7-Oct-02	129.73	22.24	107.49
MW-15B (Deep)	24-Feb-03	129.73	13.42	116.31
MW-15B (Deep)	12-May-03	129.73	16.29	113.44
MW-15B (Deep)	18-Aug-03	129.73	22.15	107.58
MW-15B (Deep)	17-Nov-03	129.73	23.58	106.15
MW-15B (Deep)	19-Apr-04	129.73	17.81	111.92
MW-15B (Deep)	8-Nov-04	129.73	21.73	108.00
MW-15B (Deep)	23-May-05	129.73	17.69	112.04
MW-15B (Deep)	24-Oct-05	129.73	22.58	107.15
MW-15B (Deep)	8-May-06	129.73	18.00	111.73
MW-15B (Deep)	16-Oct-06	129.73	23.47	106.26
MW-15B (Deep)	7-May-07	129.73	18.40	111.33
MW-15B (Deep)	5-Nov-07	129.73	22.45	107.28
MW-15B (Deep)	19-May-08	129.73	18.09	111.64
MW-15B (Deep)	10-Nov-08	129.73	22.90	106.83
MW-15B (Deep)	4-May-09	129.73	17.86	111.87
MW-15B (Deep)	16-Nov-09	129.73	21.11	108.62
MW-15B (Deep)	19-Apr-10	129.73	14.58	115.15
MW-15B (Deep)	4-Oct-10	129.73	22.45	107.28
MW-15B (Deep)	12-Apr-11	129.73	14.35	115.38
MW-15B (Deep)	1-Nov-11	129.73	23.07	106.66
MW-15B (Deep)	30-Apr-12	129.73	15.65	114.08
MW-15B (Deep)	12-Nov-12	129.73	20.86	108.87
MW-15B (Deep)	8-Apr-13	129.73	16.96	112.77
MW-15B (Deep)	18-Nov-13	129.73	20.71	109.02
MW-15B (Deep)	28-Apr-14	129.73	15.30	114.43
MW-15B (Deep)	17-Nov-14	129.73	20.67	109.06
MW-16A (Shallow)	22-Jan-97	128.89	12.15	116.74
MW-16A (Shallow)	31-Mar-97	128.89	13.80	115.09
MW-16A (Shallow)	19-May-97	128.89	16.25	112.64

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-16A (Shallow)	9-Sep-97	128.89	19.42	109.47
MW-16A (Shallow)	18-Dec-97	128.89	14.46	114.43
MW-16A (Shallow)	17-Mar-98	128.89	14.01	114.88
MW-16A (Shallow)	8-Jun-98	128.89	16.30	112.59
MW-16A (Shallow)	18-Aug-98	128.89	19.01	109.88
MW-16A (Shallow)	5-Nov-98	128.89	19.34	109.55
MW-16A (Shallow)	22-Mar-99	128.89	10.35	118.54
MW-16A (Shallow)	17-Jun-99	128.89	16.71	112.18
MW-16A (Shallow)	7-Sep-99	128.89	19.19	109.70
MW-16A (Shallow)	9-Dec-99	128.89	14.05	114.84
MW-16A (Shallow)	7-Feb-00	128.89	13.48	115.41
MW-16A (Shallow)	29-May-00	128.89	16.57	112.32
MW-16A (Shallow)	21-Aug-00	128.89	18.88	110.01
MW-16A (Shallow)	6-Nov-00	128.89	18.95	109.94
MW-16A (Shallow)	29-Jan-01	128.89	17.19	111.70
MW-16A (Shallow)	23-Apr-01	128.89	17.27	111.62
MW-16A (Shallow)	27-Aug-01	128.89	18.76	110.13
MW-16A (Shallow)	5-Nov-01	128.89	19.42	109.47
MW-16A (Shallow)	7-Feb-02	128.89	11.84	117.05
MW-16A (Shallow)	8-Apr-02	128.89	13.45	115.44
MW-16A (Shallow)	22-Jul-02	128.89	16.21	112.68
MW-16A (Shallow)	7-Oct-02	128.89	18.04	110.85
MW-16A (Shallow)	24-Feb-03	128.89	13.37	115.52
MW-16A (Shallow)	12-May-03	128.89	14.70	114.19
MW-16A (Shallow)	18-Aug-03	128.89	19.03	109.86
MW-16A (Shallow)	17-Nov-03	128.89	21.11	107.78
MW-16A (Shallow)	19-Apr-04	128.89	16.00	112.89
MW-16A (Shallow)	8-Nov-04	128.89	19.20	109.69
MW-16A (Shallow)	23-May-05	128.89	16.40	112.49
MW-16A (Shallow)	24-Oct-05	128.89	19.55	109.34
MW-16A (Shallow)	8-May-06	128.89	16.59	112.30
MW-16A (Shallow)	16-Oct-06	128.89	20.81	108.08
MW-16A (Shallow)	7-May-07	128.89	16.55	112.34
MW-16A (Shallow)	5-Nov-07	128.89	19.72	109.17
MW-16A (Shallow)	19-May-08	128.89	16.63	112.26
MW-16A (Shallow)	10-Nov-08	128.89	20.80	108.09
MW-16A (Shallow)	4-May-09	128.89	16.15	112.74
MW-16A (Shallow)	16-Nov-09	128.89	19.70	109.19
MW-16A (Shallow)	19-Apr-10	128.89	14.12	114.77
MW-16A (Shallow)	4-Oct-10	128.89	19.71	109.18
MW-16A (Shallow)	12-Apr-11	128.89	13.71	115.18
MW-16A (Shallow)	1-Nov-11	128.89	20.41	108.48
MW-16A (Shallow)	30-Apr-12	128.89	14.03	114.86
MW-16A (Shallow)	12-Nov-12	128.89	19.40	109.49
MW-16A (Shallow)	8-Apr-13	128.89	15.70	113.19
MW-16A (Shallow)	18-Nov-13	128.89	18.35	110.54
MW-16A (Shallow)	28-Apr-14	128.89	14.55	114.34
MW-16A (Shallow)	17-Nov-14	128.89	19.16	109.73
MW-16B (Deep)	22-Jan-97	128.95	12.60	116.35

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-16B (Deep)	31-Mar-97	128.95	14.56	114.39
MW-16B (Deep)	19-May-97	128.95	16.80	112.15
MW-16B (Deep)	9-Sep-97	128.95	19.89	109.06
MW-16B (Deep)	18-Dec-97	128.95	12.80	116.15
MW-16B (Deep)	17-Mar-98	128.95	14.35	114.60
MW-16B (Deep)	8-Jun-98	128.95	16.80	112.15
MW-16B (Deep)	18-Aug-98	128.95	19.36	109.59
MW-16B (Deep)	5-Nov-98	128.95	19.58	109.37
MW-16B (Deep)	22-Mar-99	128.95	13.17	115.78
MW-16B (Deep)	17-Jun-99	128.95	17.06	111.89
MW-16B (Deep)	7-Sep-99	128.95	19.61	109.34
MW-16B (Deep)	9-Dec-99	128.95	14.13	114.82
MW-16B (Deep)	7-Feb-00	128.95	13.58	115.37
MW-16B (Deep)	29-May-00	128.95	16.91	112.04
MW-16B (Deep)	21-Aug-00	128.95	19.23	109.72
MW-16B (Deep)	6-Nov-00	128.95	19.18	109.77
MW-16B (Deep)	29-Jan-01	128.95	17.22	111.73
MW-16B (Deep)	23-Apr-01	128.95	17.39	111.56
MW-16B (Deep)	27-Aug-01	128.95	19.04	109.91
MW-16B (Deep)	5-Nov-01	128.95	19.54	109.41
MW-16B (Deep)	7-Feb-02	128.95	12.08	116.87
MW-16B (Deep)	8-Apr-02	128.95	13.79	115.16
MW-16B (Deep)	22-Jul-02	128.95	16.48	112.47
MW-16B (Deep)	7-Oct-02	128.95	18.32	110.63
MW-16B (Deep)	24-Feb-03	128.95	13.33	115.62
MW-16B (Deep)	12-May-03	128.95	14.88	114.07
MW-16B (Deep)	18-Aug-03	128.95	19.37	109.58
MW-16B (Deep)	17-Nov-03	128.95	20.89	108.06
MW-16B (Deep)	19-Apr-04	128.95	16.21	112.74
MW-16B (Deep)	8-Nov-04	128.95	19.25	109.70
MW-16B (Deep)	23-May-05	128.95	16.50	112.45
MW-16B (Deep)	24-Oct-05	128.95	19.70	109.25
MW-16B (Deep)	8-May-06	128.95	16.38	112.57
MW-16B (Deep)	16-Oct-06	128.95	20.89	108.06
MW-16B (Deep)	7-May-07	128.95	16.70	112.25
MW-16B (Deep)	5-Nov-07	128.95	19.73	109.22
MW-16B (Deep)	19-May-08	128.95	16.49	112.46
MW-16B (Deep)	10-Nov-08	128.95	20.46	108.49
MW-16B (Deep)	4-May-09	128.95	16.47	112.48
MW-16B (Deep)	16-Nov-09	128.95	19.46	109.49
MW-16B (Deep)	19-Apr-10	128.95	14.40	114.55
MW-16B (Deep)	4-Oct-10	128.95	20.05	108.90
MW-16B (Deep)	12-Apr-11	128.95	14.06	114.89
MW-16B (Deep)	1-Nov-11	128.95	20.62	108.33
MW-16B (Deep)	30-Apr-12	128.95	14.65	114.30
MW-16B (Deep)	12-Nov-12	128.95	19.26	109.69
MW-16B (Deep)	8-Apr-13	128.95	15.86	113.09
MW-16B (Deep)	18-Nov-13	128.95	18.36	110.59
MW-16B (Deep)	28-Apr-14	128.95	14.82	114.13

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-16B (Deep)	17-Nov-14	128.95	19.09	109.86
MW-17A (Shallow)	6-Nov-00	153.83	15.85	137.98
MW-17A (Shallow)	29-Jan-01	153.83	6.01	147.82
MW-17A (Shallow)	23-Apr-01	153.83	10.13	143.70
MW-17A (Shallow)	27-Aug-01	153.83	13.24	140.59
MW-17A (Shallow)	5-Nov-01	153.83	14.09	139.74
MW-17A (Shallow)	7-Feb-02	153.83	5.58	148.25
MW-17A (Shallow)	8-Apr-02	153.83	8.87	144.96
MW-17A (Shallow)	22-Jul-02	153.83	15.26	138.57
MW-17A (Shallow)	7-Oct-02	153.83	21.08	132.75
MW-17A (Shallow)	24-Feb-03	153.83	6.34	147.49
MW-17A (Shallow)	12-May-03	153.83	8.61	145.22
MW-17A (Shallow)	18-Aug-03	153.83	18.38	135.45
MW-17A (Shallow)	17-Nov-03	153.83	19.76	134.07
MW-17A (Shallow)	19-Apr-04	153.83	9.57	144.26
MW-17A (Shallow)	8-Nov-04	153.83	15.23	138.60
MW-17A (Shallow)	23-May-05	153.83	9.79	144.04
MW-17A (Shallow)	24-Oct-05	153.83	17.53	136.30
MW-17A (Shallow)	8-May-06	153.83	10.53	143.30
MW-17A (Shallow)	16-Oct-06	153.83	21.32	132.51
MW-17A (Shallow)	7-May-07	153.83	10.20	143.63
MW-17A (Shallow)	5-Nov-07	153.83	16.02	137.81
MW-17A (Shallow)	19-May-08	153.83	10.39	143.44
MW-17A (Shallow)	10-Nov-08	153.83	17.03	136.80
MW-17A (Shallow)	4-May-09	153.83	8.65	145.18
MW-17A (Shallow)	16-Nov-09	153.83	10.46	143.37
MW-17A (Shallow)	19-Apr-10	153.83	5.85	147.98
MW-17A (Shallow)	4-Oct-10	153.83	15.98	137.85
MW-17A (Shallow)	12-Apr-11	153.83	6.25	147.58
MW-17A (Shallow)	1-Nov-11	153.83	17.95	135.88
MW-17A (Shallow)	30-Apr-12	153.83	7.91	145.92
MW-17A (Shallow)	12-Nov-12	153.83	15.70	138.13
MW-17A (Shallow)	8-Apr-13	153.83	8.05	145.78
MW-17A (Shallow)	18-Nov-13	153.83	14.31	139.52
MW-17A (Shallow)	28-Apr-14	153.83	7.04	146.79
MW-17A (Shallow)	17-Nov-14	153.83	14.52	139.31
MW-18A (Shallow)	6-Nov-00	148.77	17.05	131.72
MW-18A (Shallow)	29-Jan-01	148.77	12.87	135.90
MW-18A (Shallow)	23-Apr-01	148.77	13.59	135.18
MW-18A (Shallow)	27-Aug-01	148.77	18.59	130.18
MW-18A (Shallow)	5-Nov-01	148.77	17.73	131.04
MW-18A (Shallow)	7-Feb-02	148.77	7.01	141.76
MW-18A (Shallow)	8-Apr-02	148.77	12.13	136.64
MW-18A (Shallow)	22-Jul-02	148.77	17.12	131.65
MW-18A (Shallow)	7-Oct-02	148.77	21.25	127.52
MW-18A (Shallow)	24-Feb-03	148.77	8.80	139.97
MW-18A (Shallow)	12-May-03	148.77	12.54	136.23
MW-18A (Shallow)	18-Aug-03	148.77	19.52	129.25

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-18A (Shallow)	17-Nov-03	148.77	17.31	131.46
MW-18A (Shallow)	19-Apr-04	148.77	12.56	136.21
MW-18A (Shallow)	8-Nov-04	148.77	16.15	132.62
MW-18A (Shallow)	23-May-05	148.77	12.93	135.84
MW-18A (Shallow)	24-Oct-05	148.77	19.29	129.48
MW-18A (Shallow)	8-May-06	148.77	13.75	135.02
MW-18A (Shallow)	16-Oct-06	148.77	21.40	127.37
MW-18A (Shallow)	7-May-07	148.77	13.00	135.77
MW-18A (Shallow)	5-Nov-07	148.77	17.58	131.19
MW-18A (Shallow)	19-May-08	148.77	13.86	134.91
MW-18A (Shallow)	10-Nov-08	148.77	17.20	131.57
MW-18A (Shallow)	4-May-09	148.77	12.18	136.59
MW-18A (Shallow)	16-Nov-09	148.77	12.16	136.61
MW-18A (Shallow)	19-Apr-10	148.77	10.27	138.50
MW-18A (Shallow)	4-Oct-10	148.77	18.76	130.01
MW-18A (Shallow)	12-Apr-11	148.77	7.24	141.53
MW-18A (Shallow)	1-Nov-11	148.77	18.95	129.82
MW-18A (Shallow)	30-Apr-12	148.77	11.41	137.36
MW-18A (Shallow)	12-Nov-12	148.77	13.61	135.16
MW-18A (Shallow)	8-Apr-13	148.77	8.31	140.46
MW-18A (Shallow)	18-Nov-13	148.77	15.00	133.77
MW-18A (Shallow)	28-Apr-14	148.77	7.55	141.22
MW-18A (Shallow)	17-Nov-14	148.77	14.62	134.15
MW-18B (Deep)	6-Nov-00	148.57	20.67	127.90
MW-18B (Deep)	29-Jan-01	148.57	16.01	132.56
MW-18B (Deep)	23-Apr-01	148.57	15.91	132.66
MW-18B (Deep)	27-Aug-01	148.57	21.37	127.20
MW-18B (Deep)	5-Nov-01	148.57	22.13	126.44
MW-18B (Deep)	7-Feb-02	148.57	13.15	135.42
MW-18B (Deep)	8-Apr-02	148.57	14.33	134.24
MW-18B (Deep)	22-Jul-02	148.57	24.26	124.31
MW-18B (Deep)	7-Oct-02	148.57	24.75	123.82
MW-18B (Deep)	24-Feb-03	148.57	14.29	134.28
MW-18B (Deep)	12-May-03	148.57	16.19	132.38
MW-18B (Deep)	18-Aug-03	148.57	24.93	123.64
MW-18B (Deep)	17-Nov-03	148.57	23.42	125.15
MW-18B (Deep)	19-Apr-04	148.57	16.86	131.71
MW-18B (Deep)	8-Nov-04	148.57	21.12	127.45
MW-18B (Deep)	23-May-05	148.57	19.10	129.47
MW-18B (Deep)	24-Oct-05	148.57	23.03	125.54
MW-18B (Deep)	8-May-06	148.57	17.99	130.58
MW-18B (Deep)	16-Oct-06	148.57	23.53	125.04
MW-18B (Deep)	7-May-07	148.57	15.95	132.62
MW-18B (Deep)	5-Nov-07	148.57	21.15	127.42
MW-18B (Deep)	19-May-08	148.57	25.31	123.26
MW-18B (Deep)	10-Nov-08	148.57	30.83	117.74
MW-18B (Deep)	4-May-09	148.57	15.83	132.74
MW-18B (Deep)	16-Nov-09	148.57	20.50	128.07
MW-18B (Deep)	19-Apr-10	148.57	14.47	134.10

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-18B (Deep)	4-Oct-10	148.57	21.15	127.42
MW-18B (Deep)	12-Apr-11	148.57	13.30	135.27
MW-18B (Deep)	1-Nov-11	148.57	22.48	126.09
MW-18B (Deep)	30-Apr-12	148.57	13.75	134.82
MW-18B (Deep)	12-Nov-12	148.57	22.20	126.37
MW-18B (Deep)	8-Apr-13	148.57	14.40	134.17
MW-18B (Deep)	18-Nov-13	148.57	18.67	129.90
MW-18B (Deep)	28-Apr-14	148.57	14.27	134.30
MW-18B (Deep)	17-Nov-14	148.57	21.77	126.80
MW-19A (Shallow)	6-Nov-00	151.27	21.04	130.23
MW-19A (Shallow)	29-Jan-01	151.27	9.75	141.52
MW-19A (Shallow)	23-Apr-01	151.27	11.07	140.20
MW-19A (Shallow)	27-Aug-01	151.27	13.81	137.46
MW-19A (Shallow)	5-Nov-01	151.27	19.26	132.01
MW-19A (Shallow)	7-Feb-02	151.27	5.19	146.08
MW-19A (Shallow)	8-Apr-02	151.27	8.15	143.12
MW-19A (Shallow)	22-Jul-02	151.27	17.04	134.23
MW-19A (Shallow)	7-Oct-02	151.27	22.19	129.08
MW-19A (Shallow)	24-Feb-03	151.27	5.35	145.92
MW-19A (Shallow)	12-May-03	151.27	7.86	143.41
MW-19A (Shallow)	18-Aug-03	151.27	20.31	130.96
MW-19A (Shallow)	17-Nov-03	151.27	23.86	127.41
MW-19A (Shallow)	19-Apr-04	151.27	8.62	142.65
MW-19A (Shallow)	8-Nov-04	151.27	16.82	134.45
MW-19A (Shallow)	23-May-05	151.27	7.90	143.37
MW-19A (Shallow)	24-Oct-05	151.27	20.11	131.16
MW-19A (Shallow)	8-May-06	151.27	10.59	140.68
MW-19A (Shallow)	16-Oct-06	151.27	22.75	128.52
MW-19A (Shallow)	7-May-07	151.27	9.34	141.93
MW-19A (Shallow)	5-Nov-07	151.27	19.85	131.42
MW-19A (Shallow)	19-May-08	151.27	10.41	140.86
MW-19A (Shallow)	10-Nov-08	151.27	22.57	128.70
MW-19A (Shallow)	4-May-09	151.27	9.04	142.23
MW-19A (Shallow)	16-Nov-09	151.27	12.71	138.56
MW-19A (Shallow)	19-Apr-10	151.27	5.89	145.38
MW-19A (Shallow)	4-Oct-10	151.27	20.45	130.82
MW-19A (Shallow)	12-Apr-11	151.27	8.80	142.47
MW-19A (Shallow)	1-Nov-11	151.27	21.55	129.72
MW-19A (Shallow)	30-Apr-12	151.27	7.51	143.76
MW-19A (Shallow)	12-Nov-12	151.27	21.78	129.49
MW-19A (Shallow)	8-Apr-13	151.27	7.41	143.86
MW-19A (Shallow)	18-Nov-13	151.27	19.90	131.37
MW-19A (Shallow)	28-Apr-14	151.27	5.46	145.81
MW-19A (Shallow)	17-Nov-14	151.27	22.99	128.28
MW-20A (Shallow)	6-Nov-00	129.92	7.00	122.92
MW-20A (Shallow)	29-Jan-01	129.92	3.85	126.07
MW-20A (Shallow)	23-Apr-01	129.92	3.93	125.99
MW-20A (Shallow)	27-Aug-01	129.92	4.93	124.99

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-20A (Shallow)	5-Nov-01	129.92	6.18	123.74
MW-20A (Shallow)	7-Feb-02	129.92	2.84	127.08
MW-20A (Shallow)	8-Apr-02	129.92	3.31	126.61
MW-20A (Shallow)	22-Jul-02	129.92	6.53	123.39
MW-20A (Shallow)	7-Oct-02	129.92	9.71	120.21
MW-20A (Shallow)	24-Feb-03	129.92	3.54	126.38
MW-20A (Shallow)	12-May-03	129.92	3.66	126.26
MW-20A (Shallow)	18-Aug-03	129.92	8.75	121.17
MW-20A (Shallow)	17-Nov-03	129.92	8.86	121.06
MW-20A (Shallow)	19-Apr-04	129.92	4.38	125.54
MW-20A (Shallow)	8-Nov-04	129.92	6.67	123.25
MW-20A (Shallow)	23-May-05	129.92	4.04	125.88
MW-20A (Shallow)	24-Oct-05	129.92	6.73	123.19
MW-20A (Shallow)	8-May-06	129.92	4.59	125.33
MW-20A (Shallow)	16-Oct-06	129.92	9.14	120.78
MW-20A (Shallow)	7-May-07	129.92	4.49	125.43
MW-20A (Shallow)	5-Nov-07	129.92	5.19	124.73
MW-20A (Shallow)	19-May-08	129.92	4.99	124.93
MW-20A (Shallow)	10-Nov-08	129.92	5.67	124.25
MW-20A (Shallow)	4-May-09	129.92	3.47	126.45
MW-20A (Shallow)	16-Nov-09	129.92	3.88	126.04
MW-20A (Shallow)	19-Apr-10	129.92	3.25	126.67
MW-20A (Shallow)	4-Oct-10	129.92	6.44	123.48
MW-20A (Shallow)	12-Apr-11	129.92	2.67	127.25
MW-20A (Shallow)	1-Nov-11	129.92	6.40	123.52
MW-20A (Shallow)	30-Apr-12	129.92	3.09	126.83
MW-20A (Shallow)	12-Nov-12	129.92	5.85	124.07
MW-20A (Shallow)	8-Apr-13	129.92	3.27	126.65
MW-20A (Shallow)	18-Nov-13	129.92	6.11	123.81
MW-20A (Shallow)	28-Apr-14	129.92	3.11	126.81
MW-20A (Shallow)	17-Nov-14	129.92	5.35	124.57
MW-20B (Deep)	6-Nov-00	129.72	8.80	120.92
MW-20B (Deep)	29-Jan-01	129.72	5.26	124.46
MW-20B (Deep)	23-Apr-01	129.72	5.44	124.28
MW-20B (Deep)	27-Aug-01	129.72	8.93	120.79
MW-20B (Deep)	5-Nov-01	129.72	9.45	120.27
MW-20B (Deep)	7-Feb-02	129.72	1.62	128.10
MW-20B (Deep)	8-Apr-02	129.72	2.96	126.76
MW-20B (Deep)	22-Jul-02	129.72	9.49	120.23
MW-20B (Deep)	7-Oct-02	129.72	11.19	118.53
MW-20B (Deep)	24-Feb-03	129.72	2.78	126.94
MW-20B (Deep)	12-May-03	129.72	4.20	125.52
MW-20B (Deep)	18-Aug-03	129.72	12.08	117.64
MW-20B (Deep)	17-Nov-03	129.72	11.01	118.71
MW-20B (Deep)	19-Apr-04	129.72	5.57	124.15
MW-20B (Deep)	8-Nov-04	129.72	8.59	121.13
MW-20B (Deep)	23-May-05	129.72	4.55	125.17
MW-20B (Deep)	24-Oct-05	129.72	9.60	120.12
MW-20B (Deep)	8-May-06	129.72	6.10	123.62

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-20B (Deep)	16-Oct-06	129.72	10.73	118.99
MW-20B (Deep)	7-May-07	129.72	4.75	124.97
MW-20B (Deep)	5-Nov-07	129.72	8.54	121.18
MW-20B (Deep)	19-May-08	129.72	9.24	120.48
MW-20B (Deep)	10-Nov-08	129.72	13.09	116.63
MW-20B (Deep)	4-May-09	129.72	4.44	125.28
MW-20B (Deep)	16-Nov-09	129.72	20.74	108.98
MW-20B (Deep)	19-Apr-10	129.72	3.07	126.65
MW-20B (Deep)	4-Oct-10	129.72	8.45	121.27
MW-20B (Deep)	12-Apr-11	129.72	1.71	128.01
MW-20B (Deep)	1-Nov-11	129.72	8.99	120.73
MW-20B (Deep)	30-Apr-12	129.72	2.55	127.17
MW-20B (Deep)	12-Nov-12	129.72	9.53	120.19
MW-20B (Deep)	8-Apr-13	129.72	3.22	126.50
MW-20B (Deep)	18-Nov-13	129.72	6.57	123.15
MW-20B (Deep)	28-Apr-14	129.72	2.77	126.95
MW-20B (Deep)	17-Nov-14	129.72	9.44	120.28
MW-21A (Shallow)	6-Nov-00	120.02	12.07	107.95
MW-21A (Shallow)	29-Jan-01	120.02	9.18	110.84
MW-21A (Shallow)	23-Apr-01	120.02	9.03	110.99
MW-21A (Shallow)	27-Aug-01	120.02	10.54	109.48
MW-21A (Shallow)	5-Nov-01	120.02	8.85	111.17
MW-21A (Shallow)	7-Feb-02	120.02	4.06	115.96
MW-21A (Shallow)	8-Apr-02	120.02	8.03	111.99
MW-21A (Shallow)	22-Jul-02	120.02	12.19	107.83
MW-21A (Shallow)	7-Oct-02	120.02	14.45	105.57
MW-21A (Shallow)	24-Feb-03	120.02	4.67	115.35
MW-21A (Shallow)	12-May-03	120.02	8.03	111.99
MW-21A (Shallow)	18-Aug-03	120.02	12.80	107.22
MW-21A (Shallow)	17-Nov-03	120.02	14.60	105.42
MW-21A (Shallow)	19-Apr-04	120.02	9.89	110.13
MW-21A (Shallow)	8-Nov-04	120.02	13.50	106.52
MW-21A (Shallow)	23-May-05	120.02	9.87	110.15
MW-21A (Shallow)	24-Oct-05	120.02	14.21	105.81
MW-21A (Shallow)	8-May-06	120.02	10.12	109.90
MW-21A (Shallow)	16-Oct-06	120.02	14.74	105.28
MW-21A (Shallow)	7-May-07	120.02	10.10	109.92
MW-21A (Shallow)	5-Nov-07	120.02	12.48	107.54
MW-21A (Shallow)	19-May-08	120.02	9.88	110.14
MW-21A (Shallow)	10-Nov-08	120.02	12.07	107.95
MW-21A (Shallow)	4-May-09	120.02	10.04	109.98
MW-21A (Shallow)	16-Nov-09	120.02	11.49	108.53
MW-21A (Shallow)	19-Apr-10	120.02	6.20	113.82
MW-21A (Shallow)	5-Oct-10	120.02	14.16	105.86
MW-21A (Shallow)	12-Apr-11	120.02	5.49	114.53
MW-21A (Shallow)	1-Nov-11	120.02	14.08	105.94
MW-21A (Shallow)	30-Apr-12	120.02	8.69	111.33
MW-21A (Shallow)	12-Nov-12	120.02	11.35	108.67
MW-21A (Shallow)	8-Apr-13	120.02	9.34	110.68

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-21A (Shallow)	18-Nov-13	120.02	10.61	109.41
MW-21A (Shallow)	28-Apr-14	120.02	7.22	112.80
MW-21A (Shallow)	17-Nov-14	120.02	10.78	109.24
MW-21B (Deep)	6-Nov-00	119.53	12.84	106.69
MW-21B (Deep)	29-Jan-01	119.53	9.93	109.60
MW-21B (Deep)	23-Apr-01	119.53	9.65	109.88
MW-21B (Deep)	27-Aug-01	119.53	11.25	108.28
MW-21B (Deep)	5-Nov-01	119.53	10.17	109.36
MW-21B (Deep)	7-Feb-02	119.53	4.86	114.67
MW-21B (Deep)	8-Apr-02	119.53	8.17	111.36
MW-21B (Deep)	22-Jul-02	119.53	12.27	107.26
MW-21B (Deep)	7-Oct-02	119.53	14.70	104.83
MW-21B (Deep)	24-Feb-03	119.53	5.05	114.48
MW-21B (Deep)	12-May-03	119.53	8.69	110.84
MW-21B (Deep)	18-Aug-03	119.53	13.09	106.44
MW-21B (Deep)	17-Nov-03	119.53	13.66	105.87
MW-21B (Deep)	19-Apr-04	119.53	9.89	109.64
MW-21B (Deep)	8-Nov-04	119.53	13.10	106.43
MW-21B (Deep)	23-May-05	119.53	9.90	109.63
MW-21B (Deep)	24-Oct-05	119.53	13.90	105.63
MW-21B (Deep)	8-May-06	119.53	10.12	109.41
MW-21B (Deep)	16-Oct-06	119.53	15.60	103.93
MW-21B (Deep)	7-May-07	119.53	10.17	109.36
MW-21B (Deep)	5-Nov-07	119.53	12.96	106.57
MW-21B (Deep)	19-May-08	119.53	9.96	109.57
MW-21B (Deep)	10-Nov-08	119.53	12.39	107.14
MW-21B (Deep)	4-May-09	119.53	9.93	109.60
MW-21B (Deep)	16-Nov-09	119.53	11.89	107.64
MW-21B (Deep)	19-Apr-10	119.53	6.29	113.24
MW-21B (Deep)	5-Oct-10	119.53	13.83	105.70
MW-21B (Deep)	12-Apr-11	119.53	6.22	113.31
MW-21B (Deep)	1-Nov-11	119.53	13.73	105.80
MW-21B (Deep)	30-Apr-12	119.53	8.47	111.06
MW-21B (Deep)	12-Nov-12	119.53	11.43	108.10
MW-21B (Deep)	8-Apr-13	119.53	9.22	110.31
MW-21B (Deep)	18-Nov-13	119.53	10.71	108.82
MW-21B (Deep)	28-Apr-14	119.53	7.39	112.14
MW-21B (Deep)	17-Nov-14	119.53	11.21	108.32
MW-22A (Shallow)	4-Oct-10	125.38	22.00	103.38
MW-22A (Shallow)	12-Apr-11	125.38	14.02	111.36
MW-22A (Shallow)	1-Nov-11	125.38	NR	---
MW-22A (Shallow)	30-Apr-12	125.38	17.83	107.55
MW-22A (Shallow)	12-Nov-12	125.38	21.58	103.80
MW-22A (Shallow)	8-Apr-13	125.38	18.28	107.10
MW-22A (Shallow)	18-Nov-13	125.38	21.99	103.39
MW-22A (Shallow)	28-Apr-14	125.38	15.87	109.51
MW-22A (Shallow)	17-Nov-14	125.38	22.09	103.29
MW-22B (Deep)	4-Oct-10	125.43	23.58	101.85

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-22B (Deep)	12-Apr-11	125.43	14.50	110.93
MW-22B (Deep)	1-Nov-11	125.43	23.82	101.61
MW-22B (Deep)	30-Apr-12	125.43	18.44	106.99
MW-22B (Deep)	12-Nov-12	125.43	21.91	103.52
MW-22B (Deep)	8-Apr-13	125.43	17.01	108.42
MW-22B (Deep)	18-Nov-13	125.43	21.75	103.68
MW-22B (Deep)	28-Apr-14	125.43	15.72	109.71
MW-22B (Deep)	17-Nov-14	125.43	22.45	102.98
MW-23A (Shallow)	4-Oct-10	131.79	20.40	111.39
MW-23A (Shallow)	12-Apr-11	131.79	15.85	115.94
MW-23A (Shallow)	1-Nov-11	131.79	21.41	110.38
MW-23A (Shallow)	30-Apr-12	131.79	16.95	114.84
MW-23A (Shallow)	12-Nov-12	131.79	18.23	113.56
MW-23A (Shallow)	8-Apr-13	131.79	15.43	116.36
MW-23A (Shallow)	18-Nov-13	131.79	18.75	113.04
MW-23A (Shallow)	28-Apr-14	131.79	13.45	118.34
MW-23A (Shallow)	17-Nov-14	131.79	18.65	113.14
MW-23B (Deep)	4-Oct-10	131.60	32.65	98.95
MW-23B (Deep)	12-Apr-11	131.60	22.83	108.77
MW-23B (Deep)	1-Nov-11	131.60	33.66	97.94
MW-23B (Deep)	30-Apr-12	131.60	26.12	105.48
MW-23B (Deep)	12-Nov-12	131.60	28.29	103.31
MW-23B (Deep)	8-Apr-13	131.60	24.00	107.60
MW-23B (Deep)	18-Nov-13	131.60	28.11	103.49
MW-23B (Deep)	28-Apr-14	131.60	23.59	108.01
MW-23B (Deep)	17-Nov-14	131.60	29.86	101.74
MW-24A (Shallow)	4-Oct-10	149.93	19.65	130.28
MW-24A (Shallow)	12-Apr-11	149.93	8.46	141.47
MW-24A (Shallow)	1-Nov-11	149.93	16.71	133.22
MW-24A (Shallow)	30-Apr-12	149.93	10.93	139.00
MW-24A (Shallow)	12-Nov-12	149.93	15.75	134.18
MW-24A (Shallow)	8-Apr-13	149.93	11.10	138.83
MW-24A (Shallow)	18-Nov-13	149.93	15.57	134.36
MW-24A (Shallow)	28-Apr-14	149.93	8.55	141.38
MW-24A (Shallow)	17-Nov-14	149.93	22.99	126.94
P-01	11-Feb-93	125.93	8.45	117.48
P-01	14-Apr-93	125.93	9.06	116.87
P-01	12-May-93	125.93	10.64	115.29
P-01	12-Jul-93	125.93	15.08	110.85
P-01	10-Aug-93	125.93	14.25	111.68
P-01	14-Sep-93	125.93	15.25	110.68
P-01	12-Oct-93	125.93	16.00	109.93
P-01	5-Jan-94	125.93	6.30	119.63
P-01	22-Feb-94	125.93	9.39	116.54
P-01	25-Mar-94	125.93	9.45	116.48
P-01	26-Apr-94	125.93	12.24	113.69
P-01	26-May-94	125.93	14.17	111.76

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-01	1-Jul-94	125.93	15.40	110.53
P-01	2-Aug-94	125.93	18.22	107.71
P-01	2-Sep-94	125.93	16.51	109.42
P-01	13-Oct-94	125.93	16.78	109.15
P-01	21-Dec-94	125.93	2.35	123.58
P-01	20-Jan-95	125.93	4.50	121.43
P-01	28-Mar-95	125.93	9.20	116.73
P-01	18-May-95	125.93	13.07	112.86
P-01	20-Jun-95	125.93	14.51	111.42
P-01	26-Jul-95	125.93	15.73	110.20
P-01	11-Sep-95	125.93	16.45	109.48
P-01	24-Oct-95	125.93	14.88	111.05
P-01	22-Nov-95	125.93	10.78	115.15
P-01	20-Dec-95	125.93	5.28	120.65
P-01	11-Jan-96	125.93	6.95	118.98
P-01	16-Feb-96	125.93	6.38	119.55
P-01	30-Mar-96	125.93	11.28	114.65
P-01	9-Apr-96	125.93	12.19	113.74
P-01	28-May-96	125.93	10.66	115.27
P-01	28-Jun-96	125.93	13.57	112.36
P-01	30-Jul-96	125.93	15.02	110.91
P-01	29-Aug-96	125.93	15.72	110.21
P-01	30-Sep-96	125.93	13.99	111.94
P-01	31-Oct-96	125.93	14.56	111.37
P-01	22-Jan-97	125.93	5.97	119.96
P-01	31-Mar-97	125.93	9.80	116.13
P-01	19-May-97	125.93	12.80	113.13
P-01	9-Sep-97	125.93	14.63	111.30
P-01	18-Dec-97	125.93	3.63	122.30
P-01	17-Mar-98	125.93	8.38	117.55
P-01	8-Jun-98	125.93	12.10	113.83
P-01	18-Aug-98	125.93	15.26	110.67
P-01	5-Nov-98	125.93	14.99	110.94
P-01	22-Mar-99	125.93	6.43	119.50
P-01	7-Sep-99	125.93	15.91	110.02
P-01	9-Dec-99	125.93	3.51	122.42
P-01	7-Feb-00	125.93	5.17	120.76
P-01	29-May-00	125.93	12.29	113.64
P-01	21-Aug-00	125.93	15.59	110.34
P-01	6-Nov-00	125.93	13.01	112.92
P-01	29-Jan-01	125.93	10.55	115.38
P-01	23-Apr-01	125.93	11.86	114.07
P-01	27-Aug-01	125.93	15.49	110.44
P-01	5-Nov-01	125.93	16.12	109.81
P-01	7-Feb-02	125.93	4.00	121.93
P-01	8-Apr-02	125.93	8.00	117.93
P-01	22-Jul-02	125.93	14.75	111.18
P-01	7-Oct-02	125.93	15.76	110.17
P-01	24-Feb-03	125.93	4.09	121.84

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-01	12-May-03	125.93	9.76	116.17
P-01	18-Aug-03	125.93	15.10	110.83
P-01	17-Nov-03	125.93	15.51	110.42
P-01	19-Apr-04	125.93	11.00	114.93
P-01	8-Nov-04	125.93	10.78	115.15
P-01	23-May-05	125.93	10.97	114.96
P-01	24-Oct-05	125.93	15.59	110.34
P-01	8-May-06	125.93	11.90	114.03
P-01	16-Oct-06	125.93	15.25	110.68
P-01	7-May-07	125.93	9.62	116.31
P-01	5-Nov-07	125.93	12.18	113.75
P-01	19-May-08	125.93	12.48	113.45
P-01	10-Nov-08	125.93	5.40	120.53
P-01	4-May-09	125.93	5.37	120.56
P-01	16-Nov-09	125.93	4.68	121.25
P-01	19-Apr-10	125.93	4.60	121.33
P-01	5-Oct-10	125.93	11.01	114.92
P-01	12-Apr-11	125.93	3.87	122.06
P-01	1-Nov-11	125.93	6.01	119.92
P-01	30-Apr-12	125.93	4.67	121.26
P-01	12-Nov-12	125.93	5.27	120.66
P-01	8-Apr-13	125.93	4.42	121.51
P-01	18-Nov-13	125.93	4.30	121.63
P-01	28-Apr-14	125.93	3.60	122.33
P-01	17-Nov-14	125.93	5.02	120.91
P-02	11-Feb-93	123.88	9.19	114.69
P-02	14-Apr-93	123.88	7.26	116.62
P-02	12-May-93	123.88	8.83	115.05
P-02	12-Jul-93	123.88	12.11	111.77
P-02	10-Aug-93	123.88	12.36	111.52
P-02	14-Sep-93	123.88	13.49	110.39
P-02	12-Oct-93	123.88	14.58	109.30
P-02	4-Dec-93	123.88	9.47	114.41
P-02	5-Jan-94	123.88	4.17	119.71
P-02	22-Feb-94	123.88	6.63	117.25
P-02	25-Mar-94	123.88	7.17	116.71
P-02	26-Apr-94	123.88	11.02	112.86
P-02	26-May-94	123.88	13.26	110.62
P-02	1-Jul-94	123.88	14.47	109.41
P-02	2-Aug-94	123.88	15.03	108.85
P-02	2-Sep-94	123.88	15.33	108.55
P-02	13-Oct-94	123.88	15.65	108.23
P-02	11-Nov-94	123.88	7.26	116.62
P-02	20-Jan-95	123.88	2.88	121.00
P-02	23-Feb-95	123.88	3.35	120.53
P-02	28-Mar-95	123.88	7.26	116.62
P-02	14-Apr-95	123.88	9.13	114.75
P-02	18-May-95	123.88	11.48	112.40
P-02	20-Jun-95	123.88	13.92	109.96

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-02	26-Jul-95	123.88	14.15	109.73
P-02	22-Aug-95	123.88	14.75	109.13
P-02	11-Sep-95	123.88	15.00	108.88
P-02	24-Oct-95	123.88	13.00	110.88
P-02	22-Nov-95	123.88	8.76	115.12
P-02	20-Dec-95	123.88	3.00	120.88
P-02	11-Jan-96	123.88	4.79	119.09
P-02	16-Feb-96	123.88	4.87	119.01
P-02	30-Mar-96	123.88	8.43	115.45
P-02	9-Apr-96	123.88	10.43	113.45
P-02	28-May-96	123.88	8.50	115.38
P-02	28-Jun-96	123.88	11.91	111.97
P-02	30-Jul-96	123.88	13.46	110.42
P-02	29-Aug-96	123.88	14.00	109.88
P-02	30-Sep-96	123.88	12.33	111.55
P-02	31-Oct-96	123.88	12.77	111.11
P-02	22-Jan-97	123.88	4.10	119.78
P-02	31-Mar-97	123.88	7.87	116.01
P-02	19-May-97	123.88	10.90	112.98
P-02	9-Sep-97	123.88	12.52	111.36
P-02	17-Mar-98	123.88	6.45	117.43
P-02	8-Jun-98	123.88	10.53	113.35
P-02	18-Aug-98	123.88	13.96	109.92
P-02	5-Nov-98	123.88	13.22	110.66
P-02	22-Mar-99	123.88	6.44	117.44
P-02	7-Sep-99	123.88	14.59	109.29
P-02	9-Dec-99	123.88	1.73	122.15
P-02	7-Feb-00	123.88	3.15	120.73
P-02	29-May-00	123.88	10.58	113.30
P-02	21-Aug-00	123.88	13.99	109.89
P-02	6-Nov-00	123.88	11.50	112.38
P-02	29-Jan-01	123.88	9.29	114.59
P-02	23-Apr-01	123.88	10.04	113.84
P-02	27-Aug-01	123.88	13.73	110.15
P-02	5-Nov-01	123.88	14.41	109.47
P-02	7-Feb-02	123.88	1.81	122.07
P-02	8-Apr-02	123.88	6.05	117.83
P-02	22-Jul-02	123.88	13.10	110.78
P-02	7-Oct-02	123.88	14.22	109.66
P-02	24-Feb-03	123.88	2.00	121.88
P-02	12-May-03	123.88	7.87	116.01
P-02	18-Aug-03	123.88	13.70	110.18
P-02	17-Nov-03	123.88	14.10	109.78
P-02	19-Apr-04	123.88	9.40	114.48
P-02	8-Nov-04	123.88	9.45	114.43
P-02	23-May-05	123.88	9.50	114.38
P-02	24-Oct-05	123.88	14.16	109.72
P-02	8-May-06	123.88	10.55	113.33
P-02	16-Oct-06	123.88	13.90	109.98

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-02	7-May-07	123.88	7.96	115.92
P-02	5-Nov-07	123.88	10.55	113.33
P-02	19-May-08	123.88	10.49	113.39
P-02	10-Nov-08	123.88	3.53	120.35
P-02	4-May-09	123.88	NR	---
P-02	16-Nov-09	123.88	2.92	120.96
P-02	19-Apr-10	123.88	2.45	121.43
P-02	5-Oct-10	123.88	11.02	112.86
P-02	12-Apr-11	123.88	2.50	121.38
P-02	1-Nov-11	123.88	6.61	117.27
P-02	30-Apr-12	123.88	4.29	119.59
P-02	12-Nov-12	123.88	3.59	120.29
P-02	8-Apr-13	123.88	3.10	120.78
P-02	18-Nov-13	123.88	4.31	119.57
P-02	28-Apr-14	123.88	2.25	121.63
P-02	17-Nov-14	123.88	5.35	118.53
P-03	12-Jul-93	123.63	11.25	112.38
P-03	10-Aug-93	123.63	12.19	111.44
P-03	14-Sep-93	123.63	12.19	111.44
P-03	12-Oct-93	123.63	15.06	108.57
P-03	4-Dec-93	123.63	10.59	113.04
P-03	5-Jan-94	123.63	3.97	119.66
P-03	25-Mar-94	123.63	7.33	116.30
P-03	26-Apr-94	123.63	12.18	111.45
P-03	26-May-94	123.63	14.58	109.05
P-03	1-Jul-94	123.63	15.80	107.83
P-03	2-Aug-94	123.63	16.33	107.30
P-03	2-Sep-94	123.63	16.67	106.96
P-03	13-Oct-94	123.63	17.05	106.58
P-03	11-Nov-94	123.63	17.55	106.08
P-03	20-Jan-95	123.63	4.75	118.88
P-03	23-Feb-95	123.63	6.62	117.01
P-03	28-Mar-95	123.63	7.35	116.28
P-03	14-Apr-95	123.63	8.19	115.44
P-03	18-May-95	123.63	12.56	111.07
P-03	20-Jun-95	123.63	3.91	119.72
P-03	26-Jul-95	123.63	15.10	108.53
P-03	22-Aug-95	123.63	15.56	108.07
P-03	11-Sep-95	123.63	15.76	107.87
P-03	24-Oct-95	123.63	12.78	110.85
P-03	22-Nov-95	123.63	8.74	114.89
P-03	20-Dec-95	123.63	6.38	117.25
P-03	11-Jan-96	123.63	6.48	117.15
P-03	16-Feb-96	123.63	5.59	118.04
P-03	30-Mar-96	123.63	10.29	113.34
P-03	9-Apr-96	123.63	11.67	111.96
P-03	28-May-96	123.63	8.53	115.10
P-03	28-Jun-96	123.63	13.48	110.15
P-03	30-Jul-96	123.63	14.77	108.86

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-03	29-Aug-96	123.63	14.14	109.49
P-03	30-Sep-96	123.63	13.81	109.82
P-03	31-Oct-96	123.63	12.61	111.02
P-03	22-Jan-97	123.63	5.01	118.62
P-03	31-Mar-97	123.63	8.21	115.42
P-03	19-May-97	123.63	12.89	110.74
P-03	9-Sep-97	123.63	12.48	111.15
P-03	17-Mar-98	123.63	7.53	116.10
P-03	8-Jun-98	123.63	11.78	111.85
P-03	18-Aug-98	123.63	13.98	109.65
P-03	5-Nov-98	123.63	15.84	107.79
P-03	22-Mar-99	123.63	4.56	119.07
P-03	7-Sep-99	123.63	15.31	108.32
P-03	9-Dec-99	123.63	2.23	121.40
P-03	7-Feb-00	123.63	3.57	120.06
P-03	29-May-00	123.63	12.71	110.92
P-03	21-Aug-00	123.63	16.20	107.43
P-03	6-Nov-00	123.63	14.86	108.77
P-03	29-Jan-01	123.63	11.88	111.75
P-03	23-Apr-01	123.63	12.66	110.97
P-03	27-Aug-01	123.63	16.66	106.97
P-03	5-Nov-01	123.63	15.93	107.70
P-03	7-Feb-02	123.63	2.49	121.14
P-03	8-Apr-02	123.63	7.59	116.04
P-03	22-Jul-02	123.63	15.52	108.11
P-03	7-Oct-02	123.63	17.07	106.56
P-03	24-Feb-03	123.63	2.70	120.93
P-03	12-May-03	123.63	9.46	114.17
P-03	18-Aug-03	123.63	16.13	107.50
P-03	17-Nov-03	123.63	16.42	107.21
P-03	19-Apr-04	123.63	10.87	112.76
P-03	8-Nov-04	123.63	12.17	111.46
P-03	23-May-05	123.63	11.03	112.60
P-03	24-Oct-05	123.63	17.26	106.37
P-03	8-May-06	123.63	11.81	111.82
P-03	16-Oct-06	123.63	17.40	106.23
P-03	7-May-07	123.63	11.58	112.05
P-03	5-Nov-07	123.63	12.70	110.93
P-03	19-May-08	123.63	12.35	111.28
P-03	10-Nov-08	123.63	10.32	113.31
P-03	4-May-09	123.63	9.67	113.96
P-03	16-Nov-09	123.63	4.08	119.55
P-03	19-Apr-10	123.63	3.72	119.91
P-03	5-Oct-10	123.63	10.96	112.67
P-03	12-Apr-11	123.63	2.57	121.06
P-03	1-Nov-11	123.63	15.90	107.73
P-03	30-Apr-12	123.63	8.12	115.51
P-03	12-Nov-12	123.63	7.65	115.98
P-03	8-Apr-13	123.63	6.62	117.01

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-03	18-Nov-13	123.63	12.09	111.54
P-03	28-Apr-14	123.63	3.55	120.08
P-03	17-Nov-14	123.63	10.38	113.25
PW-1	31-Mar-97	151.71	24.57	127.14
PW-1	19-May-97	151.71	40.70	111.01
PW-1	18-Dec-97	151.71	18.61	133.10
PW-1	17-Mar-98	151.71	32.90	118.81
PW-1	8-Jun-98	151.71	39.40	112.31
PW-1	18-Aug-98	151.71	41.28	110.43
PW-1	5-Nov-98	151.71	24.87	126.84
PW-1	22-Mar-99	151.71	19.21	132.50
PW-1	7-Sep-99	151.71	38.73	112.98
PW-1	9-Dec-99	151.71	23.21	128.50
PW-1	7-Feb-00	151.71	17.46	134.25
PW-1	29-May-00	151.71	38.31	113.40
PW-1	21-Aug-00	151.71	41.65	110.06
PW-1	6-Nov-00	151.71	24.34	127.37
PW-1	29-Jan-01	151.71	21.45	130.26
PW-1	23-Apr-01	151.71	21.15	130.56
PW-1	27-Aug-01	151.71	29.05	122.66
PW-1	5-Nov-01	151.71	26.22	125.49
PW-1	7-Feb-02	151.71	21.65	130.06
PW-1	8-Apr-02	151.71	24.25	127.46
PW-1	22-Jul-02	151.71	28.89	122.82
PW-1	7-Oct-02	151.71	27.20	124.51
PW-1	24-Feb-03	151.71	31.69	120.02
PW-1	12-May-03	151.71	36.67	115.04
PW-1	18-Aug-03	151.71	50.15	101.56
PW-1	17-Nov-03	151.71	36.41	115.30
PW-1	19-Apr-04	151.71	32.95	118.76
PW-1	8-Nov-04	151.71	26.35	125.36
PW-1	23-May-05	151.71	NR	---
PW-1	24-Oct-05	151.71	NR	---
PW-1	8-May-06	151.71	30.67	121.04
PW-1	16-Oct-06	151.71	28.90	122.81
PW-1	7-May-07	151.71	30.87	120.84
PW-1	5-Nov-07	151.71	27.34	124.37
PW-1	19-May-08	151.71	64.58	87.13
PW-1	10-Nov-08	151.71	40.40	111.31
PW-1	4-May-09	151.71	23.09	128.62
PW-1	16-Nov-09	151.71	24.93	126.78
PW-1	19-Apr-10	151.71	41.51	110.20
PW-1	4-Oct-10	151.71	43.70	108.01
PW-1	12-Apr-11	151.71	31.31	120.40
PW-1	1-Nov-11	151.71	26.55	125.16
PW-1	30-Apr-12	151.71	21.38	130.33
PW-1	12-Nov-12	151.71	41.80	109.91

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
PW-1	8-Apr-13	151.71	20.80	130.91
PW-1	18-Nov-13	151.71	22.47	129.24
PW-1	28-Apr-14	151.71	20.20	131.51
PW-1	17-Nov-14	151.71	35.81	115.90
P-05A	8-May-06	140.70	7.83	132.87
P-05A	16-Oct-06	140.70	16.20	124.50
P-05A	7-May-07	140.70	6.61	134.09
P-05A	5-Nov-07	140.70	12.01	128.69
P-05A	19-May-08	140.70	7.57	133.13
P-05A	10-Nov-08	140.70	8.04	132.66
P-05A	4-May-09	140.70	5.29	135.41
P-05A	16-Nov-09	140.70	4.41	136.29
P-05A	19-Apr-10	140.70	4.27	136.43
P-05A	4-Oct-10	140.70	14.29	126.41
P-05A	12-Apr-11	140.70	3.61	137.09
P-05A	1-Nov-11	140.70	13.91	126.79
P-05A	30-Apr-12	140.70	4.20	136.50
P-05A	12-Nov-12	140.70	15.54	125.16
P-05A	8-Apr-13	140.74	3.67	137.07
P-05A	18-Nov-13	140.74	18.11	122.63
P-05A	28-Apr-14	140.74	3.49	137.25
P-05A	17-Nov-14	140.74	15.28	125.46
P-06A	8-May-06	131.60	5.83	125.77
P-06A	16-Oct-06	131.60	11.12	120.48
P-06A	7-May-07	131.60	5.59	126.01
P-06A	5-Nov-07	131.60	7.86	123.74
P-06A	19-May-08	131.60	6.13	125.47
P-06A	10-Nov-08	131.60	9.56	122.04
P-06A	4-May-09	131.60	4.51	127.09
P-06A	16-Nov-09	131.60	8.91	122.69
P-06A	19-Apr-10	131.60	4.08	127.52
P-06A	4-Oct-10	131.60	8.62	122.98
P-06A	12-Apr-11	131.60	3.61	127.99
P-06A	1-Nov-11	131.60	9.52	122.08
P-06A	30-Apr-12	131.60	4.15	127.45
P-06A	12-Nov-12	131.60	8.03	123.57
P-06A	8-Apr-13	131.58	4.09	127.49
P-06A	18-Nov-13	131.58	5.95	125.63
P-06A	28-Apr-14	131.58	3.85	127.73
P-06A	17-Nov-14	131.58	5.87	125.71
P-07A	30-Apr-12	148.32	12.95	135.37
P-07A	12-Nov-12	148.32	18.59	129.73
P-07A	8-Apr-13	147.90	11.77	136.13
P-07A	18-Nov-13	147.90	20.47	127.43
P-07A	28-Apr-14	147.90	9.54	138.36
P-07A	17-Nov-14	147.90	17.94	129.96

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
GT10-1	4-Oct-10	145.56	15.46	130.10
GT10-1	12-Apr-11	145.56	1.55	144.01
GT10-1	1-Nov-11	145.56	15.85	129.71
GT10-1	30-Apr-12	145.56	2.02	143.54
GT10-1	12-Nov-12	145.56	18.45	127.11
GT10-1	8-Apr-13	145.56	1.76	143.80
GT10-1	18-Nov-13	145.56	17.32	128.24
GT10-1	28-Apr-14	145.56	1.40	144.16
GT10-1	17-Nov-14	145.56	14.51	131.05
GT10-11	4-Oct-10	150.08	17.82	132.26
GT10-11	12-Apr-11	150.08	3.64	146.44
GT10-11	1-Nov-11	150.08	18.67	131.41
GT10-11	30-Apr-12	150.08	4.43	145.65
GT10-11	12-Nov-12	150.08	17.92	132.16
GT10-11	8-Apr-13	150.08	4.38	145.70
GT10-11	18-Nov-13	150.08	14.40	135.68
GT10-11	28-Apr-14	150.08	3.32	146.76
GT10-11	17-Nov-14	150.08	18.00	132.08
GT10-12	4-Oct-10	152.41	17.85	134.56
GT10-12	12-Apr-11	152.41	3.39	149.02
GT10-12	1-Nov-11	152.41	19.12	133.29
GT10-12	30-Apr-12	152.41	3.87	148.54
GT10-12	12-Nov-12	152.41	19.36	133.05
GT10-12	8-Apr-13	152.41	4.18	148.23
GT10-12	18-Nov-13	152.41	14.92	137.49
GT10-12	28-Apr-14	152.41	3.36	149.05
GT10-12	17-Nov-14	152.41	16.76	135.65
SA-BH-1	4-Oct-10	155.21	16.96	138.25
SA-BH-1	12-Apr-11	155.21	7.36	147.85
SA-BH-1	1-Nov-11	155.21	18.58	136.63
SA-BH-1	30-Apr-12	155.21	7.83	147.38
SA-BH-1	12-Nov-12	155.21	NR	---
SA-BH-1	8-Apr-13	155.21	7.61	147.60
SA-BH-1	18-Nov-13	155.21	22.82	132.39
SA-BH-1	28-Apr-14	155.21	7.24	147.97
SA-BH-1	17-Nov-14	155.21	13.91	141.30
SA-BH-3	4-Oct-10	155.07	15.99	139.08
SA-BH-3	12-Apr-11	155.07	4.68	150.39
SA-BH-3	1-Nov-11	155.07	17.45	137.62
SA-BH-3	30-Apr-12	155.07	5.85	149.22
SA-BH-3	12-Nov-12	155.07	20.34	134.73
SA-BH-3	8-Apr-13	155.07	7.54	147.53
SA-BH-3	18-Nov-13	155.07	20.04	135.03
SA-BH-3	28-Apr-14	155.07	5.65	149.42
SA-BH-3	17-Nov-14	155.07	14.71	140.36
SA-BH-5	4-Oct-10	151.01	22.92	128.09

Table B-1
Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
SA-BH-5	12-Apr-11	151.01	13.00	138.01
SA-BH-5	1-Nov-11	151.01	18.26	132.75
SA-BH-5	30-Apr-12	151.01	15.19	135.82
SA-BH-5	12-Nov-12	151.01	20.29	130.72
SA-BH-5	8-Apr-13	151.01	15.70	135.31
SA-BH-5	18-Nov-13	151.01	18.29	132.72
SA-BH-5	28-Apr-14	151.01	13.60	137.41
SA-BH-5	17-Nov-14	151.01	25.52	125.49
SA-BH-6	4-Oct-10	125.93	16.15	109.78
SA-BH-6	12-Apr-11	125.93	11.51	114.42
SA-BH-6	1-Nov-11	125.93	15.75	110.18
SA-BH-6	30-Apr-12	125.93	12.60	113.33
SA-BH-6	12-Nov-12	125.93	13.69	112.24
SA-BH-6	8-Apr-13	125.93	12.73	113.20
SA-BH-6	18-Nov-13	125.93	14.34	111.59
SA-BH-6	28-Apr-14	125.93	11.34	114.59
SA-BH-6	17-Nov-14	125.93	14.02	111.91

NOTE:

NR = no reading; --- = null value.

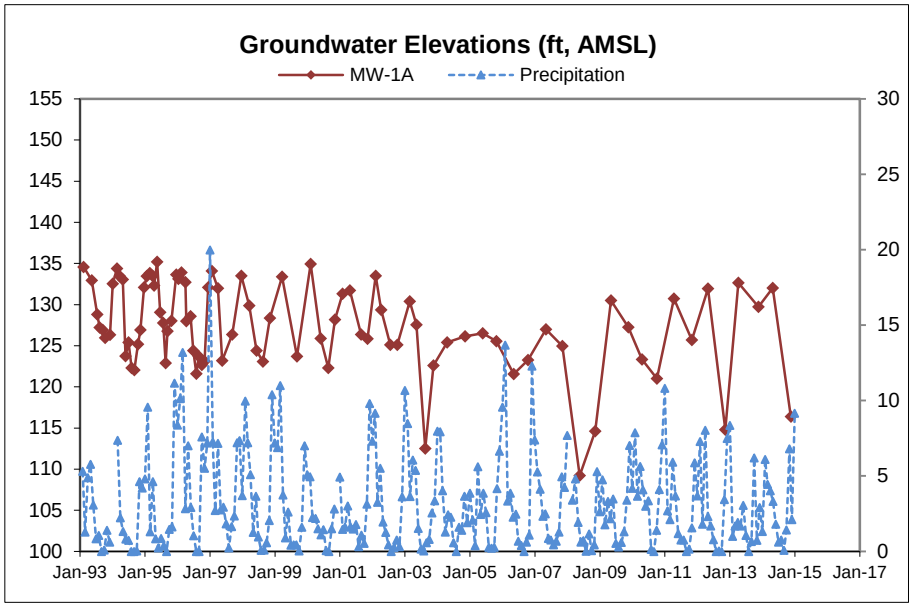
[a] All monitoring wells and piezometers were resurveyed in July 2013. All reference elevations remained the same except for P-05A, P-06A, and P-07A.

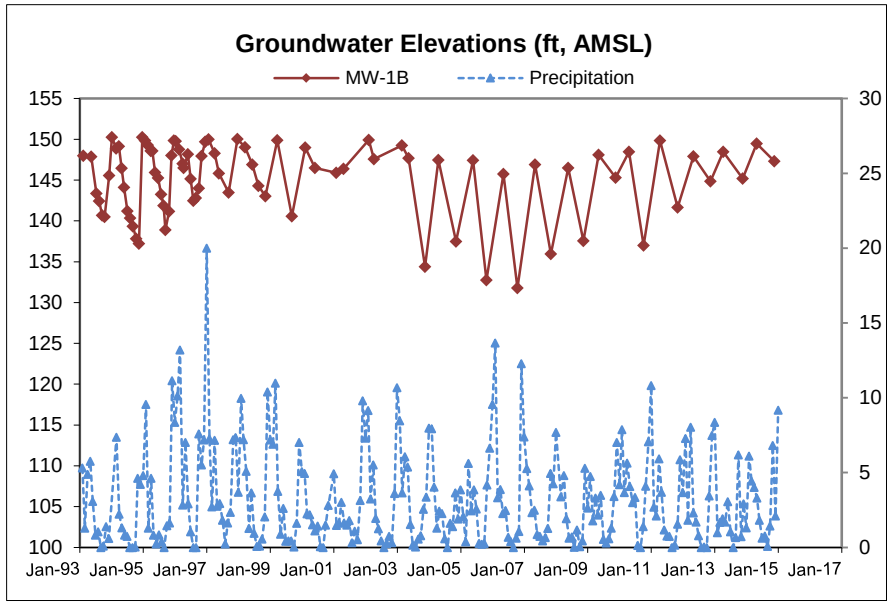
[b] Water levels have not been measured in active production well MB-1 North since 2000 because a sounding tube is not available to lower a water level measuring tape.

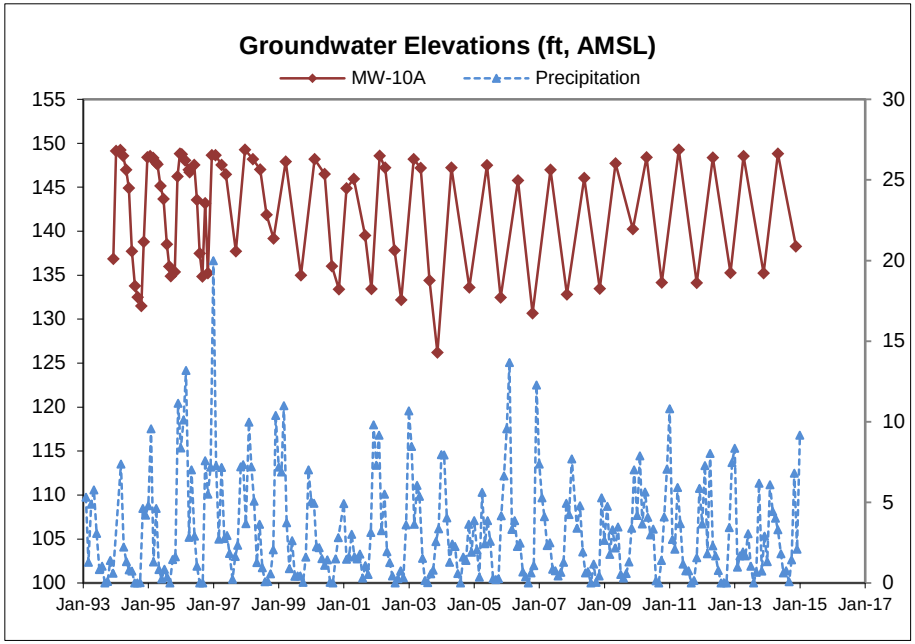
[c] MW-5B re-surveyed in October 2012 after repair to the well casing was completed.

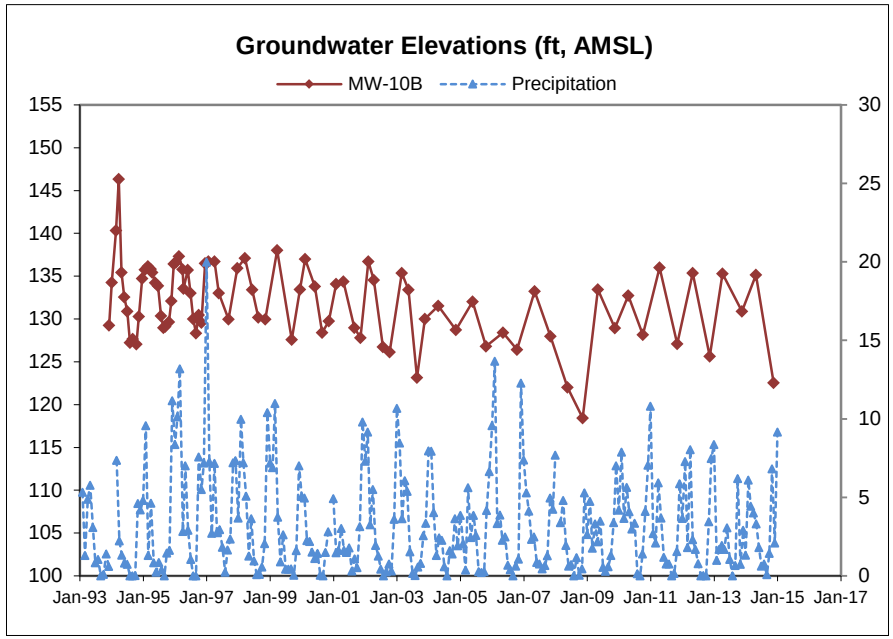
Proposed Module 11 Area Groundwater Elevation Hydrographs

Appendix B
Proposed Module 11 Area Groundwater Elevation Hydrographs with Precipitation
Riverbend Landfill





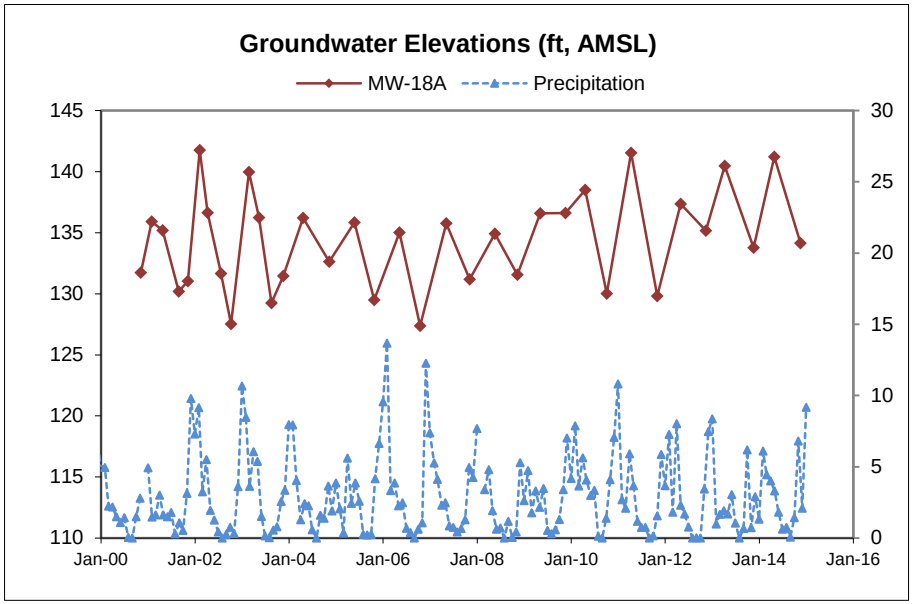


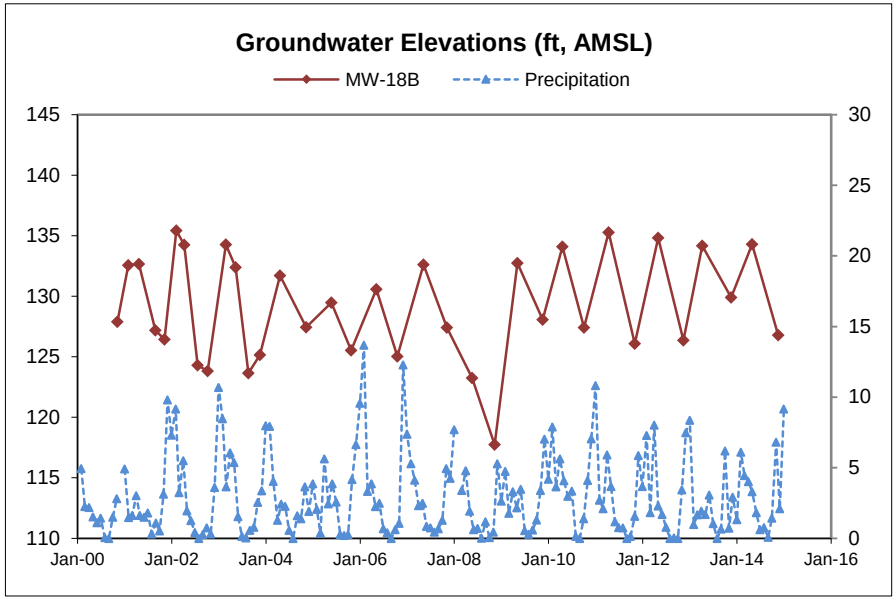


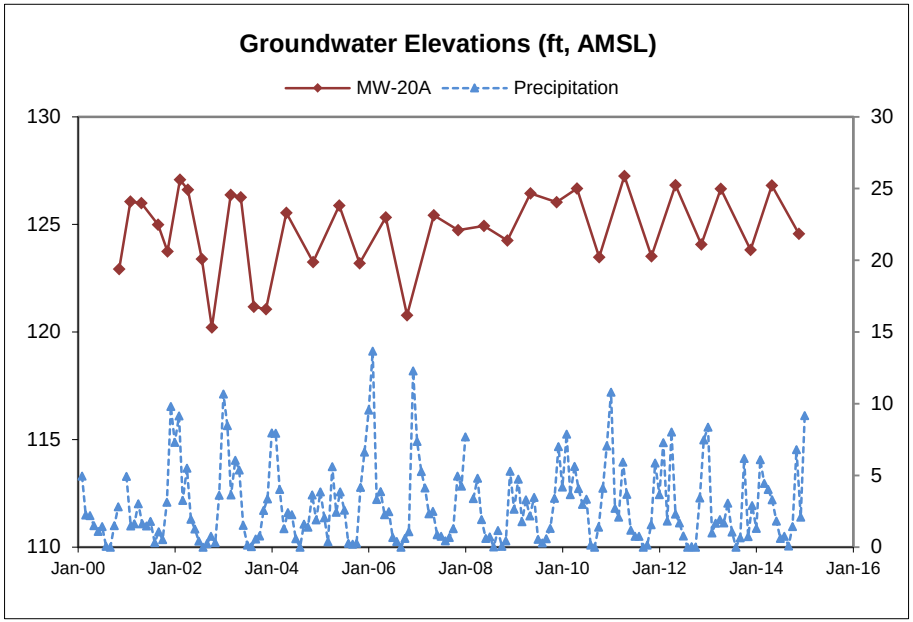
Notes:

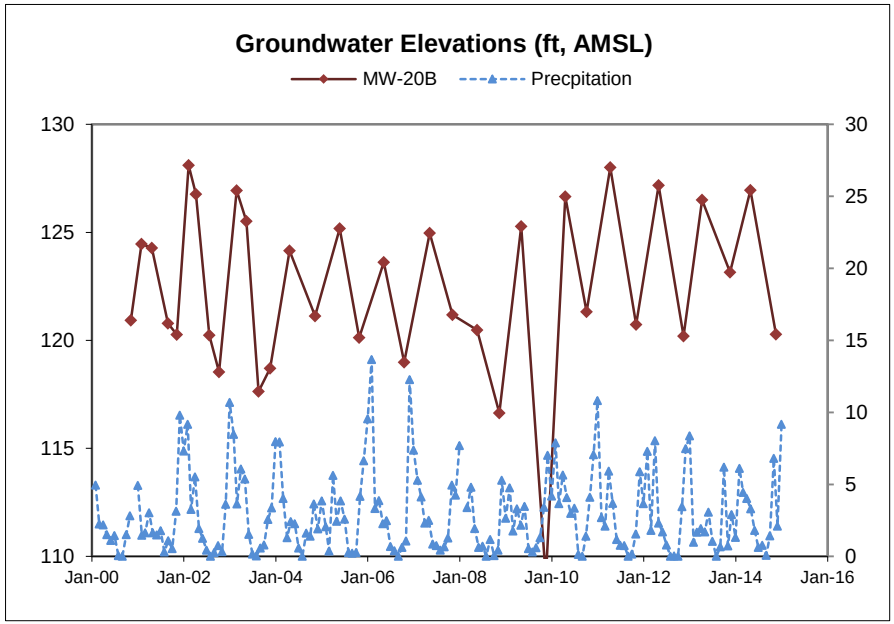
Left axis, groundwater elevation in feet above mean sea level (local datum). Right axis, precipitation in inches.

Appendix B
Proposed Module 11 Area Groundwater Elevation Hydrographs with Precipitation
Riverbend Landfill





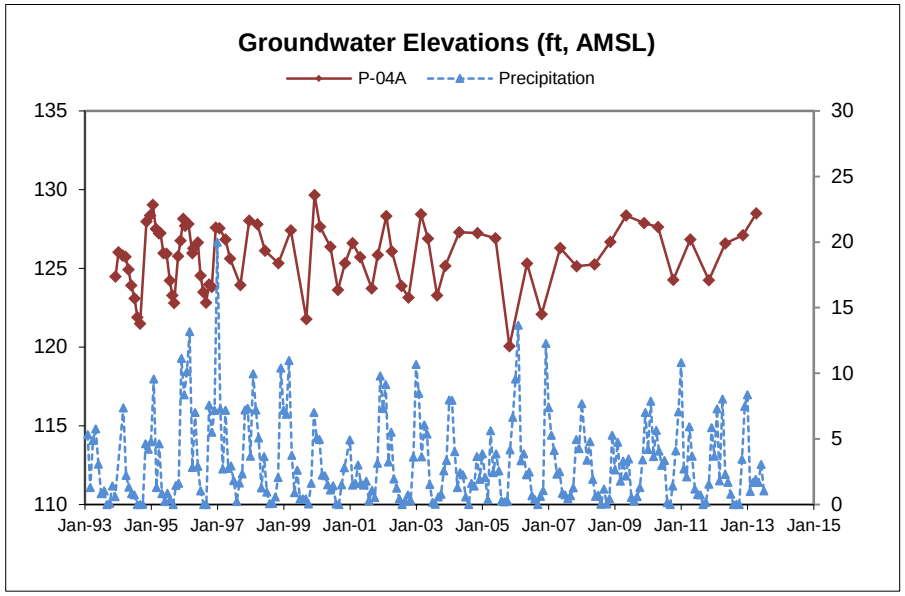


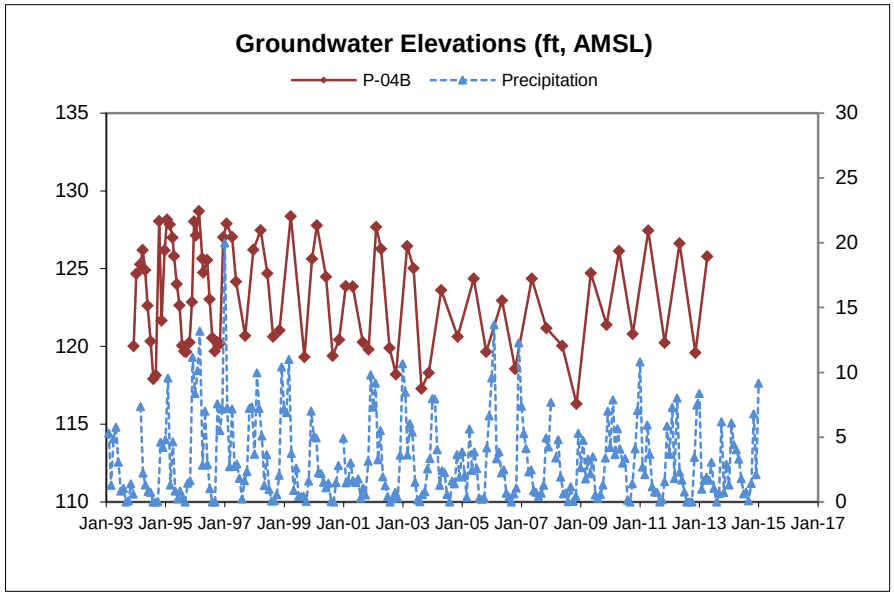


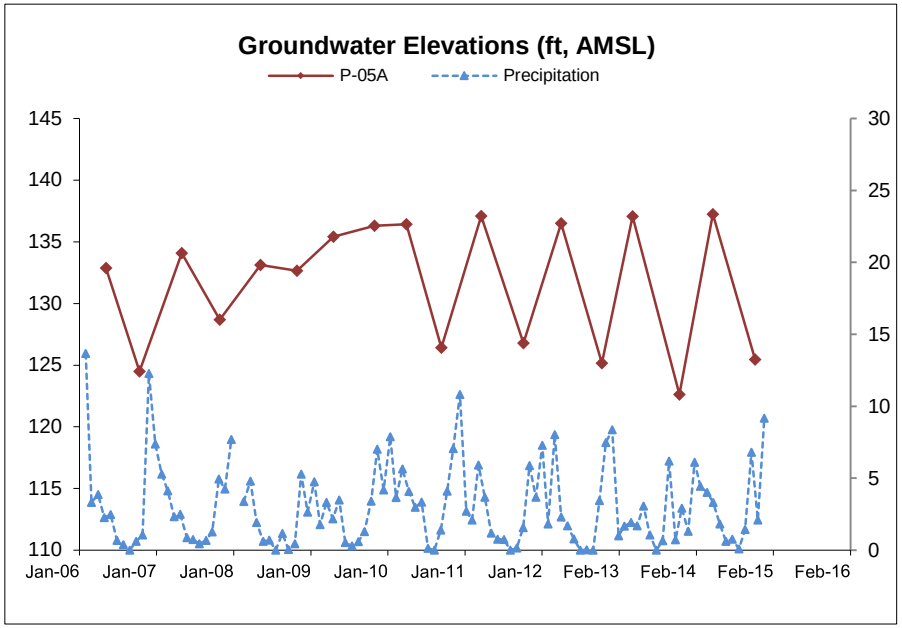
Notes:

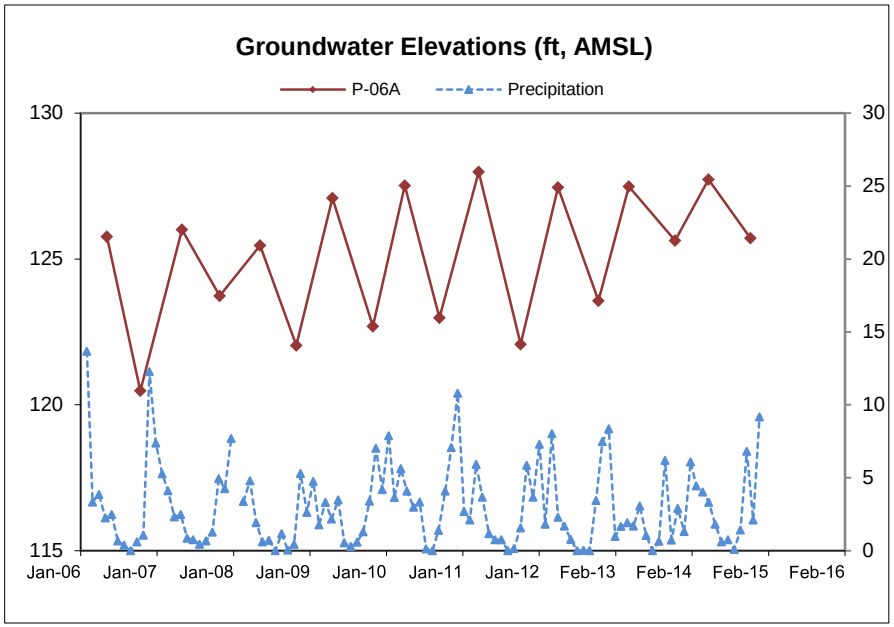
Left axis, groundwater elevation in feet above mean sea level (local datum). Right axis, precipitation in inches.

Appendix B
Proposed Module 11 Area Groundwater Elevation Hydrographs with Precipitation
Riverbend Landfill





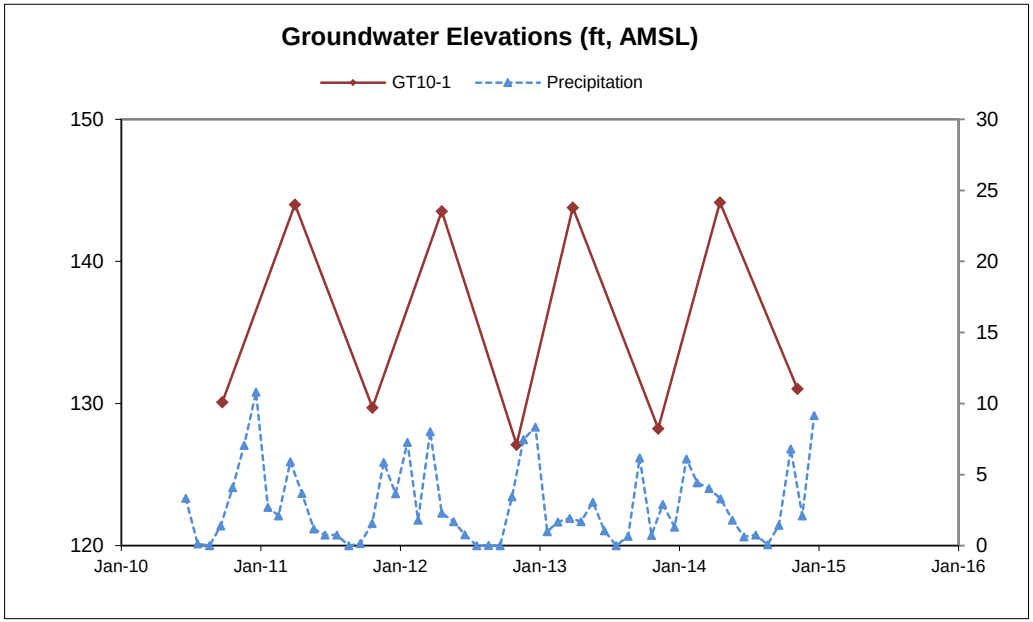




Notes:

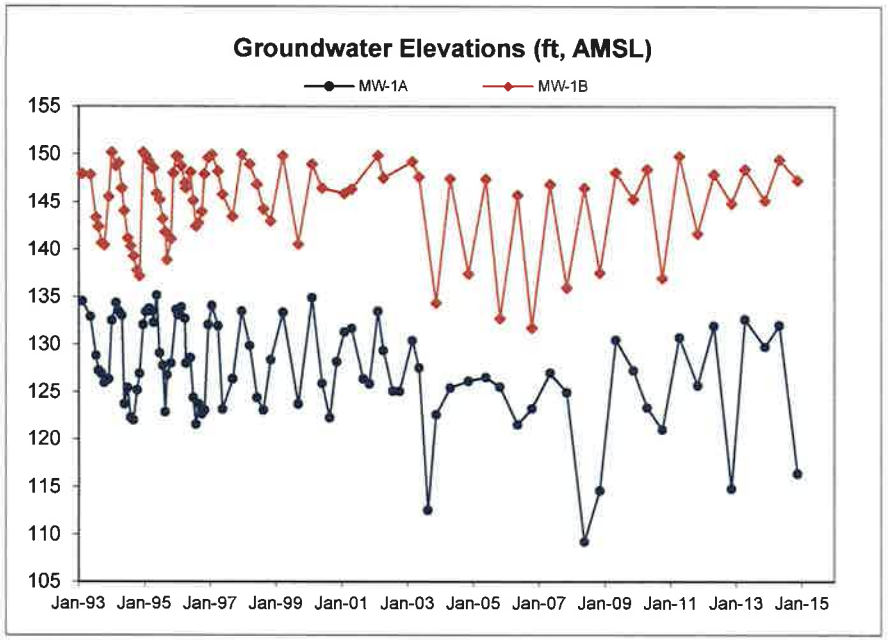
Left axis, groundwater elevation in feet above mean sea level (local datum). Right axis, precipitation in inches.

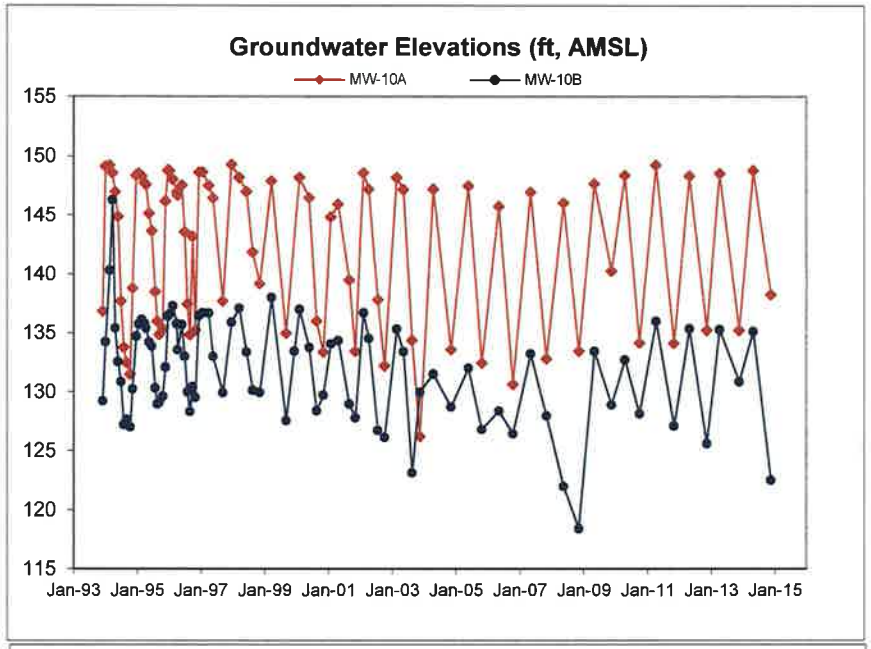
Appendix B
Proposed Module 11 Area Groundwater Elevation Hydrographs with Precipitation

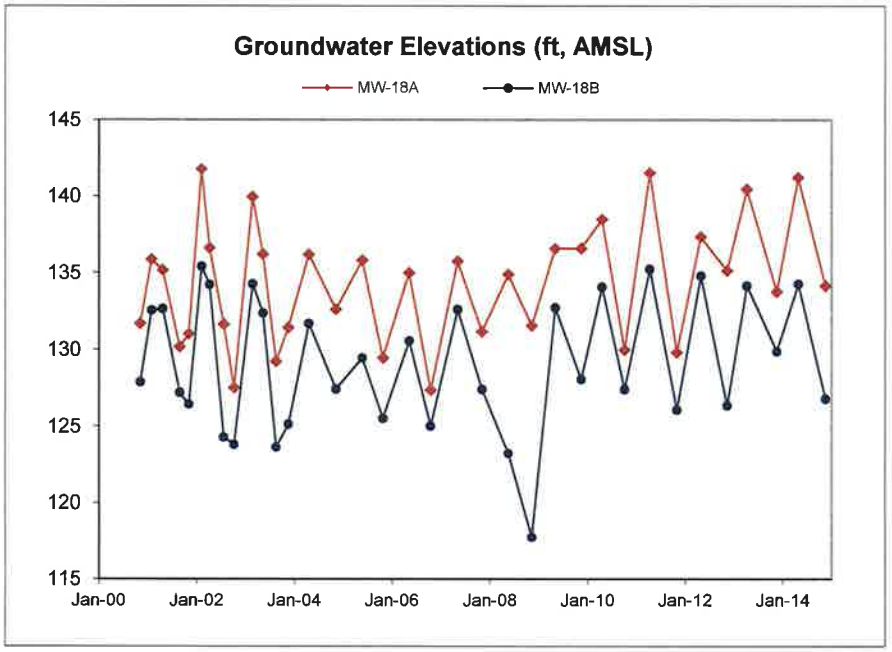


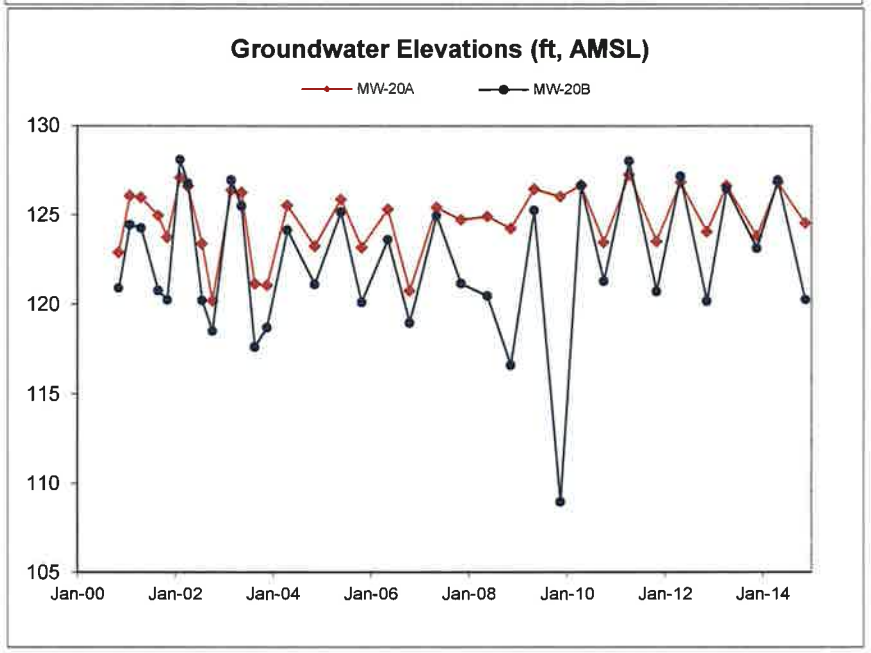
Notes:
Left axis, groundwater elevation in feet above mean sea level (local datum). Right axis, precipitation in inches.

Appendix B
Proposed Module 11 Area Groundwater Elevation Hydrographs (Shallow and Deep Zones)
Riverbend Landfill



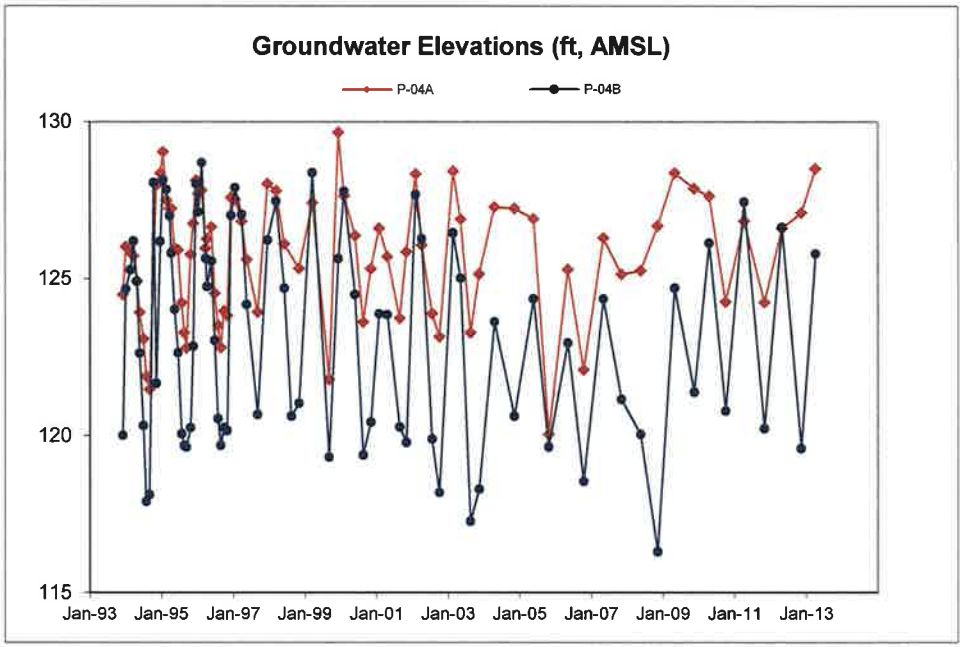






Notes: Groundwater elevation in feet above mean sea level (local datum) (ft, AMSL).

Appendix B
Proposed Module 11 Area Groundwater Elevation Hydrographs (Shallow and Deep Zones)
Riverbend Landfill



Notes: Groundwater elevation in feet above mean sea level (local datum) (ft, AMSL).

APPENDIX C

Proposed Module 11 Area Surficial Soil Type Data Sheets

Yamhill County, Oregon

2013A—Wapato silty clay loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2dgl9
Elevation: 50 to 1,200 feet
Mean annual precipitation: 40 to 60 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Wapato and similar soils: 90 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wapato

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave, linear
Parent material: Loamy alluvium

Typical profile

Ap - 0 to 9 inches: silty clay loam
A - 9 to 16 inches: silty clay loam
Bg1 - 16 to 22 inches: silty clay loam
Bg2 - 22 to 32 inches: silty clay loam
BCg - 32 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 0 to 9 inches
Frequency of flooding: Occasional
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 12.4 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Other vegetative classification: Poorly Drained (G002XY006OR)

Minor Components

Waldo

Percent of map unit: 2 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Poorly Drained (G002XY006OR)

Data Source Information

Soil Survey Area: Yamhill County, Oregon
Survey Area Data: Version 2, Sep 24, 2014

Yamhill County, Oregon

2301A—Amity silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1j8b1
Elevation: 150 to 400 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Amity and similar soils: 96 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Amity

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Silty glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: silt loam
A - 7 to 16 inches: silt loam
E - 16 to 22 inches: silt loam
Bt1 - 22 to 28 inches: silty clay loam
Bt2 - 28 to 35 inches: silty clay loam
C - 35 to 72 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 16 to 22 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Other vegetative classification: Somewhat Poorly Drained (G002XY005OR)

Minor Components

Dayton

Percent of map unit: 3 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave

Data Source Information

Soil Survey Area: Yamhill County, Oregon
Survey Area Data: Version 2, Sep 24, 2014

Yamhill County, Oregon

2310A—Woodburn silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1j8b4
Elevation: 100 to 290 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Woodburn and similar soils: 93 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodburn

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Silty glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: silt loam
A - 9 to 17 inches: silt loam
2Bt1 - 17 to 25 inches: silty clay loam
2Bt2 - 25 to 32 inches: silty clay loam
2BCt1 - 32 to 39 inches: silt loam
2BCt2 - 39 to 54 inches: silt loam
2C1 - 54 to 68 inches: silt loam
2C2 - 68 to 80 inches: stratified fine sandy loam to silt loam
3C3 - 80 to 92 inches: stratified fine sandy loam to silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 25 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 1

Hydrologic Soil Group: C
Other vegetative classification: Moderately Well Drained < 15% Slopes (G002XY004OR)

Minor Components

Dayton
Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave

Data Source Information

Soil Survey Area: Yamhill County, Oregon
Survey Area Data: Version 2, Sep 24, 2014

Yamhill County, Oregon

2310C—Woodburn silt loam, 3 to 12 percent slopes

Map Unit Setting

National map unit symbol: 1j8b5
Elevation: 100 to 350 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Woodburn and similar soils: 93 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodburn

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Silty glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: silt loam
A - 9 to 17 inches: silt loam
2Bt1 - 17 to 25 inches: silty clay loam
2Bt2 - 25 to 32 inches: silty clay loam
2BCt1 - 32 to 39 inches: silt loam
2BCt2 - 39 to 54 inches: silt loam
2C1 - 54 to 68 inches: silt loam
2C2 - 68 to 80 inches: stratified fine sandy loam to silt loam
3C3 - 80 to 92 inches: stratified fine sandy loam to silt loam

Properties and qualities

Slope: 3 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 25 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C
Other vegetative classification: Moderately Well Drained < 15% Slopes (G002XY004OR)

Minor Components

Dayton
Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave

Data Source Information

Soil Survey Area: Yamhill County, Oregon
Survey Area Data: Version 2, Sep 24, 2014

APPENDIX D

Supporting Documentation for Slug Testing of Piezometer GT-10-1 and Pump Testing of Production Well PW-1

SCS ENGINEERS

APPENDIX D

Supporting Documentation for Slug Testing of Piezometer GT-10-1 and Pump Testing of Production Well PW-1

Riverbend Landfill
McMinnville, Oregon

August 2015

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Attachment D-1 Supporting Documentation for Piezometer GT-10-1 Slug Testing

Attachment D-2 Supporting Documentation for Production Well PW-1 Pumping Tests

1.0 INTRODUCTION

This appendix provides the following supporting documentation for the slug test performed in piezometer GT-10-1 and the pump testing conducted using production well PW-1:

- Descriptions of the field methods and procedures.
- Explanations of the data evaluation methods and results.
- Presentation of raw data obtained during the tests.

The hydraulic testing was performed in support of the Hydrogeologic Site Characterization (HSC) for proposed Module 11. The field procedures and data analysis methods were performed in accordance with the HSC work plan (SCS, 2015b) that was approved by the Oregon Department of Environmental Quality (DEQ) in an email communications dated May 18, 2015 (DEQ, 2015b).

2.0 PIEZOMETER GT-10-1 SLUG TESTING

2.1 TESTING METHODS AND PROCEDURES

Slug tests were performed on July 10, 2015 in shallow WBZ piezometer GT-10-1 (see Figure D-1) to provide hydraulic data in the central portion of proposed Module 11. The objective of the slug testing was to estimate the "in-situ" hydraulic conductivity in the shallow WBZ at piezometer GT-10-1 (a construction detail is provided in Appendix A of the HSC report).[1] The piezometer was constructed with 2-inch diameter, PVC, screened casing from 15 to 25 feet below ground surface (bgs). The following describes the procedures for conducting the slug test:

- The static groundwater level was measured at 15.51 feet below the top of casing using an electronic water-level probe before performing the slug test. The water level was approximately 11.3 feet above the bottom of the well.
- A 15 pounds per square inch gauge (psig), vented, pressure transducer/data logger[2] was installed near the bottom of the monitoring well to measure and record water levels during testing.

[1] Slug tests were previously performed to evaluate hydraulic conductivity values in shallow (silt-clay) water-bearing zone (WBZ) wells MW-10A, MW-20A, and former P-04A located generally at the upgradient and downgradient margins of proposed Module 11. Slug tests were also previously performed in deep (sand-gravel) WBZ wells MW-18B and MW-20B located generally at the upgradient and downgradient margins of proposed Module 11 (see Table 3-3 of the HSC report for a summary of the results).

[2] In-Situ Level Troll® 700 pressure transducers/data loggers (vented) were used for the slug tests and aquifer pumping tests. Barometric pressure corrections are not needed for the vented transducers. A gauged (vented) pressure sensor eliminates the effects of atmospheric pressure because the vent tube in the cable allows atmospheric pressure to be applied to the back of the sensor. The unit of measure is pounds per square inch gauge (psig), measured with respect to atmospheric pressure.

- A rising-head slug test was performed by artificially raising the water level in the piezometer by rapidly lowering 1.5-inch diameter, 2-foot long PVC slug into the saturated portion of the piezometer. The change in the water level was recorded by the pressure transducer until the water level recovered to within 90 percent or less of its original level. The pressure transducer was programmed to measure water levels at logarithmic time intervals.

- A falling head slug test was then performed by artificially lowering the water level in the piezometer by rapidly removing the PVC slug out of the piezometer. The change in the water level was recorded by the pressure transducer until the water level recovered to within 90 percent or less of its original level.

2.2 DATA ANALYSIS METHODS AND RESULTS

The raw data obtained from the pressure transducer/data logger are provided in Attachment 1. The Level Troll® data sets were imported into Microsoft Excel® and visually inspected for anomalies. No anomalies were detected, and no data were removed. Data were further analyzed for aquifer properties using Aqtesolv Professional® aquifer analysis software. Test- and well-specific parameters were used to implement the analysis of the LevelTroll® data. For the slug tests, the Bouwer-Rice unconfined aquifer analysis solution was utilized to obtain hydraulic conductivity values for both slug-in and slug-out analysis as described in Butler, 1998.

The Aqtesolv data analysis output displacement curves and calculated values for hydraulic conductivity are provided in Attachment 1. The hydraulic conductivity values determined from the slug tests were 1.79×10^{-4} and 2.25×10^{-4} cm/sec (3.53×10^{-4} and 4.43×10^{-4} ft/min).

3.0 PRODUCTION WELL PW-1 PUMP TESTING METHODS AND PROCEDURES

3.1 TESTING METHODS AND PROCEDURES

The primary objective of the pumping test using production well PW-1 (screened in the deep, sand-gravel WBZ) was to evaluate the hydraulic connection, if any, between the shallow and deep WBZs. Well PW-1 is located at the northern tip of proposed Module 11 close to monitoring well pair MW-1A/MW-1B (see Figure D-1). The testing was also performed to further evaluate hydraulic conductivity of the sand-gravel WBZ in this area. An initial step drawdown pumping test was performed to determine a sustainable pumping rate for a follow-up 24-hour, constant rate pumping test.

Well PW-1 is used for landfill operations and the conveyance piping system for the well pump is connected to a nearby 12,000-gallon, aboveground storage tank (AST). Water is discharged from the AST into water tank trucks that are used primarily for dust suppression throughout the active areas of the landfill. The well is contained in a small well house. The wellhead appurtenances included an analog flow meter, a pressure tank that regulates the pump on/off intervals, and a ball valve.

As explained in more detail in the HSC work plan (SCS, 2015b), a Water Well Report for well PW-1 confirms that this well is screened in the deep sand-gravel WBZ. The Water Well Report indicates well PW-1 was drilled to a total depth of 97 feet bgs, and was constructed with 6-inch-diameter steel casing to 77 feet bgs and a 4-inch diameter liner from 55 to 97 feet bgs. The well was perforated from 57 to 97 feet bgs apparently in the sand-gravel WBZ (perforated in alternating clay and gravel).

Well PW-1 was modified on June 30 to facilitate conducting the pumping test. The pump (a stainless steel, submersible, 2-hp pump) was removed so that a measurement could be made of the total depth of the well, which was measured at 87.5 feet bgs. The measured total depth indicated that the well had silted in approximately 9.5 feet from the total depth of 97 feet bgs reported on the Water Well Report from 1981.[3] The pump was reinstalled so that the pump intake was at 84.8 feet bgs (2.7 feet above the bottom of the well). Wellhead modifications included the following: (1) the pressure tank was bypassed to allow continuous pumping, (2) an electronic flow meter and gate valve were installed, and (3) a secondary discharge line with a gate valve was installed to allow direct measurements of the discharge rate (i.e., using graduated buckets).

Pressure transducers/data loggers[1] were deployed on July 4, 2015, into the pumping and observation wells as follows:

- A 100 psig transducer/data logger was installed in pumping well PW-1 at a depth of approximately 81 feet bgs
- 15 and 30 psig transducers/data loggers were installed in nearby monitoring well pair MW-1B (shallow) and MW-1A (deep), respectively. These monitoring wells are located 60 and 55 feet, respectively, from well PW-1.
- 15 and 30 psig transducers/data loggers were installed in the next closest monitoring well pair MW-10A (shallow) and MW-10B (deep) located approximately 600 feet from well PW-1 (see Figure D-1).

The initial water levels measured by the transducers (i.e., the height of the water column above the transducers in feet) were verified by field measurements of the water levels in the wells using an electronic water level probe. The transducers were initially programmed to record water levels every 15 minutes to obtain some background data before testing began.

A step drawdown pumping test was performed on July 6, 2015, to estimate a sustainable pumping rate (i.e., a rate at which well PW-1 would not pump dry) for a follow-up constant rate discharge pumping test. Approximately 54 feet of water column above the well PW-1 transducer was available for water-level drawdown. The transducers in the pumping well (PW-1) and nearby deep WBZ monitoring well MW-1A were reprogrammed to measure drawdown at logarithmic time intervals. The following summarizes each step during the test:

[3] SCS Engineers used a down-hole video camera to video log the well to confirm construction information reported in the Water Well Report. However, the water was too turbid to identify well construction details other than the transition from 6-inch casing to 4-inch liner at the reported depth of 55 feet bgs.

- Step 1: started at 10:47 am at a rate of 5 gallons per minute (gpm)
- Step 2: started at 10:26 am at a rate of 11.5 gpm
- Step 3: started at 2:36 pm at a rate of 16 gpm
- Step 4: started 4:48 pm at a rate of 25 gpm
- End test at 7:00 pm and continue to record water-level recovery overnight.

Graphs of water-level drawdowns and recoveries in pumping well PW-1 and deep WBZ well MW-1A during the step drawdown pumping test are provided in Figure D-2. Based on the extrapolation of the well PW-1 drawdown curve, a pumping rate of 20 gallons per minute (gpm) was conservatively chosen for the constant rate pumping test to ensure that the well would not be pumped dry.

A 24-hour, constant rate (20 gpm) pumping test was initiated at 9:45 am on July 7, 2015. After the pump was shut off on July 8, 2015, water-level recovery was recorded with the transducers until 9:00 am on July 10, 2015. Graphs of water-level drawdowns and recoveries in pumping well PW-1 and deep WBZ well MW-1A during the constant rate pumping test are provided in Figure D-3. The raw data obtained from the pressure transducers/data loggers are provided in Attachment 2.

During the pumping tests, the discharge water was pumped to the 12,000-gallon AST that was periodically emptied using water tank trucks. The discharge rate was monitored with the analog flow meter, electronic flow meter, and direct measurements using graduated 5- and/or 20-gallon gallon containers. It was determined that the flow meter readings did not correlate well with the direct measurements. Consequently, the direct measurements were used for determining the discharge rates during the step drawdown and constant rate pumping tests.

Groundwater levels were also measured manually during the constant rate pumping test with an electronic water-level probe in monitoring well pair MW-18A/MW-18B and shallow WBZ piezometers P-05A and GT-10A, located between approximately 1,100 to 1,850 feet from well PW-1 (see Figure D-1). Groundwater levels were measured every 1 or 2 hours during the first 8 hours of pumping, and every 3 to 4 hours until pumping was stopped. A summary of the manual groundwater-level measurements is provided in Table D-1.

3.2 DATA ANALYSIS METHODS AND RESULTS

Level Troll® data sets were imported into Microsoft Excel® and visually inspected for anomalies. No anomalies were detected, and no data were removed. Data were further analyzed for aquifer properties using Aqtesolv Professional® aquifer analysis software. Test- and well-specific parameters were used to implement the analysis of the LevelTroll® data obtained at each well. For the constant rate pumping test, the Cooper-Jacob confined aquifer analysis solution was utilized to obtain transmissivity and storativity values for both drawdown and recovery analysis as described in Walton, 1987.

The Aqtesolv data analysis output curves for drawdown and recovery, and calculated values for transmissivity and storativity, are provided in Appendix A. The storativity values for the pumping well PW-1 were not used due to wellbore storage that affected the results (this is always the case with the pumping well analysis). The following summarizes the pumping test results:

- Total water-level drawdown in wells PW-1 and MW-1A were 24.0 and 11.0 feet, respectively.
- Transmissivity values for the deep WBZ range from 0.123 to 0.139 square feet per minute (ft^2/min) (1,325 to 1,493 gallons per day per foot [gpd/ft]).
- Storativity values calculated from the well MW-1A data were 0.00021 and 0.00031 (dimensionless).
- A groundwater elevation hydrograph for shallow WBZ well MW-1B during the period of July 4 through July 10, 2015, is provided in Figure D-4. Decreasing groundwater elevations were observed before the pumping test began (approximately 0.25 feet). Groundwater elevations were stable or increasing during the step drawdown and constant rate drawdown pumping tests, indicating no response to pumping.
- Groundwater elevation hydrographs for well pair MW-10A and MW-10B are also provided in Figure D-4. Water-level drawdown response was observed in well MW-10B during both the step drawdown test (0.78 feet of drawdown) and constant rate test (2.1 feet of drawdown), and water-level recovery response was observed when the pump was shut off. No response to pumping was observed in well MW-10A. This well exhibited a general increasing groundwater elevation trend (with minor fluctuations) before and after the pumping tests began.
- The manual groundwater level measurements for wells MW-18A and MW-18B and piezometers P-05A and GT-10A showed that (1) there was less than 0.1 foot of water-level change during pumping, and (2) there were data points that showed both increasing and decreasing groundwater levels during pumping. The results indicate there was no response to pumping.

Additional discussion of the pumping test results is provided in the HSC report.

4.0 REFERENCES

Butler, J.J., 1998, *The Design, Performance, and Analysis of Slug Tests*. Lewis Publishers. 252 pp.

SCS Engineers, 2015, *Work Plan for Hydrogeologic Site Characterization in Support of Module 11 Expansion Permit (Revised), Riverbend Landfill, McMinnville, Oregon*, prepared for Riverbend Landfill Company, Inc., McMinnville, Oregon, by SCS Engineers, Portland, Oregon, April 23.

Walton, W.C., 1987, *Groundwater Pumping Tests*. Lewis Publishers. 201 pp.

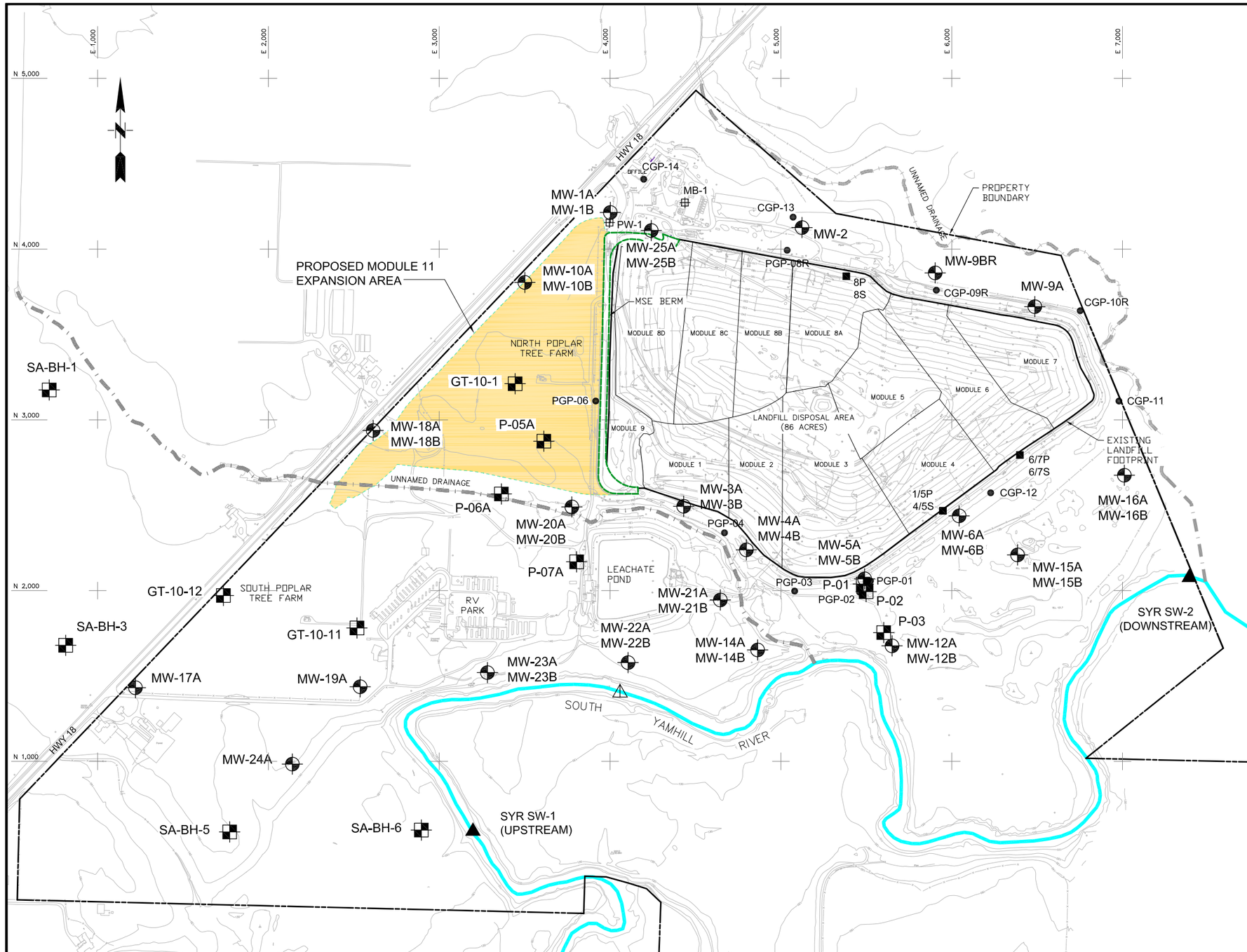
TABLE

Table D-1
Manual Groundwater Level Measurements During Constant Rate Pumping Test
Riverbend Landfill

Piezometer or Monitoring Well Designation	Date/Time	Groundwater Level [a] (ft btoc)	Comment
MW-18A (shallow WBZ))	7/6/2015 8:38	16.96	Before Step Drawdown Pumping Test
	7/7/2015 8:17	17.02	Before Constant Rate Pumping Test; Test Started on 7/7/15 at 9:45 am
	7/7/2015 10:50	17.02	During Constant Rate Pumping Test
	7/7/2015 11:50	17.02	During Constant Rate Pumping Test
	7/7/2015 12:45	17.02	During Constant Rate Pumping Test
	7/7/2015 14:54	17.00	During Constant Rate Pumping Test
	7/7/15: 16:57	17.01	During Constant Rate Pumping Test
	7/7/2015 20:03	17.02	During Constant Rate Pumping Test
	7/8/2015 0:30	17.06	During Constant Rate Pumping Test
	7/8/2015 4:30	17.04	During Constant Rate Pumping Test
	7/8/2015 9:30	17.06	During Constant Rate Pumping Test; Test Ended on 7/8/15 at 9:59 am
MW-18B (deep WBZ)	7/6/2015 8:39	20.90	Before Step Drawdown Pumping Test
	7/7/2015 8:18	21.47	Before Constant Rate Pumping Test; Test Started on 7/7/15 at 9:45 am
	7/7/2015 10:53	21.47	During Constant Rate Pumping Test
	7/7/2015 11:52	21.47	During Constant Rate Pumping Test
	7/7/2015 12:47	21.48	During Constant Rate Pumping Test
	7/7/2015 14:57	21.41	During Constant Rate Pumping Test
	7/7/2015 17:01	21.38	During Constant Rate Pumping Test
	7/7/2015 20:05	21.37	During Constant Rate Pumping Test
	7/8/2015 0:32	21.40	During Constant Rate Pumping Test
	7/8/2015 4:32	21.39	During Constant Rate Pumping Test
	7/8/2015 9:32	21.41	During Constant Rate Pumping Test; Test Ended on 7/8/15 at 9:59 am
P-05A (shallow WBZ)	7/6/2015 8:18	18.15	Before Step Drawdown Pumping Test
	7/7/2015 8:43	18.26	Before Constant Rate Pumping Test; Test Started on 7/7/15 at 9:45 am
	7/7/2015 11:02	18.26	During Constant Rate Pumping Test
	7/7/2015 12:01	18.26	During Constant Rate Pumping Test
	7/7/2015 12:56	18.27	During Constant Rate Pumping Test
	7/7/2015 15:11	18.24	During Constant Rate Pumping Test
	7/7/2015 17:12	18.23	During Constant Rate Pumping Test
	7/7/2015 20:16	18.22	During Constant Rate Pumping Test
	7/8/2015 0:22	18.25	During Constant Rate Pumping Test
	7/8/2015 4:22	18.26	During Constant Rate Pumping Test
	7/8/2015 9:21	18.30	During Constant Rate Pumping Test; Test Ended on 7/8/15 at 9:59 am
GT-10-1 (shallow WBZ)	7/6/2015 8:25	15.03	Before Step Drawdown Pumping Test
	7/7/2015 8:36	15.24	Before Constant Rate Pumping Test; Test Started on 7/7/15 at 9:45 am
	7/7/2015 11:06	15.24	During Constant Rate Pumping Test
	7/7/2015 12:05	15.24	During Constant Rate Pumping Test
	7/7/2015 12:59	15.25	During Constant Rate Pumping Test
	7/7/2015 15:16	15.23	During Constant Rate Pumping Test
	7/7/2015 17:17	15.24	During Constant Rate Pumping Test
	7/7/2015 20:20	15.24	During Constant Rate Pumping Test
	7/8/2015 0:37	15.25	During Constant Rate Pumping Test
	7/8/2015 4:37	15.24	During Constant Rate Pumping Test
	7/8/2015 9:40	15.30	During Constant Rate Pumping Test; Test Ended on 7/8/15 at 9:59 am

NOTES:
ft btoc = feet below top of casing
WBZ = water-bearing zone
[a] Measured with an electronic water-level probe.

FIGURES



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Tributary Stream
- Proposed Expansion Area
- Mechanically Stabilized Earthen (MSE) Berm
- MW-19A — Groundwater Monitoring Well
- P-05A — Piezometer
- PW-1 — Landfill Water Well
- CGP-11 — Landfill Gas Monitoring Probe
- 6/7P 6/7S — LCRS and LSCS Monitoring Location
- SYR SW-1 — South Yamhill River Sampling Location (Approximate)
- South Yamhill River Gauging Station

BASE MAP SOURCE:

1) Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.

NOTES:

1) Monitoring wells and piezometers with "A" designation are screened in the shallow (silt-clay) water-bearing zone, and monitoring wells and piezometers with "B" designation are screened in the deeper (sand-gravel) water-bearing zone (except wells MW-1A and MW-1B that are reversed).

2) Piezometers with "GT" and "SA-BH" designations are screened in the shallow (silt-clay) water-bearing zone.

3) Leachate Collection and Removal System (LCRS) monitoring locations are identified by a "P" designation and Leak Detection System (LDS) monitoring locations are identified with a "S" designation.

4) Landfill gas monitoring probes with a "CGP" designation are compliance probes. Landfill gas monitoring probes with a "PGP" designation are performance evaluation probes.

SCS ENGINEERS
Environmental Consultants and Contractors
14945 SW Sequoia Parkway, Suite 180
Portland, Oregon 97224
(503) 639-9201 FAX: (503) 684-6948

0 600 1200
SCALE IN FEET

PROJECT NO. 04215015.00	DES BY D.L.
SCALE AS SHOWN	CHK BY L.C.
CAD FILE FIGURE D-1	APP BY L.C.

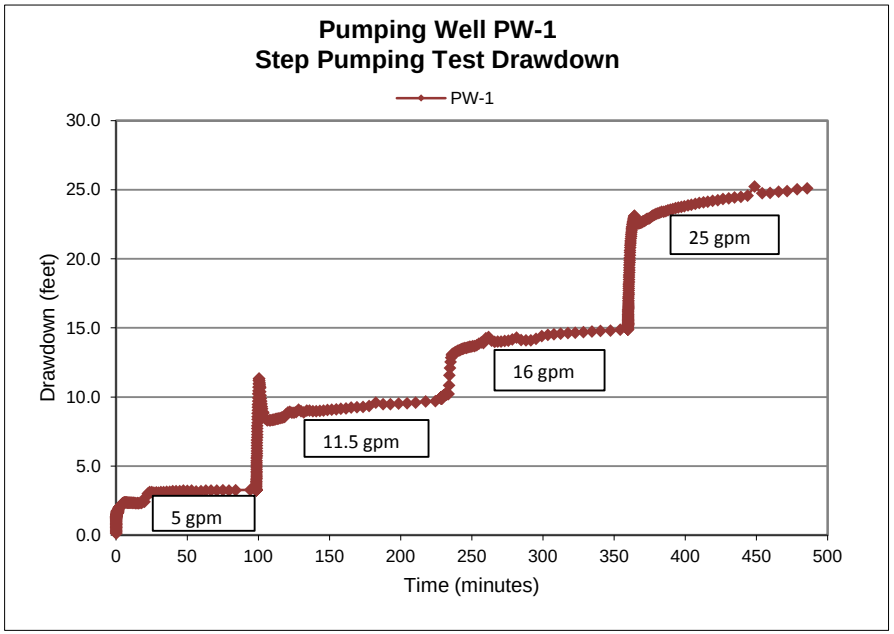
SITE PLAN AND EXISTING MONITORING LOCATIONS

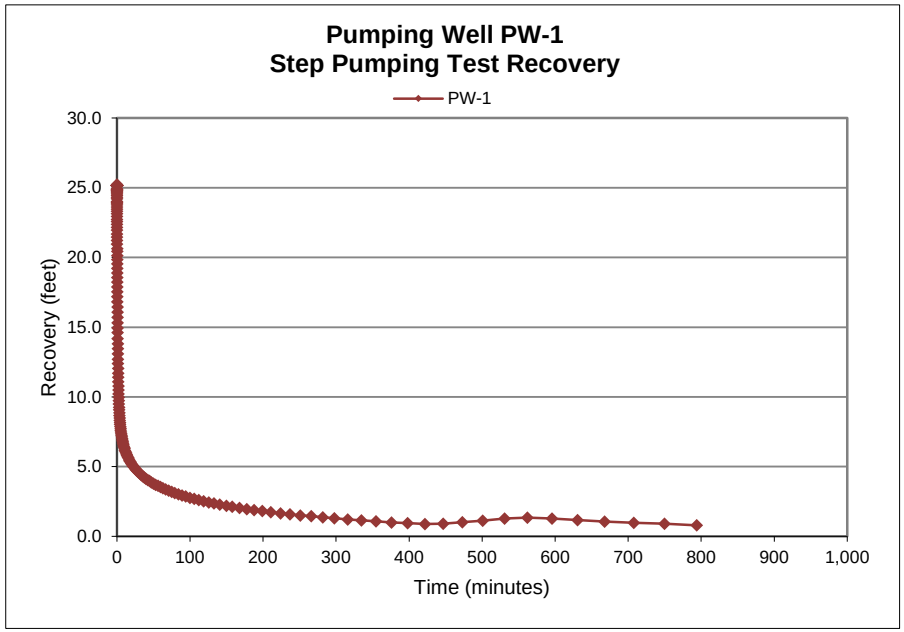
RIVERBEND LANDFILL
McMINNVILLE, OREGON

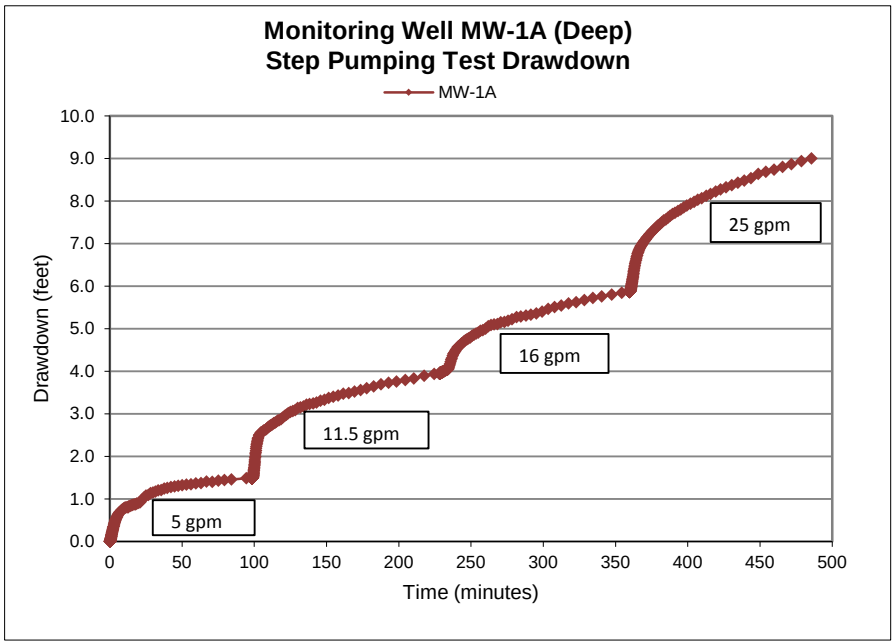
DATE JUNE 2015

FIGURE D-1

Figure D-2
Step Pumping Test Drawdown and Recovery Graphs
Hydrogeologic Site Characterization
Riverbend Landfill







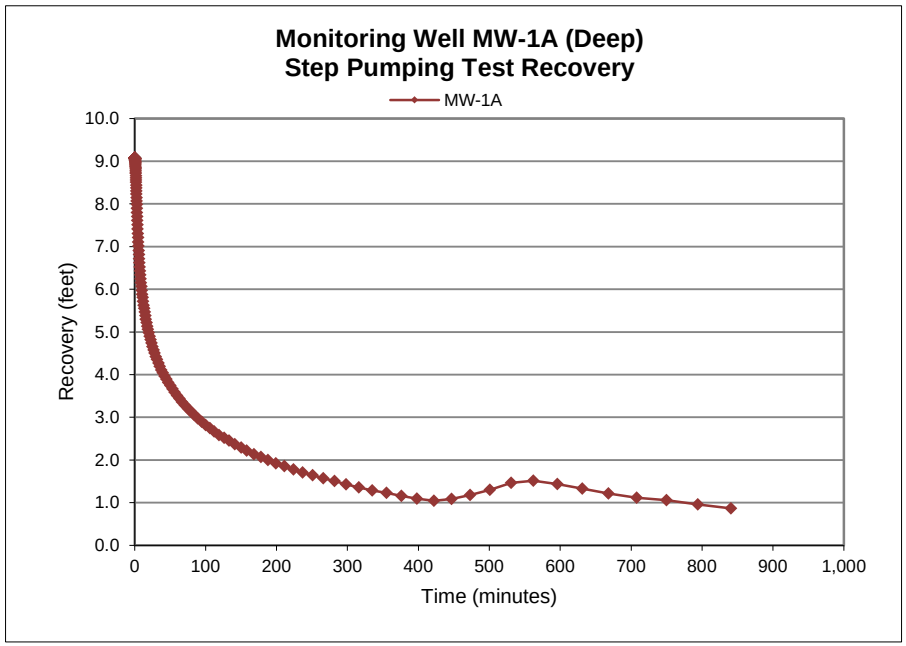
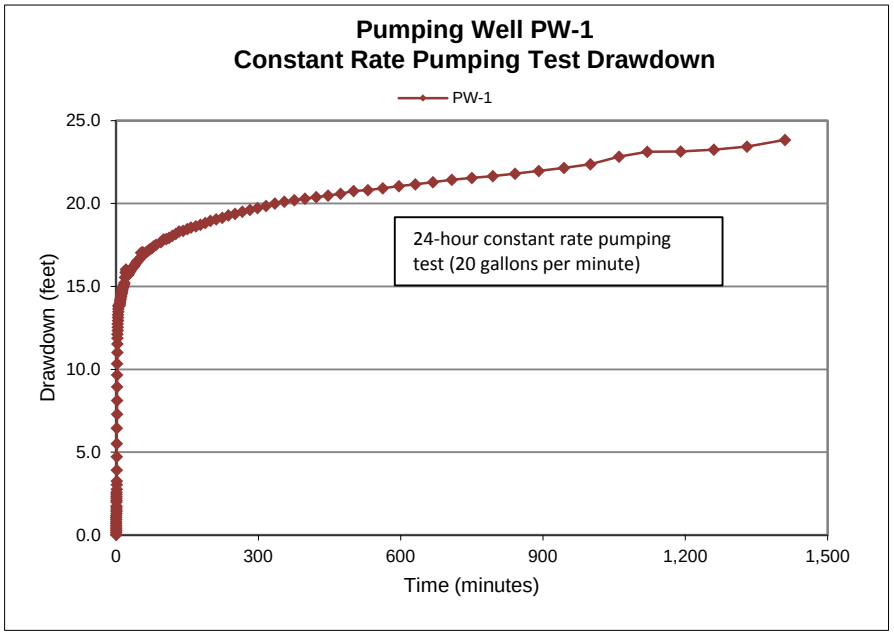
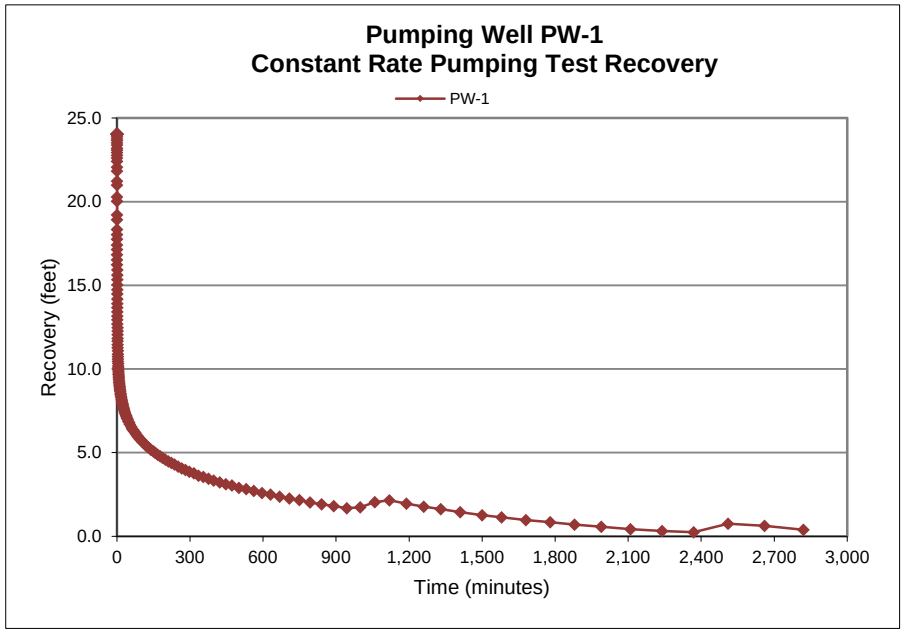
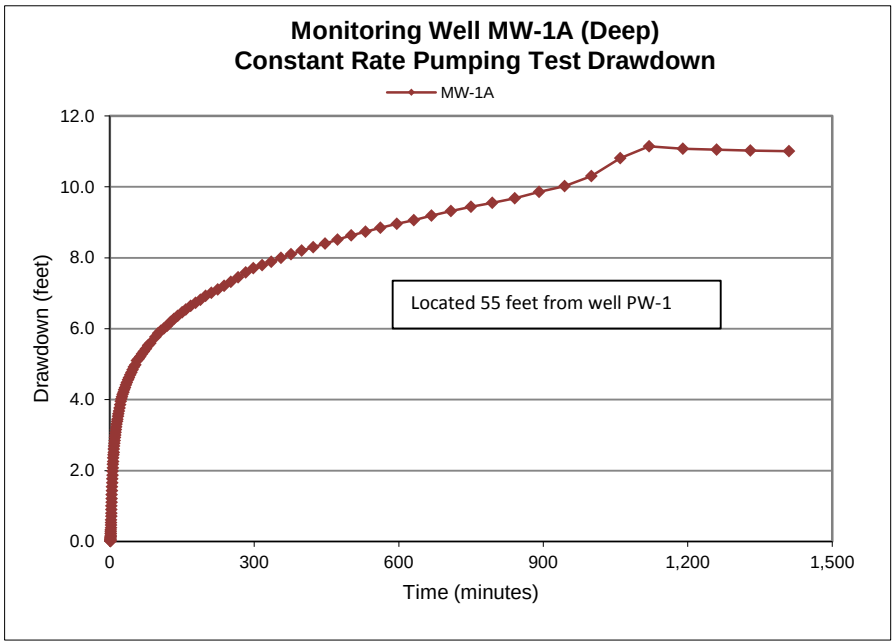


Figure D-3
Constant Rate Pumping Test Drawdown and Recovery Graphs
Hydrogeologic Site Characterization
Riverbend Landfill







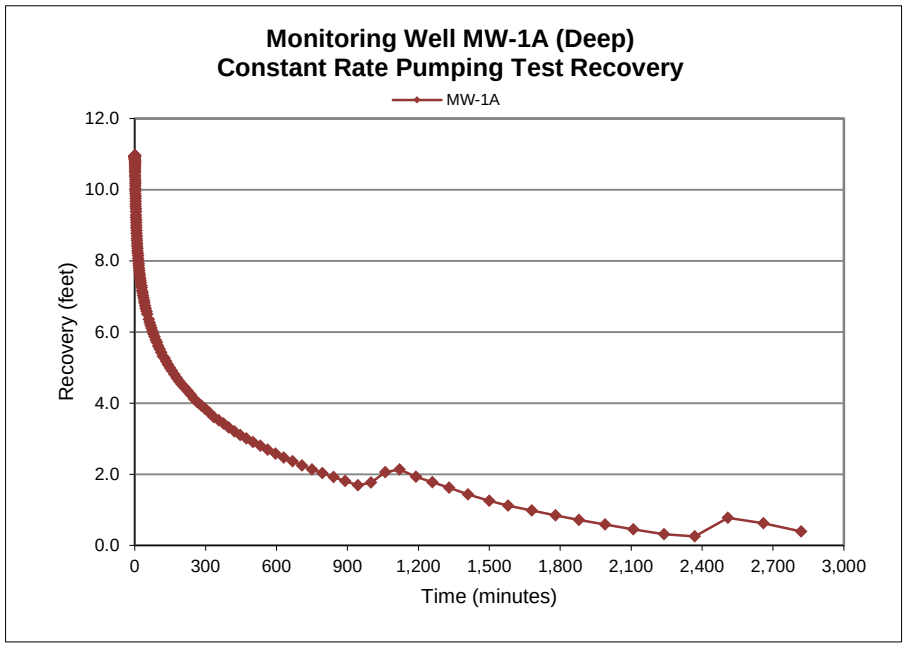
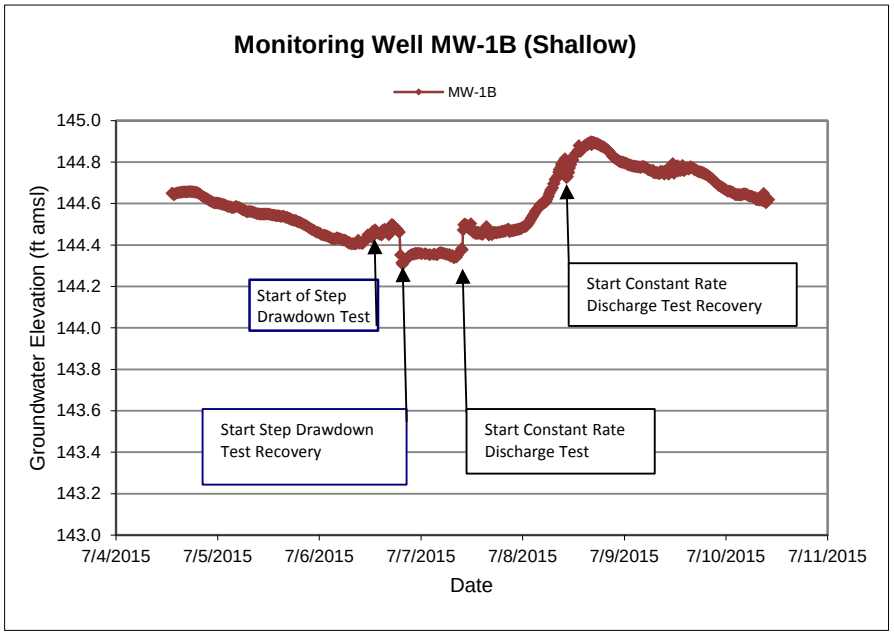
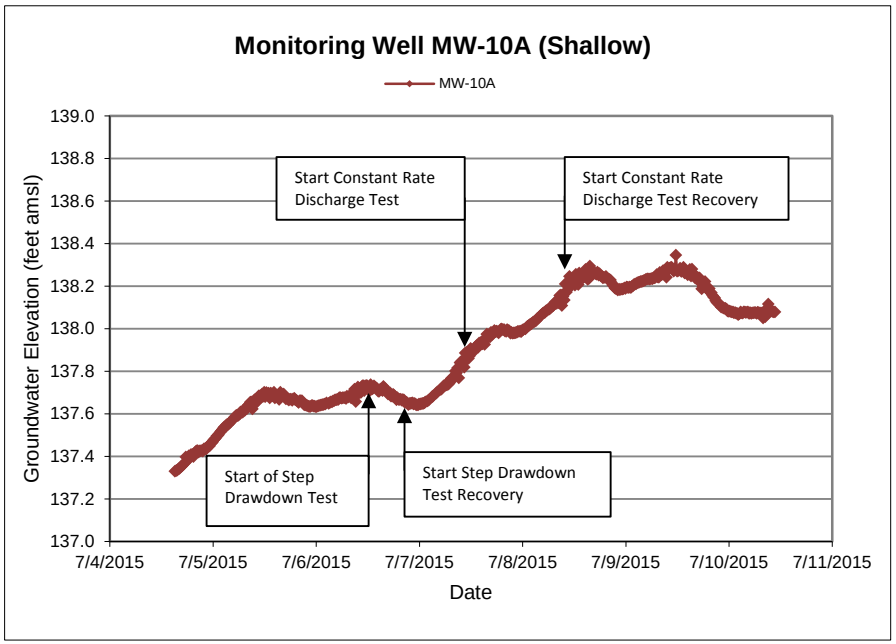
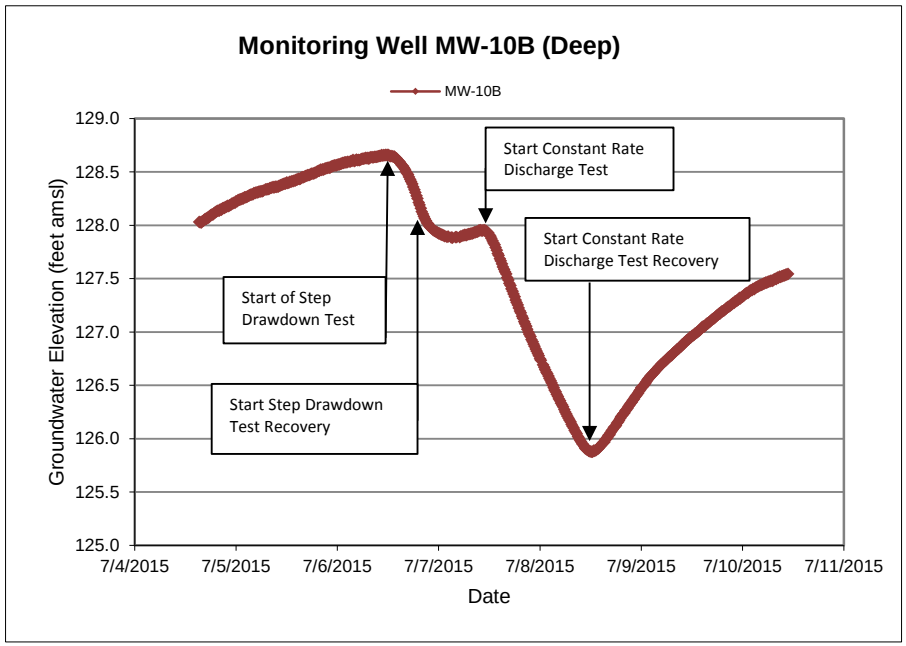


Figure D-4
Pumping Test Groundwater Elevation Hydrographs
Hydrogeologic Site Characterization
Riverbend Landfill

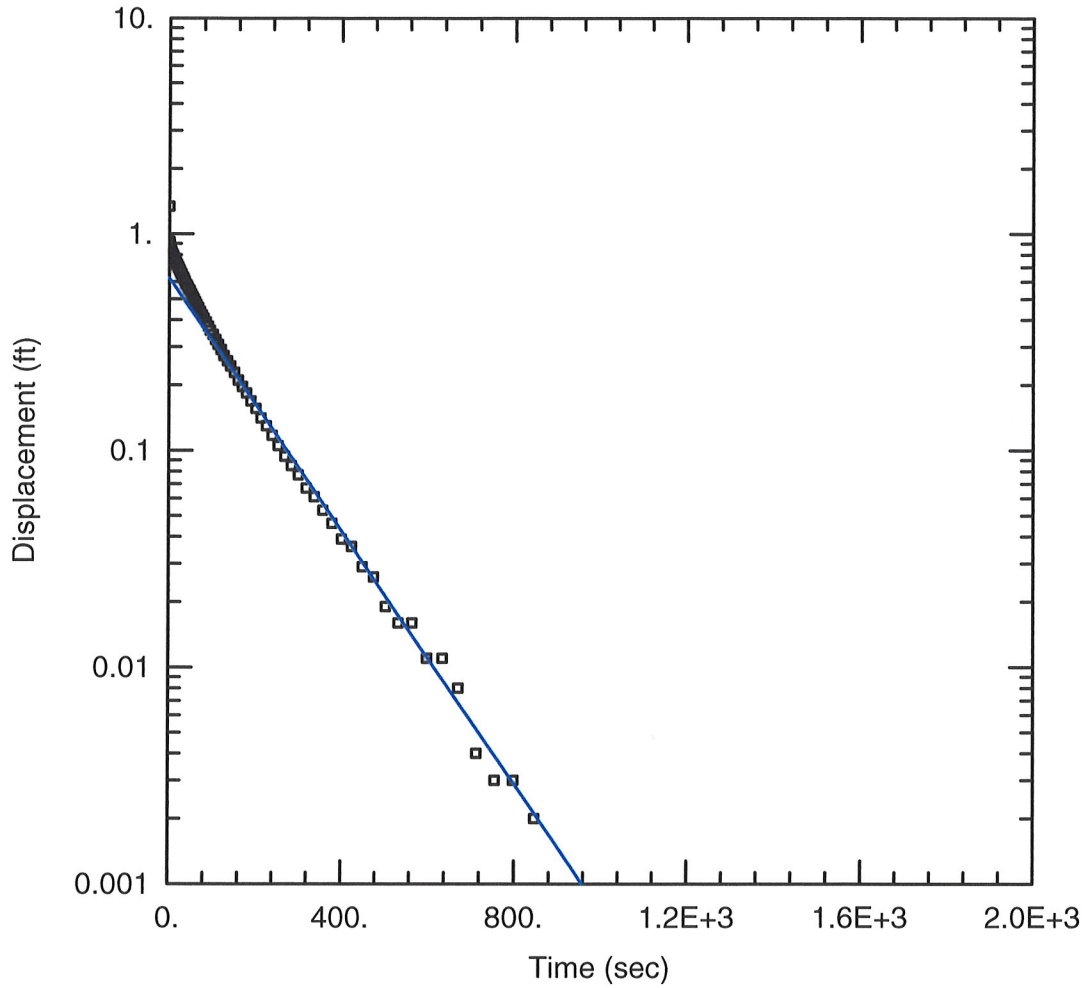






ATTACHMENT 1

Supporting Documentation for Piezometer GT-10-1 Slug Testing



GT10-01 SLUG-IN

Data Set: M:\Projects\WM\Riverbend\04215015.00 Pump Test 2015\GT10-01 Slug-In.aqt
Date: 07/16/15 Time: 08:59:39

PROJECT INFORMATION

Company: SCS Engineers
Client: Waste Management
Project: 04215015.00
Location: McMinnville, OR
Test Well: GT10-01
Test Date: July 15, 2015

AQUIFER DATA

Saturated Thickness: 16. ft Anisotropy Ratio (Kz/Kr): 1.

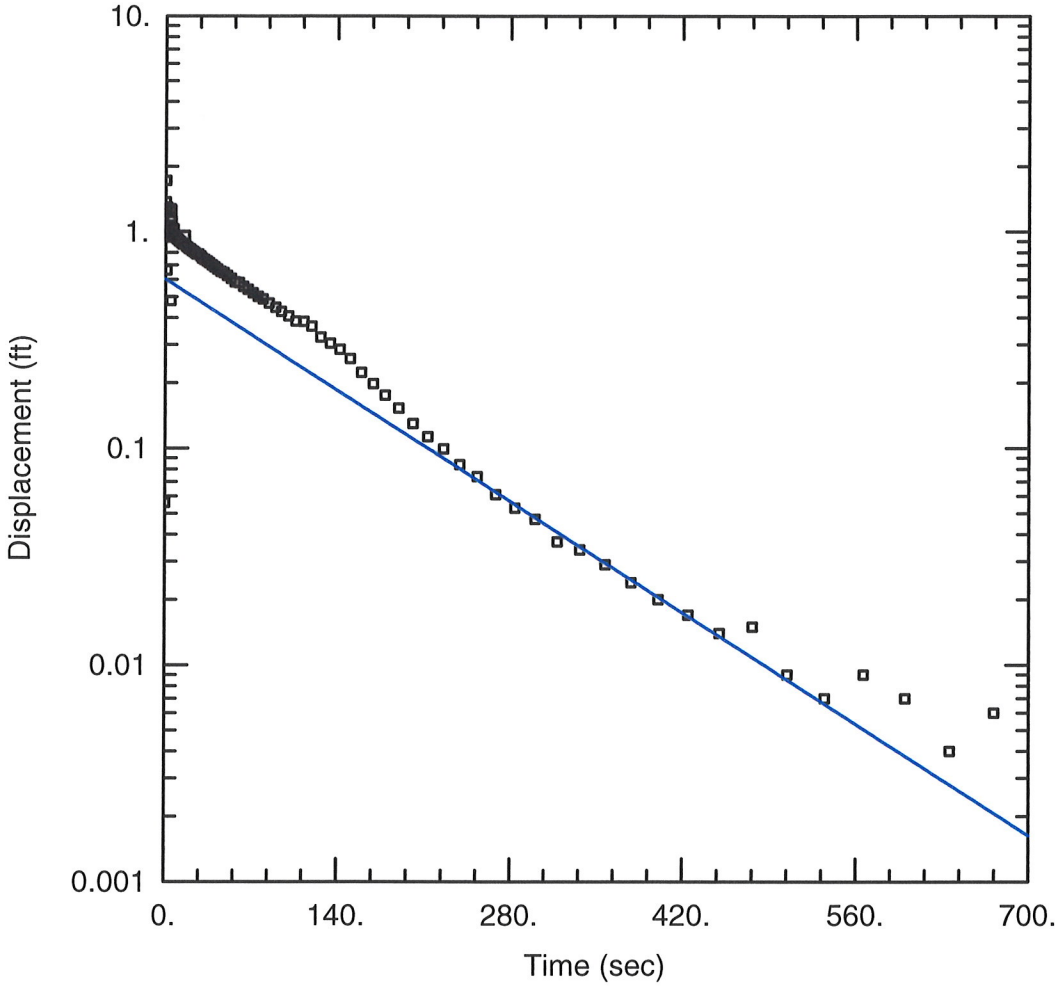
WELL DATA (G!10-01)

Initial Displacement: 1.338 ft Static Water Column Height: 16. ft
Total Well Penetration Depth: 11. ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0001792 cm/sec y0 = 0.6236 ft



GT10-01 SLUG-OUT

Data Set: M:\Projects\WM\Riverbend\04215015.00 Pump Test 2015\GT10-01 Slug-Out.aqt
Date: 07/16/15 Time: 09:07:07

PROJECT INFORMATION

Company: SCS Engineers
Client: Waste Management
Project: 04215015.00
Location: McMinnville, OR
Test Well: GT10-01
Test Date: July 15, 2015

AQUIFER DATA

Saturated Thickness: 16. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (G!10-01)

Initial Displacement: 1.725 ft
Total Well Penetration Depth: 11. ft
Casing Radius: 0.083 ft
Static Water Column Height: 16. ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0002252 cm/sec
y0 = 0.6026 ft

Report Date:	7/10/2015 11:46
Report User Name:	3367tml
Report Computer Name:	01POR-TANDREWS
Application:	WinSitu.exe
Application Version:	5.6.25.0

Log File Properties

File Name	GT10-1 SLUG_2015-07-10_11-46-48-411.wsl
Create Date	7/10/2015 11:46

Device Properties

Device	Level TROLL 700		
Site	Default Site		
Device Name			
Serial Number	169845		
Firmware Version	2.09		
Hardware Version	3		
Device Address	6		
Device Comm Cfg	19200	8 None	1
Used Memory	3		
Used Battery	42		

Log Configuration

Log Name	GT10-1 SLUG
Created By	3367tml
Computer Name	01POR-TANDREWS
Application	WinSitu.exe
Application Version	5.6.25.0
Create Date	7/10/2015 11:33:55 AM Pacific Daylight Time
Log Setup Time Zone	Pacific Daylight Time
Notes Size(bytes)	4096
Overwrite when full	Disabled
Scheduled Start Time	Manual Start
Scheduled Stop Time	No Stop Time
Type	True Logarithmic
Max Interval	Days: 6 hrs: 00 mins: 00 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode	Level Depth To Water
Specific Gravity	0.999
Level Reference Mode:	Set new reference
Level Reference Value:	0 (ft)
Level Reference Head Pressure	3.99252 (PSI)

Other Log Settings

Depth of Probe:	9.21541 (ft)
Head Pressure:	3.99114 (PSI)
Temperature:	12.2508 (C)

Log Notes:

Date and Time	Note
7/10/2015 11:34	Used Battery: 42% Used Memory: 4% User Name: 3367tml

7/10/2015 11:34 Manual Start Command
7/10/2015 11:46 Used Battery: 42% Used Memory: 4% User Name: 3367tml
7/10/2015 11:46 Manual Stop Command

Log Data:
Record Count 107

Sensors 1

1 10169845
Pressure/Temp 15 PSIG (11m/35ft)

Time Zone: Pacific Daylight Time

Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 35ft SN#: 10169845 Level Depth To Water (ft)	Sensor: Pres(G) 35ft SN#: 10169845 Pressure (PSI)
7/10/2015 11:34	0	-0.022	4.002
7/10/2015 11:34	0.25	-0.056	4.017
7/10/2015 11:34	0.5	-1.37	4.586
7/10/2015 11:34	0.75	-1.725	4.74
7/10/2015 11:34	1	-1.283	4.548
7/10/2015 11:34	1.25	-0.662	4.279
7/10/2015 11:34	1.5	-1.296	4.554
7/10/2015 11:34	1.75	-1.026	4.437
7/10/2015 11:34	2	-1.069	4.455
7/10/2015 11:34	2.25	-0.995	4.424
7/10/2015 11:34	2.5	-1	4.426
7/10/2015 11:34	2.75	-1.017	4.433
7/10/2015 11:34	3.079	-1.008	4.429
7/10/2015 11:34	3.297	-1.011	4.43
7/10/2015 11:34	3.559	-1.013	4.431
7/10/2015 11:34	3.782	-1.034	4.441
7/10/2015 11:34	4.001	-1.122	4.478
7/10/2015 11:34	4.25	-1.27	4.543
7/10/2015 11:34	4.5	-0.48	4.201
7/10/2015 11:34	4.75	-1.253	4.535
7/10/2015 11:34	5	-1.122	4.478
7/10/2015 11:34	5.25	-0.968	4.412
7/10/2015 11:34	5.5	-0.983	4.418
7/10/2015 11:34	5.75	-0.963	4.41
7/10/2015 11:34	6	-0.958	4.408
7/10/2015 11:34	6.36	-0.955	4.406
7/10/2015 11:34	6.72	-1.03	4.438
7/10/2015 11:34	7.14	-0.973	4.414
7/10/2015 11:34	7.56	-0.951	4.405
7/10/2015 11:34	7.98	-0.945	4.402
7/10/2015 11:34	8.46	-0.936	4.398
7/10/2015 11:34	9	-0.931	4.396
7/10/2015 11:34	9.48	-0.922	4.392
7/10/2015 11:34	10.08	-0.919	4.391
7/10/2015 11:34	10.68	-0.912	4.388
7/10/2015 11:34	11.28	-0.902	4.383
7/10/2015 11:34	11.94	-0.898	4.382
7/10/2015 11:34	12.66	-0.892	4.379
7/10/2015 11:34	13.44	-0.884	4.376
7/10/2015 11:34	14.258	-0.874	4.371
7/10/2015 11:34	15.06	-0.877	4.372

7/10/2015 11:34	15.96	-0.957	4.407
7/10/2015 11:34	16.92	-0.853	4.362
7/10/2015 11:34	17.946	-0.844	4.358
7/10/2015 11:34	18.96	-0.832	4.353
7/10/2015 11:34	20.1	-0.829	4.352
7/10/2015 11:34	21.3	-0.816	4.346
7/10/2015 11:34	22.56	-0.808	4.342
7/10/2015 11:35	23.88	-0.797	4.338
7/10/2015 11:35	25.32	-0.787	4.333
7/10/2015 11:35	26.82	-0.785	4.332
7/10/2015 11:35	28.532	-0.77	4.326
7/10/2015 11:35	30.06	-0.752	4.318
7/10/2015 11:35	31.86	-0.742	4.314
7/10/2015 11:35	33.72	-0.729	4.308
7/10/2015 11:35	35.76	-0.717	4.303
7/10/2015 11:35	37.975	-0.701	4.296
7/10/2015 11:35	40.08	-0.686	4.29
7/10/2015 11:35	42.48	-0.67	4.283
7/10/2015 11:35	45	-0.653	4.275
7/10/2015 11:35	47.64	-0.645	4.272
7/10/2015 11:35	50.46	-0.626	4.264
7/10/2015 11:35	53.554	-0.607	4.255
7/10/2015 11:35	56.64	-0.585	4.246
7/10/2015 11:35	60	-0.581	4.244
7/10/2015 11:35	63.6	-0.557	4.234
7/10/2015 11:35	67.199	-0.54	4.226
7/10/2015 11:35	71.4	-0.52	4.218
7/10/2015 11:35	75.6	-0.502	4.21
7/10/2015 11:35	79.8	-0.487	4.203
7/10/2015 11:36	84.6	-0.466	4.194
7/10/2015 11:36	90	-0.446	4.186
7/10/2015 11:36	94.8	-0.427	4.177
7/10/2015 11:36	100.8	-0.407	4.169
7/10/2015 11:36	106.8	-0.385	4.159
7/10/2015 11:36	112.8	-0.384	4.159
7/10/2015 11:36	119.399	-0.365	4.15
7/10/2015 11:36	126.6	-0.325	4.133
7/10/2015 11:36	134.399	-0.305	4.125
7/10/2015 11:36	142.199	-0.285	4.116
7/10/2015 11:37	150.6	-0.259	4.105
7/10/2015 11:37	159.6	-0.223	4.089
7/10/2015 11:37	169.199	-0.198	4.078
7/10/2015 11:37	178.8	-0.175	4.068
7/10/2015 11:37	189.6	-0.153	4.059
7/10/2015 11:37	201	-0.13	4.049
7/10/2015 11:38	213	-0.113	4.041
7/10/2015 11:38	225.6	-0.099	4.036
7/10/2015 11:38	238.84	-0.084	4.029
7/10/2015 11:38	253.289	-0.074	4.024
7/10/2015 11:39	268.311	-0.061	4.019
7/10/2015 11:39	283.905	-0.053	4.016
7/10/2015 11:39	300.6	-0.047	4.013
7/10/2015 11:39	318.673	-0.037	4.009
7/10/2015 11:40	337.199	-0.034	4.007
7/10/2015 11:40	357.6	-0.029	4.005
7/10/2015 11:40	378.761	-0.024	4.003
7/10/2015 11:41	400.799	-0.02	4.001
7/10/2015 11:41	424.799	-0.017	4

7/10/2015 11:42	450	-0.014	3.999
7/10/2015 11:42	476.399	-0.015	3.999
7/10/2015 11:43	504.6	-0.009	3.996
7/10/2015 11:43	534.6	-0.007	3.996
7/10/2015 11:44	566.399	-0.009	3.996
7/10/2015 11:44	599.999	-0.007	3.996
7/10/2015 11:45	635.999	-0.004	3.994
7/10/2015 11:45	671.999	-0.006	3.995

Report Date:	7/10/2015 12:12
Report User Name:	3367tml
Report Computer Name:	01POR-TANDREWS
Application:	WinSitu.exe
Application Version:	5.6.25.0

Log File Properties

File Name	GT10-1 Slug out_2015-07-10_12-12-29-924.wsl
Create Date	7/10/2015 12:12

Device Properties

Device	Level TROLL 700		
Site	GT10-1		
Device Name			
Serial Number	169845		
Firmware Version	2.09		
Hardware Version	3		
Device Address	6		
Device Comm Cfg	19200	8 None	1
Used Memory	4		
Used Battery	42		

Log Configuration

Log Name	GT10-1 Slug out
Created By	3367tml
Computer Name	01POR-TANDREWS
Application	WinSitu.exe
Application Version	5.6.25.0
Create Date	7/10/2015 11:49:51 AM Pacific Daylight Time
Log Setup Time Zone	Pacific Daylight Time
Notes Size(bytes)	4096
Overwrite when full	Disabled
Scheduled Start Time	Manual Start
Scheduled Stop Time	No Stop Time
Type	True Logarithmic
Max Interval	Days: 6 hrs: 00 mins: 00 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode	Level Depth To Water
Specific Gravity	0.999
Level Reference Mode:	Set new reference
Level Reference Value:	0 (ft)
Level Reference Head Pressure	3.98998 (PSI)

Other Log Settings

Depth of Probe:	9.21514 (ft)
Head Pressure:	3.99102 (PSI)
Temperature:	11.9114 (C)

Log Notes:

Date and Time	Note
7/10/2015 11:50	Used Battery: 42% Used Memory: 6% User Name: 3367tml

7/10/2015 11:50 Manual Start Command
7/10/2015 12:11 Used Battery: 42% Used Memory: 6% User Name: 3367tml
7/10/2015 12:11 Manual Stop Command

Log Data:
Record Count 118

Sensors 1

1 10169845
Pressure/Temp 15 PSIG (11m/35ft)

Time Zone: Pacific Daylight Time

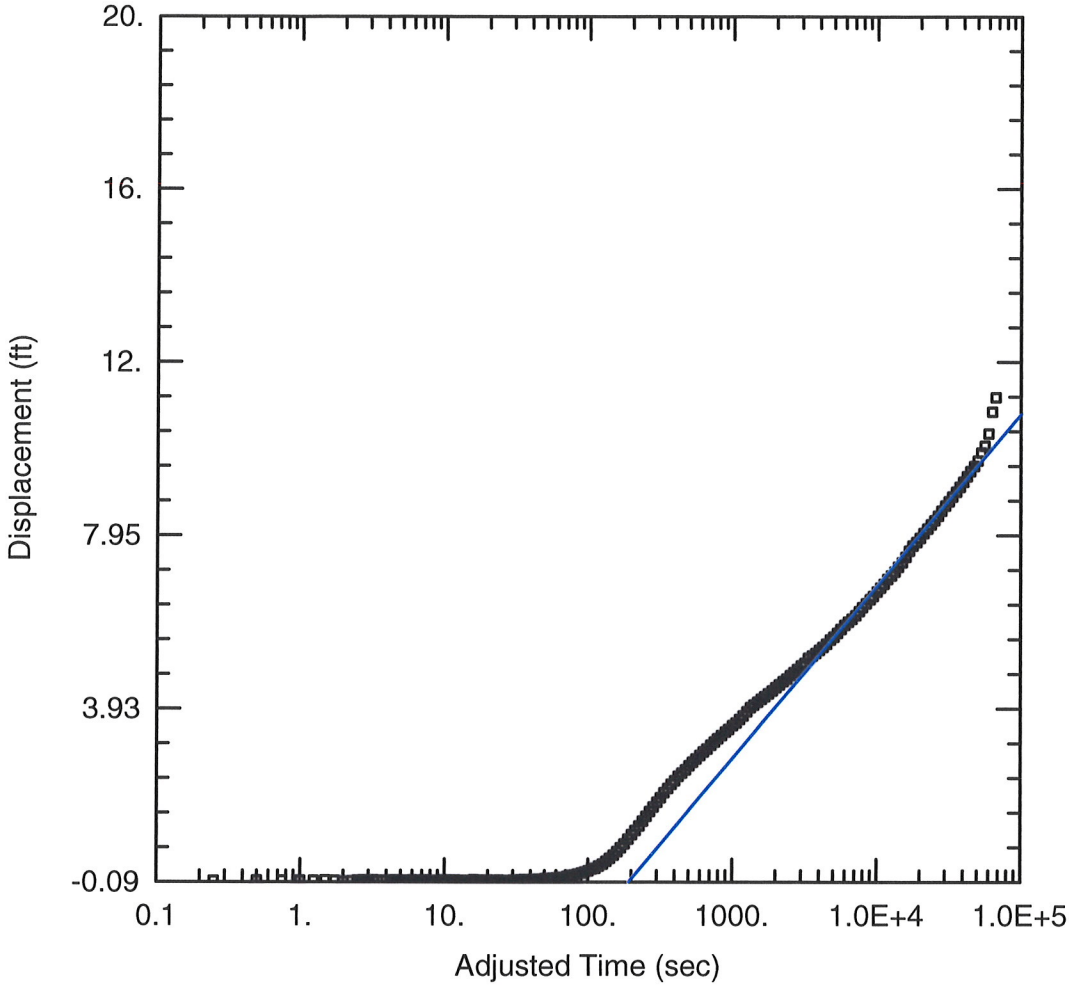
Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 35ft SN#: 10169845 Level Depth To Water (ft)	Sensor: Pres(G) 35ft SN#: 10169845 Pressure (PSI)
7/10/2015 11:50	0	0.616	3.723
7/10/2015 11:50	0.251	1.338	3.41
7/10/2015 11:50	0.584	0.894	3.603
7/10/2015 11:50	0.803	0.906	3.598
7/10/2015 11:50	1.026	0.921	3.591
7/10/2015 11:50	1.329	0.911	3.595
7/10/2015 11:50	1.548	0.896	3.602
7/10/2015 11:50	1.767	0.896	3.602
7/10/2015 11:50	2.001	0.884	3.607
7/10/2015 11:50	2.251	0.879	3.609
7/10/2015 11:50	2.501	0.872	3.612
7/10/2015 11:50	2.751	0.865	3.615
7/10/2015 11:50	3.001	0.863	3.616
7/10/2015 11:50	3.251	0.853	3.62
7/10/2015 11:50	3.501	0.856	3.619
7/10/2015 11:50	3.751	0.848	3.622
7/10/2015 11:50	4.001	0.846	3.624
7/10/2015 11:50	4.251	0.841	3.626
7/10/2015 11:50	4.501	0.837	3.627
7/10/2015 11:50	4.751	0.835	3.628
7/10/2015 11:50	5.001	0.832	3.63
7/10/2015 11:50	5.251	0.829	3.631
7/10/2015 11:50	5.501	0.824	3.633
7/10/2015 11:50	5.751	0.823	3.634
7/10/2015 11:50	6.001	0.817	3.636
7/10/2015 11:50	6.36	0.816	3.637
7/10/2015 11:50	6.721	0.811	3.639
7/10/2015 11:50	7.14	0.809	3.64
7/10/2015 11:50	7.56	0.803	3.642
7/10/2015 11:50	7.98	0.801	3.643
7/10/2015 11:50	8.461	0.795	3.646
7/10/2015 11:50	9	0.791	3.647
7/10/2015 11:50	9.48	0.785	3.65
7/10/2015 11:50	10.234	0.779	3.653
7/10/2015 11:50	10.681	0.777	3.654
7/10/2015 11:50	11.28	0.771	3.656
7/10/2015 11:50	11.94	0.768	3.657
7/10/2015 11:50	12.66	0.759	3.661
7/10/2015 11:50	13.44	0.754	3.663
7/10/2015 11:50	14.22	0.751	3.665
7/10/2015 11:50	15.06	0.742	3.669

7/10/2015 11:50	15.96	0.735	3.672
7/10/2015 11:50	16.92	0.725	3.676
7/10/2015 11:50	17.88	0.721	3.678
7/10/2015 11:50	18.96	0.713	3.681
7/10/2015 11:50	20.1	0.704	3.685
7/10/2015 11:50	21.3	0.698	3.687
7/10/2015 11:50	22.56	0.688	3.692
7/10/2015 11:50	23.88	0.678	3.696
7/10/2015 11:50	25.32	0.667	3.701
7/10/2015 11:50	26.82	0.659	3.705
7/10/2015 11:50	28.38	0.651	3.708
7/10/2015 11:50	30.06	0.637	3.714
7/10/2015 11:51	31.86	0.628	3.718
7/10/2015 11:51	33.72	0.62	3.722
7/10/2015 11:51	35.76	0.604	3.728
7/10/2015 11:51	37.86	0.587	3.736
7/10/2015 11:51	40.08	0.581	3.738
7/10/2015 11:51	42.48	0.568	3.744
7/10/2015 11:51	45	0.555	3.749
7/10/2015 11:51	47.64	0.545	3.754
7/10/2015 11:51	50.46	0.528	3.761
7/10/2015 11:51	53.46	0.513	3.768
7/10/2015 11:51	56.83	0.499	3.774
7/10/2015 11:51	60	0.484	3.78
7/10/2015 11:51	63.6	0.469	3.787
7/10/2015 11:51	67.2	0.456	3.793
7/10/2015 11:51	71.554	0.438	3.8
7/10/2015 11:51	75.6	0.421	3.808
7/10/2015 11:51	79.8	0.407	3.814
7/10/2015 11:51	84.6	0.391	3.821
7/10/2015 11:51	90	0.374	3.828
7/10/2015 11:52	94.8	0.357	3.835
7/10/2015 11:52	100.8	0.342	3.842
7/10/2015 11:52	106.888	0.324	3.85
7/10/2015 11:52	112.8	0.308	3.857
7/10/2015 11:52	119.4	0.291	3.864
7/10/2015 11:52	126.635	0.273	3.872
7/10/2015 11:52	134.4	0.259	3.878
7/10/2015 11:52	142.2	0.245	3.884
7/10/2015 11:52	150.6	0.229	3.891
7/10/2015 11:53	159.6	0.211	3.899
7/10/2015 11:53	169.2	0.197	3.905
7/10/2015 11:53	178.8	0.184	3.91
7/10/2015 11:53	189.6	0.169	3.917
7/10/2015 11:53	201	0.156	3.922
7/10/2015 11:54	213	0.141	3.929
7/10/2015 11:54	225.6	0.13	3.934
7/10/2015 11:54	238.8	0.117	3.939
7/10/2015 11:54	253.2	0.105	3.944
7/10/2015 11:54	268.2	0.094	3.949
7/10/2015 11:55	283.8	0.085	3.953
7/10/2015 11:55	300.6	0.077	3.957
7/10/2015 11:55	318.6	0.067	3.961
7/10/2015 11:56	337.202	0.061	3.964
7/10/2015 11:56	357.6	0.053	3.967
7/10/2015 11:56	378.6	0.046	3.97
7/10/2015 11:57	400.8	0.039	3.973
7/10/2015 11:57	424.8	0.036	3.974

7/10/2015 11:57	450	0.029	3.978
7/10/2015 11:58	476.4	0.026	3.979
7/10/2015 11:58	504.6	0.019	3.982
7/10/2015 11:59	534.6	0.016	3.983
7/10/2015 11:59	566.4	0.016	3.983
7/10/2015 12:00	600	0.011	3.985
7/10/2015 12:01	636	0.011	3.985
7/10/2015 12:01	672	0.008	3.986
7/10/2015 12:02	714	0.004	3.988
7/10/2015 12:03	756	0.003	3.989
7/10/2015 12:03	798.189	0.003	3.989
7/10/2015 12:04	846	0.002	3.989
7/10/2015 12:05	900	-0.001	3.99
7/10/2015 12:06	948.125	0	3.99
7/10/2015 12:07	1008	-0.003	3.991
7/10/2015 12:08	1068.012	-0.003	3.991
7/10/2015 12:09	1128.099	-0.004	3.992
7/10/2015 12:10	1194	-0.004	3.992
7/10/2015 12:11	1266	-0.006	3.993

ATTACHMENT 2

Supporting Documentation for Production Well PW-1 Pumping Tests



CONSTANT RATE TEST-PW-1 PUMPING WELL DRAWDOWN ANALYSIS

Data Set: M:\Projects\WM\Riverbend\04215015.00 Pump Test 2015\PW-1 Drawdown.aqt
Date: 07/15/15 Time: 16:32:52

PROJECT INFORMATION

Company: SCS Engineers
Client: Waste Management
Project: 04215015.00
Location: McMinnville, OR
Test Well: PW-1
Test Date: July 10, 2015

AQUIFER DATA

Saturated Thickness: 30. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
PW-1	0	0

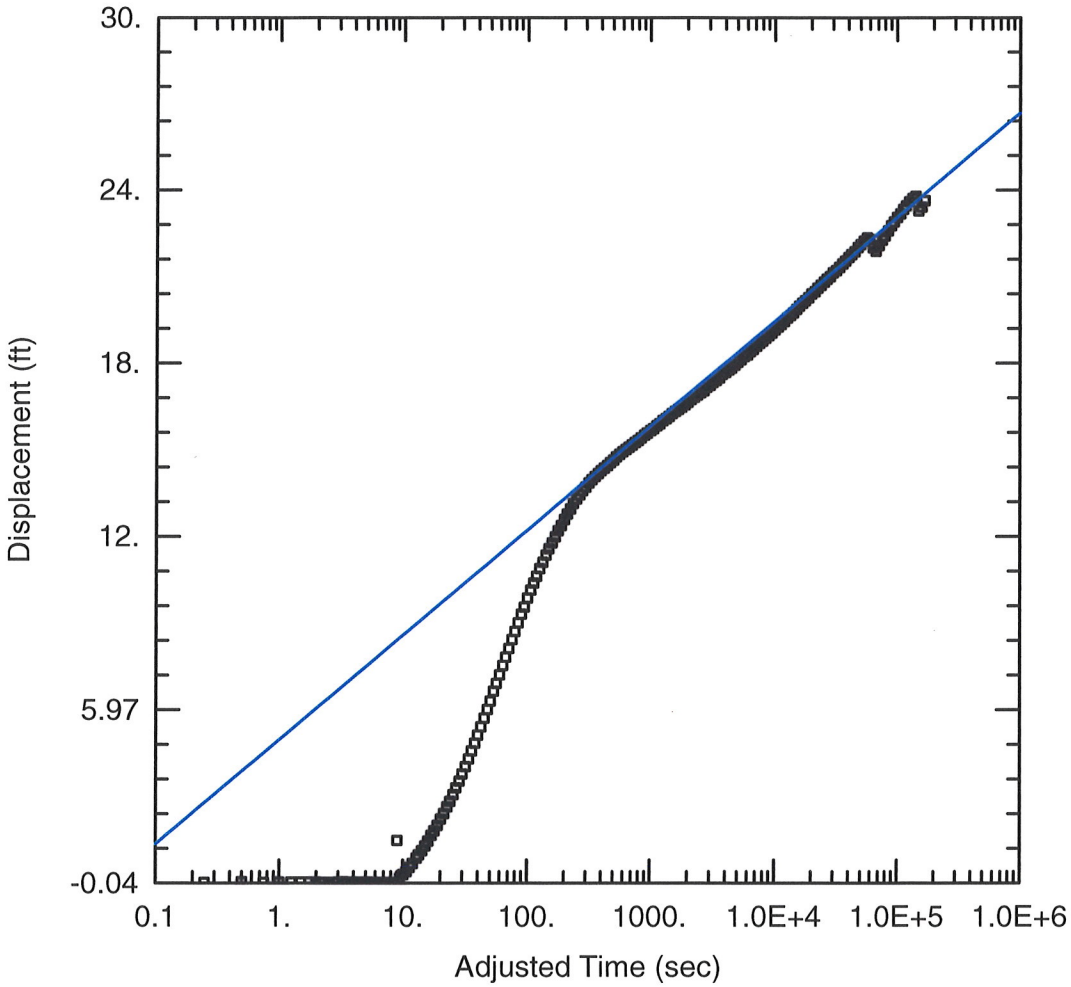
Observation Wells

Well Name	X (ft)	Y (ft)
▫ PW-1	0	0

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 1.904 cm^2/sec S = 4.357



CONSTANT RATE TEST-PW-1 PUMPING WELL RECOVERY ANALYSIS

Data Set: M:\Projects\WM\Riverbend\04215015.00 Pump Test 2015\PW-1 Recovery.aqt
Date: 07/16/15 Time: 07:28:21

PROJECT INFORMATION

Company: SCS Engineers
Client: Waste Management
Project: 04215015.00
Location: McMinnville, OR
Test Well: PW-1
Test Date: July 10, 2015

AQUIFER DATA

Saturated Thickness: 30. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
PW-1	0	0

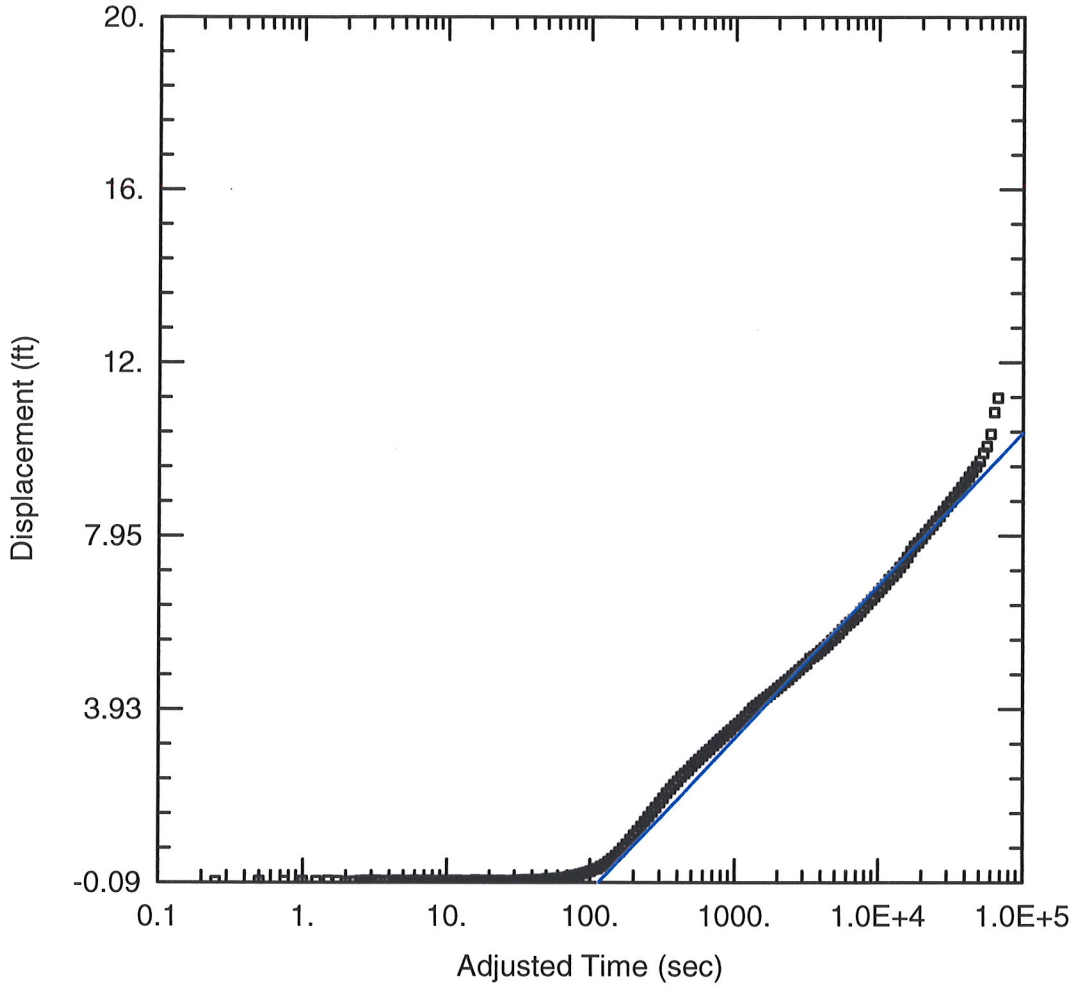
Observation Wells

Well Name	X (ft)	Y (ft)
▫ PW-1	0	0

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 2.095 cm^2/sec S = 0.001038



CONSTANT RATE TEST--MW-1A DRAWDOWN ANALYSIS

Data Set: M:\Projects\WM\Riverbend\04215015.00 Pump Test 2015\MW-1A-2.aqt
Date: 07/15/15 Time: 16:34:12

PROJECT INFORMATION

Company: SCS Engineers
Client: Waste Management
Project: 04215015.00
Location: McMinnville, OR
Test Well: PW-1
Test Date: July 10, 2015

AQUIFER DATA

Saturated Thickness: 30. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
PW-1	0	0

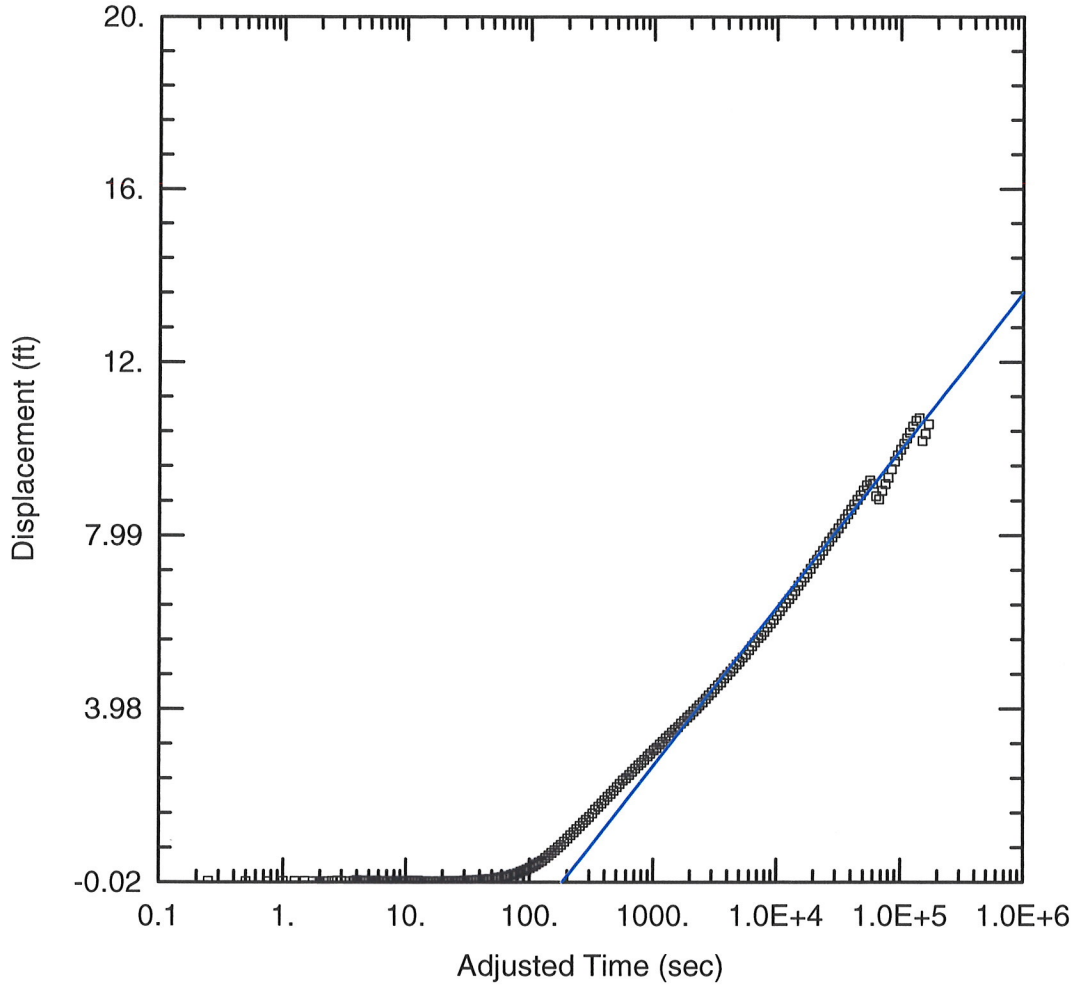
Observation Wells

Well Name	X (ft)	Y (ft)
▫ MW-1A	55	0

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 2.146 cm^2/sec S = 0.0002058



CONSTANT RATE TEST--MW-1A RECOVERY ANALYSIS

Data Set: M:\Projects\WM\Riverbend\04215015.00 Pump Test 2015\MW-1A-Rec.aqt
Date: 07/15/15 Time: 16:33:40

PROJECT INFORMATION

Company: SCS Engineers
Client: Waste Management
Project: 04215015.00
Location: McMinnville, OR
Test Well: PW-1
Test Date: July 10, 2015

AQUIFER DATA

Saturated Thickness: 30. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
PW-1	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
▫ MW-1A	55	0

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 2.086 cm^2/sec S = 0.000306

Report Date:	7/7/2015 9:00
Report User Name:	3698bjm
Report Computer Name:	BEL-BMCMULLEN
Application:	WinSitu.exe
Application Version:	5.6.25.0

Log File Properties

File Name	PW-1_Append_2015-07-07_08-56-25-412.wsl
Create Date	7/7/2015 8:56

Device Properties

Device	Level TROLL 700	
Site	PW-1	
Device Name		
Serial Number	370172	
Firmware Version	2.09	
Hardware Version	3	
Device Address	2	
Device Comm Cfg	19200	8
	None	1 (Modbus-ASCII)
Used Memory	0	
Used Battery	7	

Log Configuration

Log Name	PW-1
Created By	3266d_l
Computer Name	04POR-LAMADRID
Application	WinSitu.exe
Application Version	5.6.25.0
Create Date	7/6/2015 10:46:18 AM Pacific Daylight Time
Log Setup Time Zone	Pacific Daylight Time
Notes Size(bytes)	4096
Overwrite when full	Disabled
Scheduled Start Time	Manual Start
Scheduled Stop Time	No Stop Time
Type	True Logarithmic
Max Interval	Days: 1 hrs: 00 mins: 10 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode	Level Depth To Water
Specific Gravity	0.999
Level Reference Mode:	Set first logged value to offset
Level Reference Offset:	0 (ft)

Other Log Settings

Depth of Probe:	54.4256 (ft)
Head Pressure:	23.5714 (PSI)
Temperature:	13.2039 (C)

Log Notes:

Date and Time	Note
7/6/2015 10:46	Used Battery: 7% Used Memory: 1% User Name: 3266d_l

7/6/2015 10:47	Manual Start Command	
7/6/2015 11:36	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3266d_l
7/6/2015 11:45	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3266d_l
7/6/2015 11:58	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3266d_l
7/6/2015 12:26	Restart Command	
7/6/2015 12:41	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3266d_l
7/6/2015 13:14	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3266d_l
7/6/2015 13:52	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3698bjm
7/6/2015 13:53	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3698bjm
7/6/2015 14:07	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3266d_l
7/6/2015 14:28	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3266d_l
7/6/2015 14:36	Restart Command	
7/6/2015 14:44	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3266d_l
7/6/2015 14:56	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3266d_l
7/6/2015 15:17	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3266d_l
7/6/2015 15:36	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3266d_l
7/6/2015 16:41	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3698bjm
7/6/2015 16:47	Restart Command	
7/6/2015 16:58	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3698bjm
7/6/2015 17:02	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3698bjm
7/6/2015 17:53	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3698bjm
7/6/2015 18:29	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3698bjm
7/6/2015 18:46	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3698bjm
7/6/2015 19:00	Restart Command	
7/6/2015 19:04	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3698bjm
7/7/2015 8:55	Log Download - Used Battery: 7% Used Memory: 1%	User Name: 3698bjm

Log Data:

Record Count		772	
Sensors		1	
	1	10370172	Pressure/Temp 100 PSIG (70m/231ft)

Time Zone: Pacific Daylight Time

Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 231ft SN#: 10370172 Level Depth To Water (ft)	Sensor: Pres(G) 231ft SN#: 10370172 Pressure (PSI)
7/6/2015 10:47	0	0	23.538
7/6/2015 10:47	0.279	0.135	23.48
7/6/2015 10:47	0.496	0.156	23.471
7/6/2015 10:47	0.75	0.214	23.445
7/6/2015 10:47	1	0.274	23.419
7/6/2015 10:47	1.25	0.312	23.403
7/6/2015 10:47	1.503	0.331	23.395
7/6/2015 10:47	1.761	0.405	23.363
7/6/2015 10:47	2	0.467	23.336
7/6/2015 10:47	2.25	0.518	23.314
7/6/2015 10:47	2.5	0.566	23.293
7/6/2015 10:47	2.75	0.605	23.276
7/6/2015 10:47	3	0.658	23.253
7/6/2015 10:47	3.25	0.715	23.228
7/6/2015 10:47	3.5	0.767	23.206
7/6/2015 10:47	3.75	0.801	23.191
7/6/2015 10:47	4	0.851	23.17
7/6/2015 10:47	4.25	0.888	23.154

7/6/2015 10:47	4.5	0.945	23.129
7/6/2015 10:47	4.75	0.98	23.114
7/6/2015 10:47	5	1.031	23.092
7/6/2015 10:47	5.25	1.076	23.072
7/6/2015 10:47	5.5	1.116	23.055
7/6/2015 10:48	5.75	0.549	23.3
7/6/2015 10:48	6	0.817	23.184
7/6/2015 10:48	6.36	1.238	23.002
7/6/2015 10:48	6.72	1.213	23.013
7/6/2015 10:48	7.14	1.232	23.004
7/6/2015 10:48	7.561	1.154	23.038
7/6/2015 10:48	7.98	1.259	22.993
7/6/2015 10:48	8.46	1.272	22.987
7/6/2015 10:48	9	1.298	22.976
7/6/2015 10:48	9.48	1.294	22.978
7/6/2015 10:48	10.08	1.319	22.967
7/6/2015 10:48	10.68	1.346	22.955
7/6/2015 10:48	11.28	1.331	22.961
7/6/2015 10:48	11.94	1.336	22.96
7/6/2015 10:48	12.66	1.364	22.947
7/6/2015 10:48	13.44	1.362	22.948
7/6/2015 10:48	14.22	1.37	22.945
7/6/2015 10:48	15.061	1.399	22.932
7/6/2015 10:48	15.96	1.406	22.929
7/6/2015 10:48	16.92	1.423	22.922
7/6/2015 10:48	17.88	1.421	22.923
7/6/2015 10:48	18.96	1.458	22.907
7/6/2015 10:48	20.1	1.462	22.905
7/6/2015 10:48	21.3	1.474	22.9
7/6/2015 10:48	22.561	1.494	22.891
7/6/2015 10:48	23.88	1.505	22.886
7/6/2015 10:48	25.32	1.536	22.873
7/6/2015 10:48	26.82	1.547	22.868
7/6/2015 10:48	28.38	1.564	22.861
7/6/2015 10:48	30.061	1.599	22.846
7/6/2015 10:48	31.86	1.609	22.841
7/6/2015 10:48	33.72	1.636	22.829
7/6/2015 10:48	35.76	1.665	22.817
7/6/2015 10:48	37.86	1.686	22.808
7/6/2015 10:48	40.08	1.71	22.798
7/6/2015 10:48	42.48	1.726	22.791
7/6/2015 10:48	45	1.757	22.777
7/6/2015 10:48	47.64	1.718	22.794
7/6/2015 10:48	50.46	1.781	22.767
7/6/2015 10:48	53.46	1.757	22.777
7/6/2015 10:48	56.64	1.745	22.782
7/6/2015 10:48	60	1.72	22.793
7/6/2015 10:48	63.6	1.686	22.808
7/6/2015 10:49	67.2	1.671	22.814
7/6/2015 10:49	71.4	1.643	22.826
7/6/2015 10:49	75.6	1.575	22.856
7/6/2015 10:49	79.8	1.623	22.835
7/6/2015 10:49	84.6	1.68	22.811
7/6/2015 10:49	90	1.736	22.786
7/6/2015 10:49	94.8	1.798	22.759
7/6/2015 10:49	100.8	1.875	22.726
7/6/2015 10:49	106.8	1.907	22.712
7/6/2015 10:49	112.8	1.93	22.702

7/6/2015 10:49	119.4	1.975	22.683
7/6/2015 10:50	126.6	1.997	22.673
7/6/2015 10:50	134.4	2.011	22.667
7/6/2015 10:50	142.2	2.038	22.655
7/6/2015 10:50	150.6	2.053	22.649
7/6/2015 10:50	159.6	2.058	22.647
7/6/2015 10:50	169.2	2.077	22.639
7/6/2015 10:50	178.8	2.1	22.629
7/6/2015 10:51	189.6	2.128	22.616
7/6/2015 10:51	201	2.137	22.612
7/6/2015 10:51	213	2.142	22.61
7/6/2015 10:51	225.6	2.161	22.602
7/6/2015 10:51	238.8	2.15	22.607
7/6/2015 10:52	253.2	2.232	22.571
7/6/2015 10:52	268.2	2.29	22.546
7/6/2015 10:52	283.8	2.307	22.539
7/6/2015 10:52	300.6	2.323	22.532
7/6/2015 10:53	318.6	2.337	22.526
7/6/2015 10:53	337.2	2.356	22.518
7/6/2015 10:53	357.6	2.37	22.511
7/6/2015 10:54	378.6	2.369	22.512
7/6/2015 10:54	400.8	2.373	22.51
7/6/2015 10:54	424.8	2.38	22.507
7/6/2015 10:55	450	2.375	22.51
7/6/2015 10:55	476.4	2.351	22.52
7/6/2015 10:56	504.6	2.36	22.516
7/6/2015 10:56	534.6	2.352	22.519
7/6/2015 10:57	566.4	2.357	22.517
7/6/2015 10:57	600	2.358	22.517
7/6/2015 10:58	636	2.355	22.518
7/6/2015 10:59	672	2.358	22.517
7/6/2015 10:59	714	2.335	22.527
7/6/2015 11:00	756	2.343	22.523
7/6/2015 11:01	798	2.338	22.526
7/6/2015 11:02	846	2.318	22.534
7/6/2015 11:02	900	2.33	22.529
7/6/2015 11:03	948	2.317	22.535
7/6/2015 11:04	1008	2.326	22.531
7/6/2015 11:05	1068	2.334	22.527
7/6/2015 11:06	1128	2.393	22.502
7/6/2015 11:07	1194	2.429	22.486
7/6/2015 11:09	1266	2.77	22.338
7/6/2015 11:10	1344	3.016	22.232
7/6/2015 11:11	1422	3.115	22.189
7/6/2015 11:13	1506	3.127	22.184
7/6/2015 11:14	1596	3.083	22.203
7/6/2015 11:16	1692	3.1	22.195
7/6/2015 11:17	1788	3.091	22.199
7/6/2015 11:19	1896	3.117	22.188
7/6/2015 11:21	2010	3.124	22.185
7/6/2015 11:23	2130	3.145	22.176
7/6/2015 11:25	2256	3.156	22.171
7/6/2015 11:27	2388	3.196	22.154
7/6/2015 11:30	2532	3.185	22.159
7/6/2015 11:32	2682	3.201	22.152
7/6/2015 11:35	2838.11	3.226	22.141
7/6/2015 11:38	3006	3.205	22.15
7/6/2015 11:41	3186	3.232	22.138

7/6/2015 11:44	3372	3.17	22.165
7/6/2015 11:47	3576	3.181	22.161
7/6/2015 11:51	3786	3.228	22.14
7/6/2015 11:54	4008	3.229	22.139
7/6/2015 11:58	4248	3.232	22.138
7/6/2015 12:02	4500	3.262	22.125
7/6/2015 12:07	4764	3.239	22.135
7/6/2015 12:12	5046	3.246	22.132
7/6/2015 12:17	5346	3.26	22.126
7/6/2015 12:22	5664	3.284	22.116
7/6/2015 12:26	5907.261	3.278	22.118
7/6/2015 12:26	5907.512	3.287	22.114
7/6/2015 12:26	5907.794	3.253	22.129
7/6/2015 12:26	5908.014	3.274	22.12
7/6/2015 12:26	5908.262	3.286	22.115
7/6/2015 12:26	5908.512	3.274	22.12
7/6/2015 12:26	5908.862	3.292	22.112
7/6/2015 12:26	5909.082	3.277	22.119
7/6/2015 12:26	5909.503	3.29	22.113
7/6/2015 12:26	5909.926	3.263	22.125
7/6/2015 12:26	5910.145	3.291	22.113
7/6/2015 12:26	5910.363	3.273	22.121
7/6/2015 12:26	5910.581	3.286	22.115
7/6/2015 12:26	5910.799	3.28	22.118
7/6/2015 12:26	5911.017	3.276	22.119
7/6/2015 12:26	5911.236	3.274	22.12
7/6/2015 12:26	5911.454	3.28	22.117
7/6/2015 12:26	5911.673	3.27	22.122
7/6/2015 12:26	5911.892	3.28	22.117
7/6/2015 12:26	5912.111	3.276	22.119
7/6/2015 12:26	5912.329	3.28	22.117
7/6/2015 12:26	5912.548	3.294	22.112
7/6/2015 12:26	5912.767	3.281	22.117
7/6/2015 12:26	5913.012	3.291	22.113
7/6/2015 12:26	5913.262	3.288	22.114
7/6/2015 12:26	5913.735	3.285	22.115
7/6/2015 12:26	5914.159	3.284	22.116
7/6/2015 12:26	5914.583	3.29	22.113
7/6/2015 12:26	5914.822	3.282	22.117
7/6/2015 12:26	5915.242	3.297	22.11
7/6/2015 12:26	5915.722	3.295	22.111
7/6/2015 12:26	5916.262	3.288	22.114
7/6/2015 12:26	5916.742	3.872	21.861
7/6/2015 12:26	5917.342	3.409	22.062
7/6/2015 12:26	5917.942	3.529	22.01
7/6/2015 12:26	5918.542	3.63	21.966
7/6/2015 12:26	5919.202	3.728	21.923
7/6/2015 12:26	5919.922	3.847	21.872
7/6/2015 12:26	5920.702	3.994	21.808
7/6/2015 12:26	5921.482	4.115	21.756
7/6/2015 12:26	5922.322	4.235	21.704
7/6/2015 12:26	5923.222	4.366	21.647
7/6/2015 12:26	5924.305	4.51	21.585
7/6/2015 12:26	5925.142	4.626	21.534
7/6/2015 12:26	5926.222	4.778	21.468
7/6/2015 12:26	5927.362	4.92	21.407
7/6/2015 12:26	5928.562	5.088	21.334
7/6/2015 12:26	5929.822	5.23	21.273

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7/6/2015 12:26	5932.582	5.582	21.12
7/6/2015 12:26	5934.082	5.753	21.047
7/6/2015 12:26	5935.642	5.926	20.972
7/6/2015 12:26	5937.322	6.103	20.895
7/6/2015 12:26	5939.122	6.303	20.808
7/6/2015 12:26	5940.982	6.496	20.725
7/6/2015 12:26	5943.022	6.69	20.64
7/6/2015 12:26	5945.122	6.887	20.555
7/6/2015 12:27	5947.342	7.091	20.467
7/6/2015 12:27	5949.742	7.284	20.383
7/6/2015 12:27	5952.262	7.503	20.288
7/6/2015 12:27	5954.902	7.721	20.194
7/6/2015 12:27	5957.722	7.929	20.104
7/6/2015 12:27	5960.722	8.131	20.016
7/6/2015 12:27	5964.097	8.382	19.908
7/6/2015 12:27	5967.262	8.583	19.821
7/6/2015 12:27	5970.862	8.822	19.717
7/6/2015 12:27	5974.462	9.034	19.626
7/6/2015 12:27	5978.662	9.256	19.529
7/6/2015 12:27	5982.862	9.468	19.438
7/6/2015 12:27	5987.062	9.697	19.338
7/6/2015 12:27	5991.862	9.955	19.226
7/6/2015 12:27	5997.262	10.234	19.106
7/6/2015 12:27	6002.062	10.45	19.012
7/6/2015 12:28	6008.062	10.722	18.894
7/6/2015 12:28	6014.155	10.968	18.788
7/6/2015 12:28	6020.062	11.2	18.688
7/6/2015 12:28	6026.662	11.342	18.626
7/6/2015 12:28	6033.909	11.332	18.63
7/6/2015 12:28	6041.662	11.168	18.701
7/6/2015 12:28	6049.503	11.019	18.766
7/6/2015 12:28	6057.862	10.904	18.816
7/6/2015 12:29	6066.862	10.791	18.865
7/6/2015 12:29	6076.462	10.681	18.912
7/6/2015 12:29	6086.062	10.388	19.039
7/6/2015 12:29	6096.862	10.123	19.154
7/6/2015 12:29	6108.262	9.891	19.254
7/6/2015 12:29	6120.262	9.711	19.332
7/6/2015 12:30	6132.862	9.507	19.42
7/6/2015 12:30	6146.062	9.31	19.506
7/6/2015 12:30	6160.462	9.145	19.578
7/6/2015 12:30	6175.462	9.021	19.631
7/6/2015 12:31	6191.062	8.907	19.68
7/6/2015 12:31	6207.862	8.849	19.706
7/6/2015 12:31	6225.862	8.718	19.762
7/6/2015 12:31	6244.504	8.613	19.808
7/6/2015 12:32	6264.862	8.52	19.848
7/6/2015 12:32	6285.862	8.439	19.883
7/6/2015 12:33	6308.062	8.384	19.907
7/6/2015 12:33	6332.062	8.364	19.916
7/6/2015 12:33	6357.262	8.329	19.931
7/6/2015 12:34	6383.662	8.316	19.936
7/6/2015 12:34	6411.862	8.309	19.939
7/6/2015 12:35	6441.862	8.306	19.941
7/6/2015 12:35	6473.662	8.324	19.933
7/6/2015 12:36	6507.261	8.321	19.934
7/6/2015 12:36	6543.261	8.329	19.931

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7/6/2015 12:40	6753.261	8.429	19.888
7/6/2015 12:41	6807.261	8.425	19.889
7/6/2015 12:42	6855.261	8.444	19.881
7/6/2015 12:43	6915.261	8.467	19.871
7/6/2015 12:44	6975.261	8.506	19.854
7/6/2015 12:45	7035.261	8.51	19.852
7/6/2015 12:46	7101.261	8.549	19.835
7/6/2015 12:47	7173.261	8.754	19.747
7/6/2015 12:48	7251.261	8.9	19.684
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7/6/2015 12:51	7413.261	8.863	19.7
7/6/2015 12:52	7503.345	8.877	19.694
7/6/2015 12:54	7599.261	8.902	19.683
7/6/2015 12:56	7695.261	9.086	19.603
7/6/2015 12:57	7803.261	8.972	19.652
7/6/2015 12:59	7917.261	8.888	19.689
7/6/2015 13:01	8037.261	9.012	19.635
7/6/2015 13:03	8163.261	9.021	19.631
7/6/2015 13:06	8295.261	8.973	19.652
7/6/2015 13:08	8439.261	8.975	19.651
7/6/2015 13:11	8589.261	8.997	19.642
7/6/2015 13:13	8745.261	9.023	19.63
7/6/2015 13:16	8913.261	9.059	19.615
7/6/2015 13:19	9093.261	9.077	19.607
7/6/2015 13:22	9279.261	9.102	19.596
7/6/2015 13:25	9483.262	9.156	19.573
7/6/2015 13:29	9693.262	9.178	19.563
7/6/2015 13:33	9915.262	9.233	19.539
7/6/2015 13:37	10155.262	9.254	19.53
7/6/2015 13:41	10407.262	9.282	19.518
7/6/2015 13:45	10671.262	9.341	19.492
7/6/2015 13:50	10953.262	9.599	19.381
7/6/2015 13:55	11253.261	9.474	19.435
7/6/2015 14:00	11571.261	9.492	19.427
7/6/2015 14:06	11907.261	9.517	19.416
7/6/2015 14:12	12267.261	9.552	19.401
7/6/2015 14:18	12627.261	9.599	19.381
7/6/2015 14:25	13047.261	9.674	19.348
7/6/2015 14:32	13467.261	9.705	19.335
7/6/2015 14:36	13700.587	9.918	19.242
7/6/2015 14:36	13700.837	9.923	19.241
7/6/2015 14:36	13701.088	9.927	19.239
7/6/2015 14:36	13701.338	9.94	19.233
7/6/2015 14:36	13701.588	9.936	19.235
7/6/2015 14:36	13701.838	9.918	19.243
7/6/2015 14:36	13702.088	9.934	19.236
7/6/2015 14:36	13702.338	9.934	19.235
7/6/2015 14:36	13702.588	9.938	19.234
7/6/2015 14:36	13702.838	9.93	19.237
7/6/2015 14:36	13703.088	9.943	19.232
7/6/2015 14:36	13703.338	9.942	19.232
7/6/2015 14:36	13703.588	9.932	19.236
7/6/2015 14:36	13703.838	9.927	19.239
7/6/2015 14:36	13704.088	9.942	19.232

7/6/2015 14:36	13704.338	9.932	19.237
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7/6/2015 14:36	13704.838	9.938	19.234
7/6/2015 14:36	13705.088	9.942	19.232
7/6/2015 14:36	13705.338	9.922	19.241
7/6/2015 14:36	13705.588	9.939	19.234
7/6/2015 14:36	13705.838	9.946	19.23
7/6/2015 14:36	13706.088	9.938	19.234
7/6/2015 14:36	13706.338	9.948	19.229
7/6/2015 14:36	13706.588	9.942	19.232
7/6/2015 14:36	13706.948	9.952	19.228
7/6/2015 14:36	13707.308	9.94	19.233
7/6/2015 14:36	13707.728	9.95	19.229
7/6/2015 14:36	13708.148	9.948	19.23
7/6/2015 14:36	13708.568	9.96	19.224
7/6/2015 14:36	13709.048	9.946	19.23
7/6/2015 14:36	13709.588	9.934	19.235
7/6/2015 14:36	13710.068	9.962	19.224
7/6/2015 14:36	13710.668	9.946	19.231
7/6/2015 14:36	13711.268	9.944	19.231
7/6/2015 14:36	13711.868	9.941	19.233
7/6/2015 14:36	13712.528	9.95	19.229
7/6/2015 14:36	13713.248	9.942	19.232
7/6/2015 14:36	13714.028	9.938	19.234
7/6/2015 14:36	13714.808	9.937	19.234
7/6/2015 14:36	13715.648	9.943	19.232
7/6/2015 14:36	13716.548	9.935	19.235
7/6/2015 14:36	13717.508	9.931	19.237
7/6/2015 14:36	13718.468	9.932	19.236
7/6/2015 14:36	13719.548	9.923	19.241
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7/6/2015 14:36	13721.888	9.92	19.242
7/6/2015 14:36	13723.148	9.921	19.241
7/6/2015 14:36	13724.468	9.916	19.244
7/6/2015 14:36	13725.908	9.921	19.241
7/6/2015 14:36	13727.408	9.916	19.244
7/6/2015 14:36	13728.968	9.898	19.251
7/6/2015 14:36	13730.648	9.908	19.247
7/6/2015 14:36	13732.448	9.905	19.248
7/6/2015 14:36	13734.308	9.896	19.252
7/6/2015 14:36	13736.348	9.98	19.216
7/6/2015 14:36	13738.448	9.916	19.244
7/6/2015 14:36	13741.668	9.941	19.233
7/6/2015 14:36	13743.068	9.943	19.232
7/6/2015 14:36	13745.587	9.947	19.23
7/6/2015 14:37	13748.228	9.942	19.232
7/6/2015 14:37	13751.048	9.977	19.217
7/6/2015 14:37	13754.048	9.958	19.225
7/6/2015 14:37	13757.228	9.973	19.219
7/6/2015 14:37	13760.587	10.004	19.205
7/6/2015 14:37	13764.188	9.997	19.209
7/6/2015 14:37	13767.787	10.026	19.196
7/6/2015 14:37	13771.988	10.038	19.19
7/6/2015 14:37	13776.188	10.054	19.184
7/6/2015 14:37	13780.387	10.036	19.192
7/6/2015 14:37	13785.188	10.045	19.187
7/6/2015 14:37	13790.587	10.074	19.175
7/6/2015 14:37	13795.387	10.072	19.176

7/6/2015 14:37	13801.387	10.077	19.174
7/6/2015 14:38	13807.387	10.095	19.166
7/6/2015 14:38	13813.387	10.098	19.165
7/6/2015 14:38	13819.987	10.117	19.156
7/6/2015 14:38	13827.188	10.128	19.152
7/6/2015 14:38	13834.987	10.137	19.148
7/6/2015 14:38	13842.787	10.111	19.159
7/6/2015 14:38	13851.188	10.15	19.142
7/6/2015 14:38	13860.188	10.156	19.14
7/6/2015 14:39	13869.787	10.165	19.136
7/6/2015 14:39	13879.387	10.18	19.129
7/6/2015 14:39	13890.187	10.178	19.13
7/6/2015 14:39	13901.587	10.178	19.13
7/6/2015 14:39	13913.587	10.202	19.119
7/6/2015 14:40	13926.187	10.191	19.124
7/6/2015 14:40	13939.387	10.208	19.117
7/6/2015 14:40	13953.788	10.231	19.107
7/6/2015 14:40	13968.787	10.225	19.11
7/6/2015 14:40	13984.387	10.228	19.108
7/6/2015 14:41	14001.187	10.22	19.112
7/6/2015 14:41	14019.187	10.235	19.105
7/6/2015 14:41	14037.787	10.85	18.839
7/6/2015 14:42	14058.187	11.566	18.529
7/6/2015 14:42	14079.187	12.112	18.292
7/6/2015 14:42	14101.387	12.534	18.11
7/6/2015 14:43	14125.387	12.848	17.973
7/6/2015 14:43	14150.587	13.055	17.884
7/6/2015 14:44	14176.987	13.107	17.862
7/6/2015 14:44	14205.187	13.13	17.852
7/6/2015 14:45	14235.187	13.146	17.845
7/6/2015 14:45	14267.13	13.185	17.828
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7/6/2015 14:46	14336.587	13.277	17.788
7/6/2015 14:47	14372.587	13.293	17.781
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7/6/2015 14:48	14456.587	13.373	17.746
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7/6/2015 14:55	14828.587	13.604	17.646
7/6/2015 14:56	14894.587	13.642	17.63
7/6/2015 14:57	14966.587	13.651	17.626
7/6/2015 14:58	15044.587	13.684	17.612
7/6/2015 14:59	15122.587	13.697	17.606
7/6/2015 15:01	15206.698	13.744	17.586
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7/6/2015 15:04	15392.587	13.956	17.494
7/6/2015 15:06	15488.587	13.903	17.517
7/6/2015 15:07	15596.691	14.266	17.36
7/6/2015 15:09	15710.587	14.337	17.329
7/6/2015 15:11	15830.587	14.081	17.44
7/6/2015 15:13	15956.587	14.005	17.472
7/6/2015 15:16	16088.587	14.017	17.467
7/6/2015 15:18	16232.587	14.027	17.463
7/6/2015 15:20	16382.587	14.056	17.45

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7/6/2015 15:26	16706.587	14.165	17.403
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7/6/2015 15:32	17072.587	14.118	17.424
7/6/2015 15:35	17276.587	14.112	17.426
7/6/2015 15:39	17486.587	14.112	17.426
7/6/2015 15:43	17708.587	14.221	17.379
7/6/2015 15:47	17948.587	14.422	17.292
7/6/2015 15:51	18200.587	14.493	17.261
7/6/2015 15:55	18464.587	14.536	17.243
7/6/2015 16:00	18746.587	14.58	17.223
7/6/2015 16:05	19046.587	14.631	17.202
7/6/2015 16:10	19364.587	14.66	17.189
7/6/2015 16:16	19700.587	14.7	17.171
7/6/2015 16:22	20060.587	14.752	17.149
7/6/2015 16:28	20420.587	14.788	17.134
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7/6/2015 16:42	21260.587	14.879	17.094
7/6/2015 16:47	21576.94	14.9	17.085
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7/6/2015 16:47	21578.691	14.897	17.086
7/6/2015 16:47	21578.941	14.905	17.083
7/6/2015 16:47	21579.191	15.231	16.942
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7/6/2015 16:47	21579.691	14.941	17.067
7/6/2015 16:47	21579.941	14.974	17.053
7/6/2015 16:47	21580.191	15.023	17.032
7/6/2015 16:47	21580.451	15.039	17.025
7/6/2015 16:47	21580.802	15.069	17.012
7/6/2015 16:47	21581.021	15.109	16.995
7/6/2015 16:47	21581.443	15.162	16.972
7/6/2015 16:47	21581.868	15.174	16.966
7/6/2015 16:47	21582.087	15.209	16.951
7/6/2015 16:47	21582.306	15.21	16.951
7/6/2015 16:47	21582.525	15.225	16.944
7/6/2015 16:47	21582.743	15.267	16.926
7/6/2015 16:47	21582.962	15.279	16.921
7/6/2015 16:47	21583.181	15.306	16.909
7/6/2015 16:47	21583.401	15.319	16.903
7/6/2015 16:47	21583.661	15.345	16.892
7/6/2015 16:47	21584.081	15.371	16.881
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7/6/2015 16:47	21585.401	15.526	16.814
7/6/2015 16:47	21585.941	15.568	16.796
7/6/2015 16:47	21586.421	15.614	16.776
7/6/2015 16:47	21587.021	15.652	16.759
7/6/2015 16:47	21587.621	15.719	16.73
7/6/2015 16:47	21588.221	15.775	16.706
7/6/2015 16:47	21588.881	15.815	16.689
7/6/2015 16:47	21589.616	15.891	16.656
7/6/2015 16:47	21590.381	15.949	16.63
7/6/2015 16:47	21591.161	16.002	16.608

7/6/2015 16:47	21592.001	16.082	16.573
7/6/2015 16:47	21592.901	16.171	16.534
7/6/2015 16:47	21593.861	16.248	16.501
7/6/2015 16:47	21594.92	16.319	16.471
7/6/2015 16:47	21595.901	16.394	16.438
7/6/2015 16:47	21597.041	16.484	16.399
7/6/2015 16:47	21598.241	16.569	16.362
7/6/2015 16:47	21599.631	16.662	16.322
7/6/2015 16:47	21600.821	16.751	16.283
7/6/2015 16:47	21602.261	16.879	16.228
7/6/2015 16:47	21603.761	16.991	16.179
7/6/2015 16:47	21605.321	17.135	16.117
7/6/2015 16:48	21607.001	17.258	16.064
7/6/2015 16:48	21608.801	17.407	15.999
7/6/2015 16:48	21610.661	17.533	15.945
7/6/2015 16:48	21612.701	17.718	15.864
7/6/2015 16:48	21614.934	17.868	15.799
7/6/2015 16:48	21617.021	18.026	15.731
7/6/2015 16:48	21619.421	18.176	15.666
7/6/2015 16:48	21621.94	18.336	15.597
7/6/2015 16:48	21624.666	18.51	15.521
7/6/2015 16:48	21627.401	18.673	15.451
7/6/2015 16:48	21630.401	18.84	15.379
7/6/2015 16:48	21633.581	19.017	15.302
7/6/2015 16:48	21636.94	19.187	15.228
7/6/2015 16:48	21640.541	19.373	15.148
7/6/2015 16:48	21644.14	19.555	15.069
7/6/2015 16:48	21648.341	19.746	14.986
7/6/2015 16:48	21652.541	19.902	14.919
7/6/2015 16:48	21656.74	20.073	14.845
7/6/2015 16:48	21661.541	20.275	14.757
7/6/2015 16:49	21666.94	20.472	14.672
7/6/2015 16:49	21671.74	20.626	14.605
7/6/2015 16:49	21677.74	20.819	14.521
7/6/2015 16:49	21683.74	20.99	14.447
7/6/2015 16:49	21689.745	21.14	14.383
7/6/2015 16:49	21696.34	21.302	14.312
7/6/2015 16:49	21703.541	21.47	14.24
7/6/2015 16:49	21711.34	21.622	14.174
7/6/2015 16:49	21719.14	21.777	14.107
7/6/2015 16:50	21727.541	21.948	14.033
7/6/2015 16:50	21736.541	22.085	13.973
7/6/2015 16:50	21746.14	22.219	13.915
7/6/2015 16:50	21755.74	22.34	13.863
7/6/2015 16:50	21766.54	22.485	13.8
7/6/2015 16:50	21777.94	22.595	13.752
7/6/2015 16:51	21789.94	22.712	13.702
7/6/2015 16:51	21802.54	22.826	13.652
7/6/2015 16:51	21815.74	22.923	13.61
7/6/2015 16:51	21830.246	23.01	13.573
7/6/2015 16:51	21845.284	23.114	13.527
7/6/2015 16:52	21860.74	23.135	13.518
7/6/2015 16:52	21877.54	23.013	13.571
7/6/2015 16:52	21895.54	22.872	13.632
7/6/2015 16:53	21914.14	22.768	13.677
7/6/2015 16:53	21934.54	22.697	13.708
7/6/2015 16:53	21955.54	22.645	13.731
7/6/2015 16:54	21977.74	22.605	13.748

7/6/2015 16:54	22001.74	22.598	13.751
7/6/2015 16:55	22026.94	22.587	13.756
7/6/2015 16:55	22053.34	22.59	13.754
7/6/2015 16:55	22081.54	22.608	13.747
7/6/2015 16:56	22111.54	22.629	13.738
7/6/2015 16:56	22143.34	22.65	13.728
7/6/2015 16:57	22176.94	22.668	13.721
7/6/2015 16:58	22212.94	22.72	13.698
7/6/2015 16:58	22248.94	22.73	13.694
7/6/2015 16:59	22290.94	22.78	13.672
7/6/2015 17:00	22332.94	22.821	13.654
7/6/2015 17:00	22374.94	22.88	13.629
7/6/2015 17:01	22422.94	22.905	13.618
7/6/2015 17:02	22476.94	22.927	13.609
7/6/2015 17:03	22524.94	22.987	13.583
7/6/2015 17:04	22584.94	23.083	13.541
7/6/2015 17:05	22644.94	23.14	13.516
7/6/2015 17:06	22704.94	23.195	13.492
7/6/2015 17:07	22770.94	23.266	13.462
7/6/2015 17:08	22842.94	23.302	13.446
7/6/2015 17:09	22920.94	23.351	13.425
7/6/2015 17:11	22998.94	23.41	13.399
7/6/2015 17:12	23082.94	23.417	13.396
7/6/2015 17:14	23172.94	23.458	13.378
7/6/2015 17:15	23269.026	23.513	13.355
7/6/2015 17:17	23364.94	23.566	13.332
7/6/2015 17:19	23472.94	23.605	13.315
7/6/2015 17:21	23586.94	23.668	13.287
7/6/2015 17:23	23706.94	23.713	13.268
7/6/2015 17:25	23832.94	23.769	13.244
7/6/2015 17:27	23964.94	23.81	13.226
7/6/2015 17:29	24108.94	23.865	13.202
7/6/2015 17:32	24258.94	23.926	13.176
7/6/2015 17:34	24414.94	23.993	13.147
7/6/2015 17:37	24582.94	24.044	13.125
7/6/2015 17:40	24762.94	24.094	13.103
7/6/2015 17:43	24948.94	24.139	13.084
7/6/2015 17:47	25152.94	24.205	13.055
7/6/2015 17:50	25362.94	24.255	13.033
7/6/2015 17:54	25584.94	24.329	13.001
7/6/2015 17:58	25824.94	24.381	12.979
7/6/2015 18:02	26076.94	24.437	12.955
7/6/2015 18:06	26340.94	24.485	12.934
7/6/2015 18:11	26622.94	24.576	12.894
7/6/2015 18:16	26922.99	25.231	12.611
7/6/2015 18:21	27240.94	24.761	12.814
7/6/2015 18:27	27576.94	24.779	12.806
7/6/2015 18:33	27937.007	24.872	12.766
7/6/2015 18:39	28296.971	24.917	12.747
7/6/2015 18:46	28716.94	25.036	12.695
7/6/2015 18:53	29136.94	25.116	12.66
7/6/2015 19:00	29549.679	25.17	12.637
7/6/2015 19:00	29549.93	25.179	12.633
7/6/2015 19:00	29550.18	25.161	12.641
7/6/2015 19:00	29550.43	25.169	12.638
7/6/2015 19:00	29550.68	25.176	12.635
7/6/2015 19:00	29550.93	25.168	12.638
7/6/2015 19:00	29551.18	25.135	12.652

7/6/2015 19:00	29551.43	25.169	12.637
7/6/2015 19:00	29551.68	25.166	12.639
7/6/2015 19:00	29551.93	25.171	12.637
7/6/2015 19:00	29552.18	25.174	12.635
7/6/2015 19:00	29552.43	25.178	12.634
7/6/2015 19:00	29552.68	25.162	12.64
7/6/2015 19:00	29552.93	25.174	12.635
7/6/2015 19:00	29553.18	25.166	12.639
7/6/2015 19:00	29553.529	25.169	12.637
7/6/2015 19:00	29553.75	25.177	12.634
7/6/2015 19:00	29554.17	25.191	12.628
7/6/2015 19:00	29554.592	24.792	12.801
7/6/2015 19:00	29554.812	23.929	13.175
7/6/2015 19:00	29555.03	25.24	12.607
7/6/2015 19:00	29555.249	24.895	12.756
7/6/2015 19:00	29555.467	24.934	12.739
7/6/2015 19:00	29555.687	24.854	12.774
7/6/2015 19:00	29555.905	24.805	12.795
7/6/2015 19:00	29556.125	24.731	12.827
7/6/2015 19:00	29556.4	24.65	12.862
7/6/2015 19:00	29556.82	24.551	12.905
7/6/2015 19:00	29557.24	24.442	12.952
7/6/2015 19:00	29557.66	24.325	13.003
7/6/2015 19:00	29558.14	24.201	13.057
7/6/2015 19:00	29558.783	24.022	13.134
7/6/2015 19:00	29559.207	23.916	13.18
7/6/2015 19:00	29559.76	23.772	13.242
7/6/2015 19:00	29560.36	23.625	13.306
7/6/2015 19:00	29560.96	23.473	13.372
7/6/2015 19:00	29561.62	23.325	13.436
7/6/2015 19:00	29562.34	23.134	13.519
7/6/2015 19:00	29563.12	22.951	13.598
7/6/2015 19:00	29564.041	22.734	13.692
7/6/2015 19:00	29564.74	22.567	13.764
7/6/2015 19:00	29565.64	22.374	13.848
7/6/2015 19:00	29566.6	22.16	13.941
7/6/2015 19:00	29567.56	21.966	14.025
7/6/2015 19:00	29568.75	21.681	14.148
7/6/2015 19:00	29569.78	21.472	14.238
7/6/2015 19:00	29570.98	21.22	14.348
7/6/2015 19:00	29572.24	20.959	14.461
7/6/2015 19:00	29573.758	20.646	14.597
7/6/2015 19:00	29575	20.435	14.688
7/6/2015 19:00	29576.5	20.128	14.821
7/6/2015 19:00	29578.06	19.845	14.943
7/6/2015 19:00	29579.74	19.535	15.078
7/6/2015 19:00	29581.54	19.225	15.212
7/6/2015 19:00	29583.5	18.887	15.358
7/6/2015 19:00	29585.44	18.575	15.493
7/6/2015 19:01	29587.54	18.229	15.643
7/6/2015 19:01	29589.76	17.885	15.792
7/6/2015 19:01	29592.16	17.544	15.94
7/6/2015 19:01	29594.68	17.189	16.094
7/6/2015 19:01	29597.32	16.816	16.255
7/6/2015 19:01	29600.14	16.447	16.415
7/6/2015 19:01	29603.14	16.074	16.576
7/6/2015 19:01	29606.32	15.703	16.737
7/6/2015 19:01	29609.68	15.322	16.902

7/6/2015 19:01	29613.28	14.94	17.068
7/6/2015 19:01	29616.88	14.612	17.21
7/6/2015 19:01	29621.08	14.185	17.395
7/6/2015 19:01	29625.28	13.808	17.558
7/6/2015 19:01	29629.48	13.463	17.707
7/6/2015 19:01	29634.28	13.089	17.869
7/6/2015 19:01	29639.68	12.71	18.033
7/6/2015 19:01	29644.48	12.405	18.165
7/6/2015 19:02	29650.48	12.037	18.325
7/6/2015 19:02	29656.48	11.697	18.472
7/6/2015 19:02	29662.48	11.404	18.599
7/6/2015 19:02	29669.194	11.089	18.736
7/6/2015 19:02	29676.28	10.792	18.864
7/6/2015 19:02	29684.215	10.5	18.991
7/6/2015 19:02	29691.88	10.226	19.109
7/6/2015 19:02	29700.28	9.973	19.219
7/6/2015 19:03	29709.28	9.74	19.32
7/6/2015 19:03	29718.967	9.495	19.426
7/6/2015 19:03	29728.48	9.266	19.525
7/6/2015 19:03	29739.31	9.078	19.607
7/6/2015 19:03	29750.68	8.87	19.696
7/6/2015 19:03	29762.68	8.661	19.787
7/6/2015 19:04	29775.28	8.501	19.856
7/6/2015 19:04	29788.48	8.317	19.936
7/6/2015 19:04	29802.88	8.169	20
7/6/2015 19:04	29817.88	8.033	20.059
7/6/2015 19:05	29833.479	7.882	20.124
7/6/2015 19:05	29850.28	7.75	20.182
7/6/2015 19:05	29868.28	7.615	20.24
7/6/2015 19:06	29886.88	7.496	20.292
7/6/2015 19:06	29907.28	7.36	20.351
7/6/2015 19:06	29928.28	7.245	20.4
7/6/2015 19:07	29950.479	7.141	20.445
7/6/2015 19:07	29974.678	7.007	20.503
7/6/2015 19:07	29999.68	6.892	20.553
7/6/2015 19:08	30026.08	6.788	20.598
7/6/2015 19:08	30054.28	6.681	20.645
7/6/2015 19:09	30084.28	6.575	20.69
7/6/2015 19:09	30116.08	6.476	20.733
7/6/2015 19:10	30149.68	6.379	20.775
7/6/2015 19:11	30185.68	6.282	20.817
7/6/2015 19:11	30221.68	6.17	20.866
7/6/2015 19:12	30263.68	6.081	20.904
7/6/2015 19:13	30305.68	5.979	20.949
7/6/2015 19:13	30347.68	5.868	20.997
7/6/2015 19:14	30395.68	5.797	21.028
7/6/2015 19:15	30449.68	5.683	21.077
7/6/2015 19:16	30497.68	5.614	21.107
7/6/2015 19:17	30557.68	5.485	21.162
7/6/2015 19:18	30617.68	5.396	21.201
7/6/2015 19:19	30677.68	5.323	21.232
7/6/2015 19:20	30743.68	5.232	21.272
7/6/2015 19:21	30815.68	5.134	21.314
7/6/2015 19:22	30893.68	5.028	21.36
7/6/2015 19:24	30971.68	4.953	21.393
7/6/2015 19:25	31055.68	4.855	21.436
7/6/2015 19:27	31145.68	4.759	21.477
7/6/2015 19:28	31241.68	4.685	21.509

7/6/2015 19:30	31337.68	4.593	21.549
7/6/2015 19:32	31445.68	4.496	21.591
7/6/2015 19:33	31559.68	4.398	21.633
7/6/2015 19:35	31679.68	4.31	21.671
7/6/2015 19:38	31805.68	4.222	21.71
7/6/2015 19:40	31937.68	4.138	21.746
7/6/2015 19:42	32081.68	4.051	21.784
7/6/2015 19:45	32231.68	3.972	21.818
7/6/2015 19:47	32387.68	3.874	21.86
7/6/2015 19:50	32555.68	3.794	21.895
7/6/2015 19:53	32735.68	3.706	21.933
7/6/2015 19:56	32921.68	3.625	21.968
7/6/2015 20:00	33125.68	3.54	22.005
7/6/2015 20:03	33335.68	3.449	22.044
7/6/2015 20:07	33557.68	3.378	22.075
7/6/2015 20:11	33797.68	3.278	22.118
7/6/2015 20:15	34049.68	3.195	22.154
7/6/2015 20:19	34313.68	3.11	22.191
7/6/2015 20:24	34595.68	3.018	22.231
7/6/2015 20:29	34895.68	2.94	22.265
7/6/2015 20:34	35213.68	2.858	22.3
7/6/2015 20:40	35549.68	2.768	22.339
7/6/2015 20:46	35909.68	2.701	22.368
7/6/2015 20:52	36269.68	2.601	22.411
7/6/2015 20:59	36689.68	2.519	22.447
7/6/2015 21:06	37109.68	2.438	22.482
7/6/2015 21:13	37529.68	2.362	22.515
7/6/2015 21:21	38009.68	2.291	22.546
7/6/2015 21:30	38549.68	2.199	22.586
7/6/2015 21:38	39029.68	2.13	22.616
7/6/2015 21:48	39629.68	2.044	22.653
7/6/2015 21:58	40229.68	1.958	22.69
7/6/2015 22:08	40829.68	1.884	22.722
7/6/2015 22:19	41489.68	1.815	22.752
7/6/2015 22:31	42209.68	1.726	22.791
7/6/2015 22:44	42989.68	1.648	22.824
7/6/2015 22:57	43769.68	1.579	22.854
7/6/2015 23:11	44609.68	1.505	22.886
7/6/2015 23:26	45509.68	1.457	22.907
7/6/2015 23:42	46469.68	1.366	22.946
7/6/2015 23:58	47429.68	1.297	22.976
7/7/2015 0:16	48509.68	1.214	23.012
7/7/2015 0:35	49649.68	1.15	23.04
7/7/2015 0:55	50849.68	1.081	23.07
7/7/2015 1:16	52109.68	1.002	23.104
7/7/2015 1:38	53429.68	0.955	23.125
7/7/2015 2:02	54869.68	0.89	23.153
7/7/2015 2:27	56369.68	0.913	23.143
7/7/2015 2:53	57929.68	1.008	23.102
7/7/2015 3:21	59609.68	1.125	23.051
7/7/2015 3:51	61409.68	1.28	22.984
7/7/2015 4:22	63269.68	1.337	22.959
7/7/2015 4:56	65309.68	1.274	22.986
7/7/2015 5:31	67409.68	1.173	23.03
7/7/2015 6:08	69629.68	1.065	23.077
7/7/2015 6:48	72029.68	0.963	23.121
7/7/2015 7:30	74549.68	0.917	23.141
7/7/2015 8:14	77189.68	0.788	23.197

Report Date:	7/10/2015 10:37
Report User Name:	3367tml
Report Computer Name:	01POR-TANDREWS
Application:	WinSitu.exe
Application Version:	5.6.25.0

Log File Properties

File Name	PW-1CON_Append_2015-07-10_10-36-35-487.wsl
Create Date	7/10/2015 10:36

Device Properties

Device	Level TROLL 700	
Site	PW-1	
Device Name		
Serial Number	370172	
Firmware Version	2.09	
Hardware Version	3	
Device Address	2	
Device Comm Cfg	19200	8
	None	1 (Modbus-ASCII)
Used Memory	1	
Used Battery	7	

Log Configuration

Log Name	PW-1CON
Created By	3367tml
Computer Name	01POR-TANDREWS
Application	WinSitu.exe
Application Version	5.6.25.0
Create Date	7/7/2015 9:30:31 AM Pacific Daylight Time
Log Setup Time Zone	Pacific Daylight Time
Notes Size(bytes)	4096
Overwrite when full	Disabled
Scheduled Start Time	Manual Start
Scheduled Stop Time	No Stop Time
Type	True Logarithmic
Max Interval	Days: 2 hrs: 00 mins: 00 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode	Level Depth To Water	
Specific Gravity		0.999
Level Reference Mode:	Set new reference	
Level Reference Value:	0 (ft)	
Level Reference Head Pressure	23.241 (PSI)	

Other Log Settings

Depth of Probe:	53.6622 (ft)
Head Pressure:	23.2408 (PSI)
Temperature:	12.8857 (C)

Log Notes:

Date and Time	Note

7/7/2015 9:30	Used Battery: 7% Used Memory: 3% User Name: 3367tml
7/7/2015 9:45	Manual Start Command
7/7/2015 10:14	Log Download - Used Battery: 7% Used Memory: 3% User Name: 3367tml
7/7/2015 10:28	Log Download - Used Battery: 7% Used Memory: 3% User Name: 3367tml
7/7/2015 10:44	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3367tml
7/7/2015 12:23	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3367tml
7/7/2015 15:05	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3367tml
7/7/2015 15:17	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3367tml
7/7/2015 16:43	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3367tml
7/7/2015 17:30	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3367tml
7/7/2015 19:55	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3367tml
7/7/2015 20:42	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3367tml
7/7/2015 21:09	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/7/2015 21:23	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/7/2015 21:58	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/7/2015 22:37	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/7/2015 23:14	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/8/2015 0:02	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/8/2015 0:49	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/8/2015 2:03	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/8/2015 4:03	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/8/2015 4:25	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/8/2015 4:39	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/8/2015 5:25	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/8/2015 6:10	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/8/2015 8:13	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/8/2015 8:48	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/8/2015 9:59	Restart Command
7/8/2015 10:00	Log Download - Used Battery: 8% Used Memory: 3% User Name: 3698bjm
7/10/2015 10:35	Used Battery: 8% Used Memory: 3% User Name: 3367tml
7/10/2015 10:35	Manual Stop Command

Log Data:

Record Count	394	
Sensors	1	
1	10370172	Pressure/Temp 100 PSIG (70m/231ft)

Time Zone: Pacific Daylight Time

Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 231ft SN#: 10370172 Level Depth To Water (ft)	Sensor: Pres(G) 231ft SN#: 10370172 Pressure (PSI)
7/7/2015 9:45	0	-0.086	23.278
7/7/2015 9:45	0.262	-0.09	23.28
7/7/2015 9:45	0.501	-0.081	23.276
7/7/2015 9:45	0.751	-0.079	23.275
7/7/2015 9:45	1.001	-0.085	23.278
7/7/2015 9:45	1.251	-0.077	23.274
7/7/2015 9:45	1.501	-0.083	23.277
7/7/2015 9:45	1.751	-0.085	23.278
7/7/2015 9:45	2.001	-0.079	23.275
7/7/2015 9:45	2.251	-0.093	23.281
7/7/2015 9:45	2.501	-0.137	23.3
7/7/2015 9:45	2.783	-0.11	23.289
7/7/2015 9:45	3.002	-0.089	23.279

7/7/2015 9:45	3.251	-0.085	23.278
7/7/2015 9:45	3.501	-0.098	23.284
7/7/2015 9:45	3.751	-0.086	23.278
7/7/2015 9:45	4.001	-0.098	23.284
7/7/2015 9:45	4.251	-0.088	23.279
7/7/2015 9:45	4.501	-0.088	23.279
7/7/2015 9:45	4.751	-0.096	23.283
7/7/2015 9:45	5.001	-0.094	23.282
7/7/2015 9:45	5.251	-0.089	23.28
7/7/2015 9:45	5.501	-0.086	23.278
7/7/2015 9:45	5.751	-0.085	23.278
7/7/2015 9:45	6.001	-0.085	23.278
7/7/2015 9:45	6.36	-0.08	23.275
7/7/2015 9:45	6.721	-0.062	23.268
7/7/2015 9:45	7.14	2.483	22.165
7/7/2015 9:45	7.56	-0.485	23.451
7/7/2015 9:45	7.981	0.012	23.236
7/7/2015 9:45	8.461	-0.016	23.248
7/7/2015 9:45	9	-0.035	23.256
7/7/2015 9:45	9.481	-0.033	23.255
7/7/2015 9:45	10.08	-0.041	23.259
7/7/2015 9:45	10.681	-0.045	23.26
7/7/2015 9:45	11.28	-0.027	23.253
7/7/2015 9:45	11.94	-0.022	23.25
7/7/2015 9:45	12.66	-0.029	23.253
7/7/2015 9:45	13.44	-0.038	23.258
7/7/2015 9:45	14.22	-0.037	23.257
7/7/2015 9:45	15.06	-0.029	23.254
7/7/2015 9:45	15.96	-0.036	23.257
7/7/2015 9:45	16.92	-0.029	23.253
7/7/2015 9:45	17.88	-0.035	23.256
7/7/2015 9:45	18.96	-0.037	23.257
7/7/2015 9:45	20.1	-0.048	23.262
7/7/2015 9:45	21.3	0.057	23.216
7/7/2015 9:45	22.56	0.165	23.169
7/7/2015 9:45	23.88	0.268	23.125
7/7/2015 9:45	25.32	0.388	23.073
7/7/2015 9:45	26.82	0.501	23.024
7/7/2015 9:45	28.38	0.611	22.976
7/7/2015 9:45	30.06	0.707	22.935
7/7/2015 9:45	31.86	0.819	22.886
7/7/2015 9:45	33.72	0.946	22.831
7/7/2015 9:45	35.76	1.059	22.782
7/7/2015 9:45	37.86	1.181	22.73
7/7/2015 9:45	40.08	1.296	22.68
7/7/2015 9:45	42.682	1.433	22.62
7/7/2015 9:45	45	1.528	22.579
7/7/2015 9:45	47.64	1.643	22.529
7/7/2015 9:45	50.46	1.757	22.48
7/7/2015 9:45	53.46	1.888	22.423
7/7/2015 9:45	56.64	2.004	22.373
7/7/2015 9:46	60	2.11	22.327
7/7/2015 9:46	63.6	2.235	22.273
7/7/2015 9:46	67.256	2.344	22.226
7/7/2015 9:46	71.4	2.466	22.173
7/7/2015 9:46	75.6	2.585	22.121
7/7/2015 9:46	79.8	2.77	22.041
7/7/2015 9:46	84.6	3.046	21.922

7/7/2015 9:46	90	3.268	21.826
7/7/2015 9:46	94.8	3.924	21.542
7/7/2015 9:46	100.8	4.731	21.192
7/7/2015 9:46	106.8	5.526	20.848
7/7/2015 9:46	112.877	6.457	20.444
7/7/2015 9:46	119.4	7.299	20.08
7/7/2015 9:47	126.6	8.131	19.72
7/7/2015 9:47	134.4	8.957	19.362
7/7/2015 9:47	142.2	9.664	19.055
7/7/2015 9:47	150.6	10.344	18.761
7/7/2015 9:47	159.6	11.027	18.465
7/7/2015 9:47	169.2	11.536	18.245
7/7/2015 9:47	178.8	11.889	18.092
7/7/2015 9:48	189.6	12.128	17.988
7/7/2015 9:48	201	12.337	17.898
7/7/2015 9:48	213.037	12.539	17.811
7/7/2015 9:48	225.6	12.744	17.722
7/7/2015 9:48	238.8	12.938	17.638
7/7/2015 9:49	253.2	13.132	17.553
7/7/2015 9:49	268.2	13.296	17.483
7/7/2015 9:49	283.8	13.473	17.406
7/7/2015 9:50	300.6	13.649	17.33
7/7/2015 9:50	318.6	13.79	17.268
7/7/2015 9:50	337.2	13.862	17.238
7/7/2015 9:50	357.691	13.845	17.245
7/7/2015 9:51	378.6	13.83	17.251
7/7/2015 9:51	400.8	13.829	17.252
7/7/2015 9:52	424.8	13.862	17.237
7/7/2015 9:52	450	13.914	17.215
7/7/2015 9:52	476.4	13.979	17.187
7/7/2015 9:53	504.6	14.057	17.153
7/7/2015 9:53	534.6	14.147	17.114
7/7/2015 9:54	566.4	14.214	17.085
7/7/2015 9:55	600	14.299	17.048
7/7/2015 9:55	636	14.396	17.006
7/7/2015 9:56	672	14.497	16.962
7/7/2015 9:56	714	14.584	16.925
7/7/2015 9:57	756	14.66	16.892
7/7/2015 9:58	798	14.745	16.855
7/7/2015 9:59	846	14.846	16.811
7/7/2015 10:00	900	14.952	16.766
7/7/2015 10:00	948	15.024	16.734
7/7/2015 10:01	1008	15.132	16.687
7/7/2015 10:02	1068	15.218	16.65
7/7/2015 10:03	1128.029	15.545	16.508
7/7/2015 10:04	1194	15.865	16.37
7/7/2015 10:06	1266	16.019	16.303
7/7/2015 10:07	1344	15.797	16.399
7/7/2015 10:08	1422	15.683	16.449
7/7/2015 10:10	1506	15.689	16.446
7/7/2015 10:11	1596	15.77	16.411
7/7/2015 10:13	1692	15.846	16.378
7/7/2015 10:14	1788	15.915	16.348
7/7/2015 10:16	1896.165	16.02	16.303
7/7/2015 10:18	2010	16.092	16.271
7/7/2015 10:20	2130	16.155	16.244
7/7/2015 10:22	2256	16.217	16.217
7/7/2015 10:24	2388	16.329	16.169

7/7/2015 10:27	2532	16.405	16.136
7/7/2015 10:29	2682	16.52	16.086
7/7/2015 10:32	2838	16.602	16.051
7/7/2015 10:35	3006	16.692	16.012
7/7/2015 10:38	3186	17.038	15.862
7/7/2015 10:41	3372	17.074	15.846
7/7/2015 10:44	3576	16.988	15.884
7/7/2015 10:48	3786	17.049	15.857
7/7/2015 10:51	4008	17.141	15.817
7/7/2015 10:55	4248.185	17.244	15.773
7/7/2015 11:00	4500	17.319	15.74
7/7/2015 11:04	4764	17.415	15.699
7/7/2015 11:09	5046	17.519	15.654
7/7/2015 11:14	5346	17.593	15.622
7/7/2015 11:19	5664	17.684	15.582
7/7/2015 11:25	6000	17.841	15.514
7/7/2015 11:31	6360	17.868	15.502
7/7/2015 11:37	6720	17.938	15.472
7/7/2015 11:44	7140	18.07	15.415
7/7/2015 11:51	7560	18.165	15.374
7/7/2015 11:58	7980	18.314	15.309
7/7/2015 12:06	8460	18.347	15.295
7/7/2015 12:15	9000	18.463	15.245
7/7/2015 12:23	9480	18.562	15.202
7/7/2015 12:33	10080	18.625	15.175
7/7/2015 12:43	10680	18.729	15.13
7/7/2015 12:53	11280	18.829	15.086
7/7/2015 13:04	11940	18.965	15.027
7/7/2015 13:16	12660	19.047	14.992
7/7/2015 13:29	13440	19.148	14.948
7/7/2015 13:42	14220	19.3	14.882
7/7/2015 13:56	15060	19.391	14.843
7/7/2015 14:11	15960	19.502	14.795
7/7/2015 14:27	16920	19.621	14.743
7/7/2015 14:43	17880	19.737	14.693
7/7/2015 15:01	18960	19.863	14.638
7/7/2015 15:20	20100	19.999	14.58
7/7/2015 15:40	21300	20.114	14.53
7/7/2015 16:01	22560	20.205	14.49
7/7/2015 16:23	23880	20.307	14.446
7/7/2015 16:47	25320	20.385	14.412
7/7/2015 17:12	26820	20.482	14.37
7/7/2015 17:38	28380	20.594	14.322
7/7/2015 18:06	30060.11	20.749	14.255
7/7/2015 18:36	31860	20.814	14.227
7/7/2015 19:07	33720	20.915	14.183
7/7/2015 19:41	35760	21.051	14.124
7/7/2015 20:16	37860	21.153	14.08
7/7/2015 20:53	40080	21.294	14.018
7/7/2015 21:33	42480	21.429	13.96
7/7/2015 22:15	45000	21.544	13.91
7/7/2015 22:59	47640.108	21.648	13.866
7/7/2015 23:46	50460	21.806	13.797
7/8/2015 0:36	53460	21.971	13.726
7/8/2015 1:29	56640	22.145	13.65
7/8/2015 2:25	60000	22.378	13.549
7/8/2015 3:25	63600	22.833	13.352
7/8/2015 4:25	67200	23.131	13.223

7/8/2015 5:35	71400	23.135	13.222
7/8/2015 6:45	75600	23.251	13.171
7/8/2015 7:55	79800	23.442	13.088
7/8/2015 9:15	84600	23.842	12.915
7/8/2015 9:59	87266.526	24.018	12.839
7/8/2015 9:59	87266.776	24.036	12.831
7/8/2015 9:59	87267.027	24.021	12.838
7/8/2015 9:59	87267.277	24.04	12.829
7/8/2015 9:59	87267.527	24.026	12.835
7/8/2015 9:59	87267.777	24.032	12.833
7/8/2015 9:59	87268.027	24.025	12.836
7/8/2015 9:59	87268.277	24.027	12.835
7/8/2015 9:59	87268.527	24.034	12.832
7/8/2015 9:59	87268.777	24.038	12.83
7/8/2015 9:59	87269.027	24.046	12.827
7/8/2015 9:59	87269.277	24.041	12.829
7/8/2015 9:59	87269.527	24.035	12.831
7/8/2015 9:59	87269.845	24.015	12.84
7/8/2015 9:59	87270.065	24.026	12.835
7/8/2015 9:59	87270.289	24.044	12.828
7/8/2015 9:59	87270.527	24.036	12.831
7/8/2015 9:59	87270.777	24.027	12.835
7/8/2015 9:59	87271.027	24.045	12.827
7/8/2015 9:59	87271.277	24.036	12.831
7/8/2015 9:59	87271.527	24.028	12.835
7/8/2015 9:59	87271.777	24.032	12.833
7/8/2015 9:59	87272.027	24.041	12.829
7/8/2015 9:59	87272.277	24.038	12.83
7/8/2015 9:59	87272.633	24.049	12.826
7/8/2015 9:59	87273.056	24.048	12.826
7/8/2015 9:59	87273.277	24.04	12.829
7/8/2015 9:59	87273.701	24.045	12.827
7/8/2015 9:59	87274.087	24.049	12.825
7/8/2015 9:59	87274.506	24.047	12.826
7/8/2015 9:59	87274.987	24.044	12.828
7/8/2015 9:59	87275.526	22.584	13.46
7/8/2015 9:59	87276.006	23.882	12.898
7/8/2015 9:59	87276.607	23.76	12.951
7/8/2015 9:59	87277.207	23.658	12.995
7/8/2015 9:59	87277.807	23.515	13.057
7/8/2015 9:59	87278.466	23.387	13.112
7/8/2015 9:59	87279.39	23.195	13.195
7/8/2015 9:59	87279.966	23.084	13.243
7/8/2015 9:59	87280.746	22.935	13.308
7/8/2015 9:59	87281.587	22.769	13.38
7/8/2015 9:59	87282.486	22.607	13.45
7/8/2015 9:59	87283.446	22.406	13.537
7/8/2015 9:59	87284.406	22.251	13.604
7/8/2015 9:59	87285.486	22.064	13.685
7/8/2015 9:59	87286.627	21.837	13.783
7/8/2015 9:59	87287.827	21.653	13.863
7/8/2015 9:59	87289.264	21.421	13.964
7/8/2015 9:59	87290.406	21.228	14.047
7/8/2015 9:59	87291.847	20.991	14.15
7/8/2015 9:59	87293.347	20.761	14.249
7/8/2015 9:59	87294.906	20.523	14.353
7/8/2015 9:59	87296.587	20.277	14.459
7/8/2015 9:59	87298.386	20.027	14.568

7/8/2015 10:00	87300.246	19.756	14.685
7/8/2015 10:00	87302.286	19.485	14.802
7/8/2015 10:00	87304.386	19.217	14.918
7/8/2015 10:00	87306.606	18.931	15.042
7/8/2015 10:00	87309.006	18.644	15.166
7/8/2015 10:00	87311.526	18.348	15.294
7/8/2015 10:00	87314.301	18.039	15.428
7/8/2015 10:00	87316.986	17.754	15.552
7/8/2015 10:00	87320.032	17.415	15.699
7/8/2015 10:00	87323.166	17.147	15.814
7/8/2015 10:00	87326.526	16.838	15.948
7/8/2015 10:00	87330.126	16.524	16.084
7/8/2015 10:00	87333.726	16.236	16.209
7/8/2015 10:00	87337.926	15.929	16.342
7/8/2015 10:00	87342.126	15.62	16.476
7/8/2015 10:00	87346.326	15.339	16.598
7/8/2015 10:00	87351.126	15.043	16.726
7/8/2015 10:00	87356.526	14.74	16.857
7/8/2015 10:01	87361.326	14.491	16.965
7/8/2015 10:01	87367.326	14.185	17.097
7/8/2015 10:01	87373.326	13.908	17.217
7/8/2015 10:01	87379.326	13.663	17.323
7/8/2015 10:01	87385.926	13.422	17.428
7/8/2015 10:01	87393.331	13.16	17.541
7/8/2015 10:01	87400.926	12.94	17.637
7/8/2015 10:01	87408.726	12.69	17.745
7/8/2015 10:01	87417.126	12.473	17.839
7/8/2015 10:02	87426.126	12.268	17.928
7/8/2015 10:02	87435.726	12.056	18.02
7/8/2015 10:02	87445.326	11.846	18.11
7/8/2015 10:02	87456.126	11.665	18.189
7/8/2015 10:02	87467.526	11.458	18.278
7/8/2015 10:02	87479.526	11.274	18.358
7/8/2015 10:03	87492.126	11.093	18.437
7/8/2015 10:03	87505.326	10.901	18.52
7/8/2015 10:03	87519.726	10.746	18.587
7/8/2015 10:03	87534.726	10.596	18.652
7/8/2015 10:04	87550.326	10.459	18.711
7/8/2015 10:04	87567.126	10.338	18.764
7/8/2015 10:04	87585.126	10.187	18.829
7/8/2015 10:05	87603.726	10.077	18.877
7/8/2015 10:05	87624.126	9.964	18.926
7/8/2015 10:05	87645.126	9.868	18.967
7/8/2015 10:06	87667.326	9.764	19.012
7/8/2015 10:06	87691.326	9.683	19.047
7/8/2015 10:06	87716.526	9.587	19.089
7/8/2015 10:07	87742.926	9.493	19.13
7/8/2015 10:07	87771.126	9.398	19.171
7/8/2015 10:08	87801.126	9.289	19.218
7/8/2015 10:08	87832.926	9.197	19.258
7/8/2015 10:09	87866.526	9.111	19.295
7/8/2015 10:10	87902.526	9.032	19.329
7/8/2015 10:10	87938.526	8.953	19.363
7/8/2015 10:11	87980.526	8.876	19.397
7/8/2015 10:12	88022.526	8.792	19.433
7/8/2015 10:12	88064.526	8.717	19.466
7/8/2015 10:13	88112.526	8.634	19.501
7/8/2015 10:14	88166.526	8.533	19.545

7/8/2015 10:15	88214.526	8.468	19.573
7/8/2015 10:16	88274.526	8.379	19.612
7/8/2015 10:17	88334.526	8.306	19.644
7/8/2015 10:18	88394.526	8.206	19.687
7/8/2015 10:19	88460.526	8.138	19.716
7/8/2015 10:20	88532.526	8.034	19.762
7/8/2015 10:21	88610.526	7.968	19.79
7/8/2015 10:23	88688.526	7.89	19.824
7/8/2015 10:24	88772.526	7.79	19.867
7/8/2015 10:26	88862.526	7.714	19.9
7/8/2015 10:27	88958.526	7.646	19.93
7/8/2015 10:29	89054.526	7.559	19.967
7/8/2015 10:31	89162.526	7.482	20
7/8/2015 10:32	89276.526	7.395	20.038
7/8/2015 10:34	89396.526	7.296	20.081
7/8/2015 10:37	89522.526	7.218	20.115
7/8/2015 10:39	89654.526	7.144	20.147
7/8/2015 10:41	89798.526	7.061	20.183
7/8/2015 10:44	89948.526	7	20.209
7/8/2015 10:46	90104.526	6.876	20.263
7/8/2015 10:49	90272.526	6.81	20.292
7/8/2015 10:52	90452.526	6.702	20.338
7/8/2015 10:55	90638.526	6.638	20.366
7/8/2015 10:59	90842.526	6.547	20.406
7/8/2015 11:02	91052.526	6.43	20.456
7/8/2015 11:06	91274.526	6.367	20.483
7/8/2015 11:10	91514.526	6.277	20.522
7/8/2015 11:14	91766.526	6.203	20.554
7/8/2015 11:18	92030.526	6.101	20.599
7/8/2015 11:23	92312.526	6.008	20.639
7/8/2015 11:28	92612.526	5.917	20.678
7/8/2015 11:33	92930.526	5.808	20.726
7/8/2015 11:39	93266.526	5.748	20.752
7/8/2015 11:45	93626.526	5.641	20.798
7/8/2015 11:51	93986.526	5.562	20.832
7/8/2015 11:58	94406.526	5.45	20.881
7/8/2015 12:05	94826.526	5.354	20.922
7/8/2015 12:12	95246.526	5.271	20.958
7/8/2015 12:20	95726.526	5.172	21.001
7/8/2015 12:29	96266.526	5.079	21.041
7/8/2015 12:37	96746.526	4.996	21.077
7/8/2015 12:47	97346.526	4.883	21.126
7/8/2015 12:57	97946.526	4.78	21.171
7/8/2015 13:07	98546.526	4.691	21.209
7/8/2015 13:18	99206.526	4.593	21.252
7/8/2015 13:30	99926.526	4.476	21.302
7/8/2015 13:43	100706.526	4.386	21.341
7/8/2015 13:56	101486.526	4.291	21.383
7/8/2015 14:10	102326.526	4.166	21.437
7/8/2015 14:25	103226.526	4.061	21.482
7/8/2015 14:41	104186.526	3.964	21.524
7/8/2015 14:57	105146.526	3.865	21.567
7/8/2015 15:15	106226.526	3.768	21.609
7/8/2015 15:34	107366.526	3.632	21.668
7/8/2015 15:54	108566.526	3.553	21.702
7/8/2015 16:15	109826.526	3.439	21.751
7/8/2015 16:37	111146.526	3.336	21.796
7/8/2015 17:01	112586.526	3.222	21.845

7/8/2015 17:26	114086.526	3.126	21.887
7/8/2015 17:52	115646.526	3.036	21.926
7/8/2015 18:20	117326.526	2.906	21.982
7/8/2015 18:50	119126.526	2.825	22.018
7/8/2015 19:21	120986.526	2.713	22.066
7/8/2015 19:55	123026.526	2.594	22.118
7/8/2015 20:30	125126.526	2.493	22.161
7/8/2015 21:07	127346.526	2.366	22.216
7/8/2015 21:47	129746.526	2.266	22.259
7/8/2015 22:29	132266.526	2.166	22.303
7/8/2015 23:13	134906.526	2.027	22.363
7/9/2015 0:00	137726.526	1.919	22.41
7/9/2015 0:50	140726.526	1.803	22.46
7/9/2015 1:43	143906.526	1.69	22.509
7/9/2015 2:39	147266.526	1.741	22.487
7/9/2015 3:39	150866.526	2.037	22.359
7/9/2015 4:39	154466.526	2.155	22.307
7/9/2015 5:49	158666.526	1.952	22.395
7/9/2015 6:59	162866.526	1.772	22.473
7/9/2015 8:09	167066.526	1.621	22.539
7/9/2015 9:29	171866.526	1.448	22.614
7/9/2015 10:59	177266.526	1.271	22.69
7/9/2015 12:19	182066.526	1.137	22.749
7/9/2015 13:59	188066.526	0.981	22.816
7/9/2015 15:39	194066.526	0.85	22.873
7/9/2015 17:19	200066.526	0.695	22.94
7/9/2015 19:09	206666.526	0.572	22.993
7/9/2015 21:09	213866.526	0.43	23.055
7/9/2015 23:19	221666.526	0.319	23.103
7/10/2015 1:29	229466.526	0.247	23.134
7/10/2015 3:49	237866.526	0.751	22.916
7/10/2015 6:19	246866.526	0.622	22.972
7/10/2015 8:59	256466.526	0.397	23.069

Report Date:	7/7/2015 9:05
Report User Name:	3698bjm
Report Computer Name:	BEL-BMCMULLEN
Application:	WinSitu.exe
Application Version:	5.6.25.0

Log File Properties

File Name	MW-1A_Append_2015-07-07_09-04-10-495.wsl
Create Date	7/7/2015 9:04

Device Properties

Device	Level TROLL 700	
Site	MW-1A	
Device Name		
Serial Number	163262	
Firmware Version	2.09	
Hardware Version	3	
Device Address	4	
Device Comm Cfg	19200	8
	None	1 (Modbus-ASCII)
Used Memory	0	
Used Battery	33	

Log Configuration

Log Name	MW-1A
Created By	Unknown
Computer Name	Field PC
Application	WinSituMobile.exe
Application Version	5.6.2.0
Create Date	7/6/2015 11:39:07 AM Pacific Daylight Time
Log Setup Time Zone	Pacific Daylight Time
Notes Size(bytes)	4096
Overwrite when full	Disabled
Scheduled Start Time	Manual Start
Scheduled Stop Time	No Stop Time
Type	True Logarithmic
Max Interval	Days: 1 hrs: 00 mins: 00 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode	Level Depth To Water
Specific Gravity	0.999
Level Reference Mode:	Set first logged value to offset
Level Reference Offset:	0 (ft)

Other Log Settings

Depth of Probe:	31.6811 (ft)
Head Pressure:	13.7209 (PSI)
Temperature:	13.0452 (C)

Log Notes:

Date and Time	Note
7/6/2015 10:38	Used Battery: 33% Used Memory: 1% User Name: Unknown
7/6/2015 10:47	Manual Start Command
7/6/2015 12:26	Restart Command
7/6/2015 14:36	Restart Command
7/6/2015 16:47	Restart Command
7/6/2015 17:35	Log Download - Used Battery: 33% Used Memory: 1% User Name: 3698bjm
7/6/2015 19:00	Restart Command
7/7/2015 9:03	Log Download - Used Battery: 33% Used Memory: 1% User Name: 3698bjm

Log Data:

Record Count	773	
Sensors	1	
1	10163262	Pressure/Temp 30 PSIG (21m/69ft)

Time Zone: Pacific Daylight Time

Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 69ft SN#: 10163262 Pressure (PSI)	Sensor: Pres(G) 69ft SN#: 10163262 Level Depth To Water (ft)
7/6/2015 10:47	0	13.838	0
7/6/2015 10:47	0.27	13.838	-0.001
7/6/2015 10:47	0.5	13.841	-0.008
7/6/2015 10:47	0.75	13.842	-0.01
7/6/2015 10:47	1	13.842	-0.008
7/6/2015 10:47	1.264	13.847	-0.021
7/6/2015 10:47	1.5	13.84	-0.003
7/6/2015 10:47	1.75	13.84	-0.004
7/6/2015 10:47	2	13.841	-0.006
7/6/2015 10:47	2.25	13.84	-0.004
7/6/2015 10:47	2.5	13.839	-0.003
7/6/2015 10:47	2.75	13.839	-0.003
7/6/2015 10:47	3	13.843	-0.011
7/6/2015 10:47	3.25	13.838	0
7/6/2015 10:47	3.5	13.841	-0.006
7/6/2015 10:47	3.75	13.839	-0.002
7/6/2015 10:47	4	13.843	-0.01
7/6/2015 10:48	4.25	13.838	0.001
7/6/2015 10:48	4.5	13.842	-0.009
7/6/2015 10:48	4.75	13.841	-0.007
7/6/2015 10:48	5	13.841	-0.008
7/6/2015 10:48	5.25	13.842	-0.009
7/6/2015 10:48	5.5	13.839	-0.001
7/6/2015 10:48	5.75	13.841	-0.006
7/6/2015 10:48	6	13.841	-0.007
7/6/2015 10:48	6.36	13.845	-0.015
7/6/2015 10:48	6.72	13.836	0.004
7/6/2015 10:48	7.14	13.839	-0.003
7/6/2015 10:48	7.56	13.84	-0.005
7/6/2015 10:48	7.98	13.839	-0.001
7/6/2015 10:48	8.46	13.838	-0.001

7/6/2015 10:48	9	13.84	-0.005
7/6/2015 10:48	9.48	13.837	0.003
7/6/2015 10:48	10.08	13.837	0.001
7/6/2015 10:48	10.68	13.836	0.006
7/6/2015 10:48	11.28	13.836	0.005
7/6/2015 10:48	11.94	13.836	0.005
7/6/2015 10:48	12.66	13.835	0.008
7/6/2015 10:48	13.44	13.836	0.005
7/6/2015 10:48	14.22	13.834	0.009
7/6/2015 10:48	15.06	13.834	0.008
7/6/2015 10:48	15.96	13.832	0.013
7/6/2015 10:48	16.92	13.833	0.012
7/6/2015 10:48	17.88	13.831	0.017
7/6/2015 10:48	18.96	13.833	0.011
7/6/2015 10:48	20.1	13.828	0.023
7/6/2015 10:48	21.3	13.829	0.02
7/6/2015 10:48	22.56	13.828	0.023
7/6/2015 10:48	23.88	13.829	0.022
7/6/2015 10:48	25.32	13.828	0.023
7/6/2015 10:48	26.82	13.825	0.029
7/6/2015 10:48	28.38	13.825	0.031
7/6/2015 10:48	30.06	13.823	0.036
7/6/2015 10:48	31.86	13.819	0.045
7/6/2015 10:48	33.72	13.819	0.044
7/6/2015 10:48	35.76	13.812	0.061
7/6/2015 10:48	37.86	13.813	0.059
7/6/2015 10:48	40.08	13.806	0.073
7/6/2015 10:48	42.48	13.806	0.074
7/6/2015 10:48	45	13.804	0.078
7/6/2015 10:48	47.64	13.802	0.084
7/6/2015 10:48	50.46	13.799	0.091
7/6/2015 10:48	53.46	13.794	0.101
7/6/2015 10:48	56.64	13.79	0.11
7/6/2015 10:48	60	13.787	0.119
7/6/2015 10:48	63.6	13.782	0.13
7/6/2015 10:49	67.2	13.777	0.141
7/6/2015 10:49	71.4	13.771	0.155
7/6/2015 10:49	75.6	13.768	0.163
7/6/2015 10:49	79.8	13.763	0.173
7/6/2015 10:49	84.6	13.754	0.193
7/6/2015 10:49	90	13.749	0.206
7/6/2015 10:49	94.8	13.742	0.222
7/6/2015 10:49	100.8	13.739	0.23
7/6/2015 10:49	106.8	13.731	0.248
7/6/2015 10:49	112.8	13.723	0.265
7/6/2015 10:49	119.4	13.717	0.279
7/6/2015 10:50	126.6	13.712	0.291
7/6/2015 10:50	134.4	13.702	0.314
7/6/2015 10:50	142.2	13.694	0.332
7/6/2015 10:50	150.6	13.687	0.348
7/6/2015 10:50	159.6	13.683	0.358
7/6/2015 10:50	169.2	13.671	0.386
7/6/2015 10:50	178.8	13.662	0.407
7/6/2015 10:51	189.6	13.653	0.427
7/6/2015 10:51	201	13.646	0.444

7/6/2015 10:51	213	13.639	0.461
7/6/2015 10:51	225.6	13.626	0.489
7/6/2015 10:51	238.8	13.618	0.508
7/6/2015 10:52	253.2	13.61	0.526
7/6/2015 10:52	268.2	13.604	0.54
7/6/2015 10:52	283.8	13.592	0.569
7/6/2015 10:52	300.6	13.588	0.576
7/6/2015 10:53	318.6	13.576	0.606
7/6/2015 10:53	337.2	13.565	0.63
7/6/2015 10:53	357.6	13.559	0.643
7/6/2015 10:54	378.6	13.552	0.66
7/6/2015 10:54	400.8	13.542	0.682
7/6/2015 10:55	424.8	13.537	0.695
7/6/2015 10:55	450	13.531	0.709
7/6/2015 10:55	476.4	13.524	0.726
7/6/2015 10:56	504.6	13.516	0.743
7/6/2015 10:56	534.6	13.516	0.744
7/6/2015 10:57	566.4	13.506	0.767
7/6/2015 10:57	600	13.499	0.782
7/6/2015 10:58	636	13.496	0.789
7/6/2015 10:59	672	13.492	0.799
7/6/2015 10:59	714	13.49	0.805
7/6/2015 11:00	756	13.491	0.801
7/6/2015 11:01	798	13.479	0.83
7/6/2015 11:02	846	13.477	0.835
7/6/2015 11:02	900	13.471	0.848
7/6/2015 11:03	948	13.467	0.857
7/6/2015 11:04	1008	13.462	0.867
7/6/2015 11:05	1068	13.461	0.87
7/6/2015 11:06	1128	13.451	0.894
7/6/2015 11:07	1194	13.447	0.903
7/6/2015 11:09	1266	13.438	0.923
7/6/2015 11:10	1344	13.411	0.986
7/6/2015 11:11	1422	13.391	1.032
7/6/2015 11:13	1506	13.37	1.081
7/6/2015 11:14	1596	13.365	1.093
7/6/2015 11:16	1692	13.345	1.138
7/6/2015 11:17	1788	13.34	1.15
7/6/2015 11:19	1896	13.331	1.172
7/6/2015 11:21	2010	13.318	1.2
7/6/2015 11:23	2130	13.315	1.208
7/6/2015 11:25	2256	13.301	1.241
7/6/2015 11:27	2388	13.294	1.256
7/6/2015 11:30	2532	13.284	1.279
7/6/2015 11:32	2682	13.278	1.293
7/6/2015 11:35	2838	13.274	1.303
7/6/2015 11:38	3006	13.265	1.324
7/6/2015 11:41	3186	13.26	1.335
7/6/2015 11:44	3372	13.256	1.344
7/6/2015 11:47	3576	13.249	1.361
7/6/2015 11:51	3786	13.245	1.369
7/6/2015 11:54	4008	13.229	1.406
7/6/2015 11:58	4248	13.231	1.402
7/6/2015 12:02	4500	13.219	1.429
7/6/2015 12:07	4764	13.213	1.444

7/6/2015 12:12	5046	13.208	1.454
7/6/2015 12:17	5346	13.202	1.469
7/6/2015 12:22	5664	13.194	1.488
7/6/2015 12:26	5907.646	13.194	1.487
7/6/2015 12:26	5907.896	13.194	1.486
7/6/2015 12:26	5908.147	13.194	1.486
7/6/2015 12:26	5908.397	13.196	1.483
7/6/2015 12:26	5908.647	13.195	1.484
7/6/2015 12:26	5908.897	13.195	1.484
7/6/2015 12:26	5909.147	13.194	1.488
7/6/2015 12:26	5909.397	13.194	1.487
7/6/2015 12:26	5909.647	13.194	1.488
7/6/2015 12:26	5909.897	13.195	1.484
7/6/2015 12:26	5910.147	13.197	1.48
7/6/2015 12:26	5910.397	13.192	1.493
7/6/2015 12:26	5910.647	13.196	1.482
7/6/2015 12:26	5910.897	13.197	1.481
7/6/2015 12:26	5911.147	13.196	1.482
7/6/2015 12:26	5911.397	13.193	1.49
7/6/2015 12:26	5911.647	13.193	1.49
7/6/2015 12:26	5911.897	13.196	1.484
7/6/2015 12:26	5912.147	13.195	1.485
7/6/2015 12:26	5912.397	13.195	1.485
7/6/2015 12:26	5912.647	13.195	1.484
7/6/2015 12:26	5912.897	13.196	1.483
7/6/2015 12:26	5913.147	13.194	1.488
7/6/2015 12:26	5913.397	13.195	1.485
7/6/2015 12:26	5913.647	13.194	1.488
7/6/2015 12:26	5914.007	13.194	1.487
7/6/2015 12:26	5914.367	13.194	1.487
7/6/2015 12:26	5914.787	13.193	1.489
7/6/2015 12:26	5915.207	13.194	1.487
7/6/2015 12:26	5915.627	13.193	1.49
7/6/2015 12:26	5916.107	13.193	1.489
7/6/2015 12:26	5916.647	13.194	1.488
7/6/2015 12:26	5917.127	13.191	1.494
7/6/2015 12:26	5917.727	13.191	1.495
7/6/2015 12:26	5918.327	13.19	1.496
7/6/2015 12:26	5918.927	13.191	1.494
7/6/2015 12:26	5919.587	13.192	1.492
7/6/2015 12:26	5920.307	13.194	1.487
7/6/2015 12:26	5921.087	13.191	1.493
7/6/2015 12:26	5921.867	13.19	1.497
7/6/2015 12:26	5922.707	13.189	1.498
7/6/2015 12:26	5923.607	13.191	1.495
7/6/2015 12:26	5924.567	13.19	1.495
7/6/2015 12:26	5925.527	13.19	1.497
7/6/2015 12:26	5926.607	13.191	1.494
7/6/2015 12:26	5927.747	13.19	1.497
7/6/2015 12:26	5928.947	13.189	1.498
7/6/2015 12:26	5930.207	13.189	1.498
7/6/2015 12:26	5931.527	13.188	1.5
7/6/2015 12:26	5932.967	13.188	1.5
7/6/2015 12:26	5934.467	13.188	1.501
7/6/2015 12:26	5936.027	13.186	1.506

7/6/2015 12:26	5937.707	13.185	1.507
7/6/2015 12:26	5939.507	13.185	1.508
7/6/2015 12:26	5941.367	13.183	1.511
7/6/2015 12:26	5943.407	13.183	1.513
7/6/2015 12:27	5945.507	13.181	1.518
7/6/2015 12:27	5947.727	13.178	1.524
7/6/2015 12:27	5950.127	13.175	1.531
7/6/2015 12:27	5952.646	13.171	1.54
7/6/2015 12:27	5955.287	13.167	1.549
7/6/2015 12:27	5958.107	13.163	1.559
7/6/2015 12:27	5961.107	13.159	1.569
7/6/2015 12:27	5964.287	13.153	1.582
7/6/2015 12:27	5967.646	13.147	1.595
7/6/2015 12:27	5971.247	13.14	1.611
7/6/2015 12:27	5974.846	13.133	1.627
7/6/2015 12:27	5979.047	13.121	1.657
7/6/2015 12:27	5983.247	13.115	1.669
7/6/2015 12:27	5987.447	13.106	1.691
7/6/2015 12:27	5992.247	13.094	1.717
7/6/2015 12:27	5997.646	13.084	1.741
7/6/2015 12:27	6002.447	13.067	1.779
7/6/2015 12:28	6008.447	13.057	1.804
7/6/2015 12:28	6014.447	13.041	1.84
7/6/2015 12:28	6020.447	13.026	1.874
7/6/2015 12:28	6027.046	13.01	1.911
7/6/2015 12:28	6034.247	12.988	1.963
7/6/2015 12:28	6042.046	12.972	2
7/6/2015 12:28	6049.846	12.949	2.054
7/6/2015 12:28	6058.247	12.932	2.092
7/6/2015 12:29	6067.247	12.913	2.136
7/6/2015 12:29	6076.846	12.892	2.185
7/6/2015 12:29	6086.447	12.874	2.226
7/6/2015 12:29	6097.246	12.856	2.267
7/6/2015 12:29	6108.646	12.84	2.305
7/6/2015 12:29	6120.646	12.824	2.342
7/6/2015 12:30	6133.246	12.808	2.379
7/6/2015 12:30	6146.447	12.792	2.415
7/6/2015 12:30	6160.847	12.784	2.434
7/6/2015 12:30	6175.847	12.772	2.462
7/6/2015 12:31	6191.447	12.76	2.49
7/6/2015 12:31	6208.247	12.752	2.508
7/6/2015 12:31	6226.247	12.745	2.524
7/6/2015 12:32	6244.847	12.74	2.536
7/6/2015 12:32	6265.247	12.733	2.552
7/6/2015 12:32	6286.247	12.728	2.564
7/6/2015 12:33	6308.447	12.724	2.572
7/6/2015 12:33	6332.447	12.721	2.58
7/6/2015 12:33	6357.647	12.72	2.582
7/6/2015 12:34	6384.047	12.711	2.603
7/6/2015 12:34	6412.247	12.706	2.613
7/6/2015 12:35	6442.247	12.702	2.623
7/6/2015 12:35	6474.047	12.7	2.627
7/6/2015 12:36	6507.646	12.691	2.65
7/6/2015 12:36	6543.646	12.682	2.669
7/6/2015 12:37	6579.646	12.674	2.688

7/6/2015 12:38	6621.646	12.666	2.707
7/6/2015 12:38	6663.646	12.661	2.718
7/6/2015 12:39	6705.646	12.653	2.736
7/6/2015 12:40	6753.646	12.648	2.748
7/6/2015 12:41	6807.646	12.636	2.775
7/6/2015 12:42	6855.646	12.631	2.787
7/6/2015 12:43	6915.646	12.621	2.81
7/6/2015 12:44	6975.646	12.608	2.84
7/6/2015 12:45	7035.646	12.603	2.852
7/6/2015 12:46	7101.646	12.595	2.87
7/6/2015 12:47	7173.646	12.579	2.907
7/6/2015 12:48	7251.646	12.56	2.951
7/6/2015 12:50	7329.646	12.547	2.98
7/6/2015 12:51	7413.646	12.532	3.015
7/6/2015 12:52	7503.646	12.521	3.04
7/6/2015 12:54	7599.646	12.51	3.067
7/6/2015 12:56	7695.646	12.501	3.087
7/6/2015 12:57	7803.646	12.479	3.137
7/6/2015 12:59	7917.646	12.475	3.148
7/6/2015 13:01	8037.646	12.465	3.169
7/6/2015 13:03	8163.646	12.447	3.211
7/6/2015 13:06	8295.646	12.44	3.229
7/6/2015 13:08	8439.646	12.433	3.244
7/6/2015 13:11	8589.646	12.425	3.264
7/6/2015 13:13	8745.646	12.407	3.305
7/6/2015 13:16	8913.646	12.396	3.331
7/6/2015 13:19	9093.646	12.378	3.372
7/6/2015 13:22	9279.646	12.366	3.399
7/6/2015 13:25	9483.646	12.354	3.426
7/6/2015 13:29	9693.646	12.335	3.471
7/6/2015 13:33	9915.646	12.328	3.488
7/6/2015 13:37	10155.646	12.312	3.524
7/6/2015 13:41	10407.646	12.299	3.554
7/6/2015 13:45	10671.646	12.28	3.598
7/6/2015 13:50	10953.646	12.26	3.644
7/6/2015 13:55	11253.646	12.239	3.693
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7/6/2015 14:06	11907.646	12.211	3.757
7/6/2015 14:12	12267.646	12.194	3.795
7/6/2015 14:18	12627.646	12.179	3.831
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7/6/2015 14:32	13467.646	12.133	3.937
7/6/2015 14:36	13705.21	12.131	3.942
7/6/2015 14:36	13705.461	12.13	3.945
7/6/2015 14:36	13705.711	12.128	3.949
7/6/2015 14:36	13705.961	12.13	3.944
7/6/2015 14:36	13706.211	12.131	3.941
7/6/2015 14:36	13706.461	12.129	3.946
7/6/2015 14:36	13706.711	12.129	3.945
7/6/2015 14:36	13706.961	12.13	3.943
7/6/2015 14:36	13707.211	12.127	3.95
7/6/2015 14:36	13707.461	12.127	3.95
7/6/2015 14:36	13707.711	12.127	3.951
7/6/2015 14:36	13707.961	12.129	3.945
7/6/2015 14:36	13708.211	12.131	3.941

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7/6/2015 14:36	13712.771	12.128	3.947
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7/6/2015 14:36	13716.491	12.129	3.947
7/6/2015 14:36	13717.151	12.124	3.959
7/6/2015 14:36	13717.871	12.126	3.953
7/6/2015 14:36	13718.651	12.126	3.954
7/6/2015 14:36	13719.431	12.124	3.957
7/6/2015 14:36	13720.271	12.126	3.953
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7/6/2015 14:36	13722.131	12.125	3.954
7/6/2015 14:36	13723.091	12.123	3.96
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7/6/2015 14:36	13726.511	12.126	3.952
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7/6/2015 14:36	13729.091	12.124	3.957
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7/6/2015 14:36	13732.031	12.124	3.959
7/6/2015 14:36	13733.591	12.123	3.959
7/6/2015 14:36	13735.271	12.124	3.958
7/6/2015 14:36	13737.071	12.123	3.96
7/6/2015 14:36	13738.931	12.123	3.959
7/6/2015 14:36	13740.971	12.123	3.959
7/6/2015 14:36	13743.071	12.123	3.96
7/6/2015 14:37	13745.291	12.123	3.96
7/6/2015 14:37	13747.691	12.12	3.966
7/6/2015 14:37	13750.211	12.122	3.963
7/6/2015 14:37	13752.851	12.122	3.963
7/6/2015 14:37	13755.671	12.119	3.969
7/6/2015 14:37	13758.671	12.121	3.964
7/6/2015 14:37	13761.851	12.121	3.964
7/6/2015 14:37	13765.211	12.12	3.967
7/6/2015 14:37	13768.811	12.12	3.967
7/6/2015 14:37	13772.411	12.119	3.968
7/6/2015 14:37	13776.611	12.116	3.977

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7/6/2015 14:37	13785.011	12.114	3.981
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7/6/2015 14:37	13795.211	12.114	3.982
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7/6/2015 14:38	13806.011	12.118	3.972
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7/6/2015 14:38	13818.011	12.111	3.987
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7/6/2015 14:38	13831.811	12.114	3.98
7/6/2015 14:38	13839.611	12.113	3.983
7/6/2015 14:38	13847.411	12.11	3.989
7/6/2015 14:38	13855.811	12.11	3.99
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7/6/2015 14:43	14130.011	12.031	4.172
7/6/2015 14:43	14155.211	12.011	4.219
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7/6/2015 14:44	14209.811	11.972	4.309
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7/6/2015 14:45	14271.611	11.931	4.404
7/6/2015 14:46	14305.211	11.916	4.437
7/6/2015 14:46	14341.211	11.903	4.469
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7/6/2015 15:02	15301.211	11.712	4.909
7/6/2015 15:04	15397.211	11.695	4.948

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7/6/2015 15:18	16237.211	11.609	5.146
7/6/2015 15:21	16387.211	11.604	5.159
7/6/2015 15:23	16543.211	11.592	5.186
7/6/2015 15:26	16711.211	11.576	5.224
7/6/2015 15:29	16891.211	11.557	5.268
7/6/2015 15:32	17077.211	11.549	5.286
7/6/2015 15:35	17281.211	11.541	5.304
7/6/2015 15:39	17491.211	11.53	5.328
7/6/2015 15:43	17713.211	11.52	5.353
7/6/2015 15:47	17953.211	11.501	5.396
7/6/2015 15:51	18205.211	11.473	5.461
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7/6/2015 16:42	21265.211	11.307	5.844
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7/6/2015 16:47	21579.057	11.296	5.869
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7/6/2015 16:47	21581.307	11.295	5.872
7/6/2015 16:47	21581.557	11.297	5.867
7/6/2015 16:47	21581.807	11.298	5.865
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7/6/2015 16:47	21582.807	11.298	5.866
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7/6/2015 16:47	21585.767	11.297	5.868
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7/6/2015 16:47	21586.787	11.296	5.869
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7/6/2015 16:47	21590.747	11.293	5.876
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7/6/2015 16:47	21592.367	11.293	5.876
7/6/2015 16:47	21593.267	11.296	5.869
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7/6/2015 16:47	21595.187	11.293	5.877
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7/6/2015 16:47	21597.407	11.293	5.877
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7/6/2015 16:47	21599.867	11.293	5.877
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7/6/2015 16:47	21604.127	11.29	5.883
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7/6/2015 16:48	21630.767	11.271	5.926
7/6/2015 16:48	21633.947	11.269	5.931
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7/6/2015 16:48	21640.907	11.262	5.948
7/6/2015 16:48	21644.507	11.258	5.958
7/6/2015 16:48	21648.707	11.253	5.969
7/6/2015 16:48	21652.907	11.244	5.99
7/6/2015 16:48	21657.107	11.242	5.994
7/6/2015 16:48	21661.907	11.236	6.009
7/6/2015 16:49	21667.307	11.226	6.03
7/6/2015 16:49	21672.107	11.219	6.047
7/6/2015 16:49	21678.107	11.214	6.058
7/6/2015 16:49	21684.107	11.205	6.079
7/6/2015 16:49	21690.107	11.194	6.106
7/6/2015 16:49	21696.707	11.186	6.123
7/6/2015 16:49	21703.907	11.172	6.155
7/6/2015 16:49	21711.707	11.164	6.174
7/6/2015 16:49	21719.507	11.148	6.21
7/6/2015 16:50	21727.907	11.139	6.231
7/6/2015 16:50	21736.907	11.126	6.263
7/6/2015 16:50	21746.507	11.11	6.299
7/6/2015 16:50	21756.107	11.096	6.332

7/6/2015 16:50	21766.907	11.08	6.369
7/6/2015 16:50	21778.307	11.064	6.406
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7/6/2015 16:51	21802.907	11.029	6.486
7/6/2015 16:51	21816.107	11.012	6.525
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7/6/2015 16:52	21877.907	10.942	6.686
7/6/2015 16:52	21895.907	10.927	6.721
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7/6/2015 16:53	21955.907	10.884	6.821
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7/6/2015 16:54	22002.107	10.855	6.888
7/6/2015 16:55	22027.307	10.844	6.913
7/6/2015 16:55	22053.707	10.832	6.941
7/6/2015 16:55	22081.907	10.824	6.96
7/6/2015 16:56	22111.907	10.811	6.989
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7/6/2015 16:57	22177.307	10.785	7.05
7/6/2015 16:58	22213.307	10.777	7.069
7/6/2015 16:58	22249.307	10.762	7.103
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7/6/2015 17:00	22375.307	10.724	7.189
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7/6/2015 17:03	22525.307	10.683	7.285
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7/6/2015 17:11	22999.307	10.572	7.541
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7/6/2015 17:14	23173.307	10.543	7.609
7/6/2015 17:15	23269.307	10.524	7.651
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7/6/2015 17:19	23473.307	10.494	7.72
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7/6/2015 17:25	23833.307	10.439	7.847
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7/6/2015 17:34	24415.307	10.362	8.027
7/6/2015 17:37	24583.307	10.344	8.067
7/6/2015 17:40	24763.307	10.321	8.12
7/6/2015 17:43	24949.307	10.303	8.162
7/6/2015 17:47	25153.307	10.279	8.218
7/6/2015 17:50	25363.307	10.257	8.269
7/6/2015 17:54	25585.307	10.235	8.319
7/6/2015 17:58	25825.307	10.213	8.37

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7/6/2015 18:06	26341.307	10.166	8.48
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7/6/2015 18:16	26923.307	10.097	8.637
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7/6/2015 18:27	27577.307	10.056	8.734
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7/6/2015 18:39	28297.307	10	8.862
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7/6/2015 19:00	29549.326	9.911	9.068
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7/6/2015 19:00	29550.077	9.911	9.067
7/6/2015 19:00	29550.327	9.911	9.068
7/6/2015 19:00	29550.577	9.911	9.068
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7/6/2015 19:00	29551.327	9.91	9.07
7/6/2015 19:00	29551.577	9.91	9.071
7/6/2015 19:00	29551.827	9.909	9.073
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7/6/2015 19:00	29552.327	9.911	9.068
7/6/2015 19:00	29552.577	9.91	9.071
7/6/2015 19:00	29552.827	9.909	9.072
7/6/2015 19:00	29553.077	9.912	9.066
7/6/2015 19:00	29553.327	9.912	9.066
7/6/2015 19:00	29553.577	9.911	9.067
7/6/2015 19:00	29553.827	9.911	9.067
7/6/2015 19:00	29554.077	9.911	9.069
7/6/2015 19:00	29554.327	9.91	9.07
7/6/2015 19:00	29554.577	9.911	9.068
7/6/2015 19:00	29554.827	9.911	9.068
7/6/2015 19:00	29555.077	9.91	9.07
7/6/2015 19:00	29555.327	9.91	9.07
7/6/2015 19:00	29555.687	9.909	9.073
7/6/2015 19:00	29556.047	9.911	9.068
7/6/2015 19:00	29556.467	9.91	9.071
7/6/2015 19:00	29556.887	9.909	9.071
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7/6/2015 19:00	29557.787	9.91	9.07
7/6/2015 19:00	29558.327	9.911	9.069
7/6/2015 19:00	29558.807	9.91	9.069
7/6/2015 19:00	29559.407	9.906	9.079
7/6/2015 19:00	29560.007	9.908	9.075
7/6/2015 19:00	29560.607	9.906	9.08
7/6/2015 19:00	29561.267	9.906	9.078
7/6/2015 19:00	29561.987	9.909	9.072
7/6/2015 19:00	29562.767	9.909	9.071
7/6/2015 19:00	29563.547	9.91	9.069
7/6/2015 19:00	29564.387	9.908	9.075
7/6/2015 19:00	29565.287	9.908	9.075
7/6/2015 19:00	29566.247	9.908	9.074
7/6/2015 19:00	29567.207	9.908	9.074
7/6/2015 19:00	29568.287	9.908	9.074

7/6/2015 19:00	29569.427	9.91	9.069
7/6/2015 19:00	29570.627	9.909	9.073
7/6/2015 19:00	29571.887	9.91	9.069
7/6/2015 19:00	29573.207	9.91	9.07
7/6/2015 19:00	29574.647	9.912	9.066
7/6/2015 19:00	29576.147	9.913	9.063
7/6/2015 19:00	29577.707	9.914	9.061
7/6/2015 19:00	29579.387	9.915	9.059
7/6/2015 19:00	29581.187	9.917	9.053
7/6/2015 19:00	29583.047	9.918	9.051
7/6/2015 19:01	29585.087	9.921	9.044
7/6/2015 19:01	29587.187	9.923	9.039
7/6/2015 19:01	29589.407	9.926	9.032
7/6/2015 19:01	29591.807	9.929	9.026
7/6/2015 19:01	29594.327	9.934	9.014
7/6/2015 19:01	29596.967	9.938	9.005
7/6/2015 19:01	29599.787	9.942	8.995
7/6/2015 19:01	29602.787	9.949	8.98
7/6/2015 19:01	29605.967	9.956	8.963
7/6/2015 19:01	29609.327	9.963	8.947
7/6/2015 19:01	29612.927	9.972	8.926
7/6/2015 19:01	29616.527	9.981	8.905
7/6/2015 19:01	29620.727	9.992	8.881
7/6/2015 19:01	29624.927	10.004	8.853
7/6/2015 19:01	29629.127	10.017	8.822
7/6/2015 19:01	29633.927	10.032	8.787
7/6/2015 19:01	29639.327	10.05	8.746
7/6/2015 19:01	29644.127	10.065	8.712
7/6/2015 19:02	29650.127	10.087	8.661
7/6/2015 19:02	29656.127	10.109	8.611
7/6/2015 19:02	29662.127	10.13	8.561
7/6/2015 19:02	29668.727	10.154	8.506
7/6/2015 19:02	29675.927	10.183	8.44
7/6/2015 19:02	29683.727	10.212	8.373
7/6/2015 19:02	29691.527	10.243	8.3
7/6/2015 19:02	29699.927	10.274	8.23
7/6/2015 19:03	29708.927	10.309	8.148
7/6/2015 19:03	29718.527	10.345	8.064
7/6/2015 19:03	29728.127	10.378	7.99
7/6/2015 19:03	29738.927	10.42	7.893
7/6/2015 19:03	29750.327	10.46	7.799
7/6/2015 19:03	29762.327	10.502	7.702
7/6/2015 19:04	29774.927	10.541	7.613
7/6/2015 19:04	29788.127	10.585	7.512
7/6/2015 19:04	29802.527	10.627	7.414
7/6/2015 19:04	29817.527	10.673	7.308
7/6/2015 19:05	29833.127	10.715	7.21
7/6/2015 19:05	29849.927	10.76	7.108
7/6/2015 19:05	29867.927	10.799	7.016
7/6/2015 19:06	29886.527	10.846	6.908
7/6/2015 19:06	29906.927	10.889	6.81
7/6/2015 19:06	29927.927	10.932	6.711
7/6/2015 19:07	29950.127	10.971	6.621
7/6/2015 19:07	29974.127	11.014	6.521
7/6/2015 19:07	29999.327	11.053	6.431

7/6/2015 19:08	30025.727	11.095	6.333
7/6/2015 19:08	30053.927	11.133	6.247
7/6/2015 19:09	30083.927	11.174	6.151
7/6/2015 19:09	30115.727	11.212	6.064
7/6/2015 19:10	30149.327	11.252	5.972
7/6/2015 19:11	30185.327	11.291	5.882
7/6/2015 19:11	30221.327	11.323	5.807
7/6/2015 19:12	30263.327	11.362	5.718
7/6/2015 19:13	30305.327	11.401	5.627
7/6/2015 19:13	30347.327	11.433	5.553
7/6/2015 19:14	30395.327	11.47	5.468
7/6/2015 19:15	30449.327	11.508	5.38
7/6/2015 19:16	30497.327	11.543	5.298
7/6/2015 19:17	30557.327	11.578	5.219
7/6/2015 19:18	30617.327	11.614	5.136
7/6/2015 19:19	30677.327	11.647	5.06
7/6/2015 19:20	30743.327	11.681	4.981
7/6/2015 19:21	30815.327	11.716	4.9
7/6/2015 19:22	30893.327	11.752	4.817
7/6/2015 19:24	30971.327	11.786	4.738
7/6/2015 19:25	31055.327	11.821	4.658
7/6/2015 19:27	31145.327	11.856	4.577
7/6/2015 19:28	31241.327	11.887	4.505
7/6/2015 19:30	31337.327	11.922	4.423
7/6/2015 19:32	31445.327	11.952	4.356
7/6/2015 19:33	31559.327	11.988	4.273
7/6/2015 19:35	31679.327	12.021	4.195
7/6/2015 19:38	31805.327	12.058	4.11
7/6/2015 19:40	31937.327	12.087	4.044
7/6/2015 19:42	32081.327	12.121	3.964
7/6/2015 19:45	32231.327	12.154	3.89
7/6/2015 19:47	32387.327	12.184	3.818
7/6/2015 19:50	32555.327	12.217	3.742
7/6/2015 19:53	32735.327	12.251	3.665
7/6/2015 19:56	32921.327	12.283	3.59
7/6/2015 20:00	33125.327	12.317	3.512
7/6/2015 20:03	33335.327	12.351	3.434
7/6/2015 20:07	33557.327	12.382	3.361
7/6/2015 20:11	33797.327	12.416	3.283
7/6/2015 20:15	34049.327	12.45	3.206
7/6/2015 20:19	34313.327	12.483	3.129
7/6/2015 20:24	34595.327	12.517	3.05
7/6/2015 20:29	34895.327	12.55	2.975
7/6/2015 20:34	35213.327	12.583	2.898
7/6/2015 20:40	35549.327	12.616	2.821
7/6/2015 20:46	35909.327	12.648	2.747
7/6/2015 20:52	36269.327	12.681	2.671
7/6/2015 20:59	36689.327	12.718	2.586
7/6/2015 21:06	37109.327	12.747	2.518
7/6/2015 21:13	37529.327	12.776	2.452
7/6/2015 21:21	38009.327	12.812	2.369
7/6/2015 21:30	38549.327	12.847	2.289
7/6/2015 21:38	39029.327	12.876	2.222
7/6/2015 21:48	39629.327	12.913	2.137
7/6/2015 21:58	40229.327	12.94	2.073

7/6/2015 22:08	40829.327	12.974	1.996
7/6/2015 22:19	41489.327	13.006	1.922
7/6/2015 22:31	42209.327	13.034	1.856
7/6/2015 22:44	42989.327	13.067	1.78
7/6/2015 22:57	43769.327	13.098	1.709
7/6/2015 23:11	44609.327	13.127	1.641
7/6/2015 23:26	45509.327	13.159	1.568
7/6/2015 23:42	46469.327	13.187	1.504
7/6/2015 23:58	47429.327	13.22	1.426
7/7/2015 0:16	48509.327	13.25	1.357
7/7/2015 0:35	49649.327	13.28	1.289
7/7/2015 0:55	50849.327	13.307	1.226
7/7/2015 1:16	52109.327	13.336	1.16
7/7/2015 1:38	53429.327	13.364	1.095
7/7/2015 2:02	54869.327	13.386	1.045
7/7/2015 2:27	56369.327	13.366	1.09
7/7/2015 2:53	57929.327	13.328	1.177
7/7/2015 3:21	59609.327	13.274	1.303
7/7/2015 3:51	61409.327	13.204	1.463
7/7/2015 4:22	63269.327	13.184	1.511
7/7/2015 4:56	65309.327	13.218	1.433
7/7/2015 5:31	67409.327	13.263	1.327
7/7/2015 6:08	69629.327	13.311	1.217
7/7/2015 6:48	72029.327	13.355	1.114
7/7/2015 7:30	74549.327	13.38	1.058
7/7/2015 8:14	77189.327	13.423	0.957
7/7/2015 9:01	80009.327	13.463	0.866

Report Date:	7/10/2015 10:20
Report User Name:	3367tml
Report Computer Name:	01POR-TANDREWS
Application:	WinSitu.exe
Application Version:	5.6.25.0

Log File Properties

File Name	MW-1ACON_Append_2015-07-10_10-20-44-114.wsl
Create Date	7/10/2015 10:20

Device Properties

Device	Level TROLL 700		
Site	MW-1A		
Device Name			
Serial Number	163262		
Firmware Version	2.09		
Hardware Version	3		
Device Address	4		
Device Comm Cfg	19200	8	None 1
	None	1	(Modbus-ASCII)
Used Memory	1		
Used Battery	33		

Log Configuration

Log Name	MW-1ACON
Created By	3367tml
Computer Name	01POR-TANDREWS
Application	WinSitu.exe
Application Version	5.6.25.0
Create Date	7/7/2015 9:26:10 AM Pacific Daylight Time
Log Setup Time Zone	Pacific Daylight Time
Notes Size(bytes)	4096
Overwrite when full	Disabled
Scheduled Start Time	Manual Start
Scheduled Stop Time	No Stop Time
Type	True Logarithmic
Max Interval	Days: 2 hrs: 00 mins: 00 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode	Level Depth To Water
Specific Gravity	0.999
Level Reference Mode:	Set new reference
Level Reference Value:	0 (ft)
Level Reference Head Pressure	13.4796 (PSI)

Other Log Settings

Depth of Probe:	31.1276 (ft)
Head Pressure:	13.4812 (PSI)
Temperature:	13.069 (C)

Log Notes:

Date and Time	Note
7/7/2015 9:26	Used Battery: 33% Used Memory: 3% User Name: 3367tml
7/7/2015 9:45	Manual Start Command
7/7/2015 10:22	Log Download - Used Battery: 33% Used Memory: 3% User Name: 3367tml
7/7/2015 10:23	Log Download - Used Battery: 33% Used Memory: 3% User Name: 3367tml
7/7/2015 15:13	Log Download - Used Battery: 33% Used Memory: 3% User Name: 3367tml
7/7/2015 20:02	Log Download - Used Battery: 33% Used Memory: 3% User Name: 3367tml
7/8/2015 9:59	Restart Command
7/8/2015 10:07	Log Download - Used Battery: 33% Used Memory: 3% User Name: 3698bjm
7/10/2015 10:20	Used Battery: 33% Used Memory: 3% User Name: 3367tml
7/10/2015 10:20	Manual Stop Command

Log Data:

Record Count		394	
Sensors		1	
	1	10163262	Pressure/Temp 30 PSIG (21m/69ft)

Time Zone: Pacific Daylight Time

Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 69ft SN#: 10163262 Level Depth To Water (ft)	Sensor: Pres(G) 69ft SN#: 10163262 Pressure (PSI)
7/7/2015 9:45	0	-0.063	13.507
7/7/2015 9:45	0.25	-0.062	13.507
7/7/2015 9:45	0.5	-0.059	13.505
7/7/2015 9:45	0.75	-0.054	13.503
7/7/2015 9:45	1	-0.06	13.506
7/7/2015 9:45	1.25	-0.055	13.503
7/7/2015 9:45	1.5	-0.048	13.501
7/7/2015 9:45	1.75	-0.058	13.505
7/7/2015 9:45	2	-0.081	13.515
7/7/2015 9:45	2.292	-0.07	13.51
7/7/2015 9:45	2.511	-0.059	13.505
7/7/2015 9:45	2.75	-0.051	13.502
7/7/2015 9:45	3	-0.072	13.511
7/7/2015 9:45	3.25	-0.047	13.5
7/7/2015 9:45	3.5	-0.062	13.506
7/7/2015 9:45	3.75	-0.058	13.505
7/7/2015 9:45	4	-0.055	13.503
7/7/2015 9:45	4.25	-0.073	13.511
7/7/2015 9:45	4.5	-0.051	13.502
7/7/2015 9:45	4.75	-0.053	13.502
7/7/2015 9:45	5	-0.063	13.507
7/7/2015 9:45	5.25	-0.054	13.503
7/7/2015 9:45	5.5	-0.057	13.504
7/7/2015 9:45	5.75	-0.062	13.506
7/7/2015 9:45	6	-0.052	13.502
7/7/2015 9:45	6.36	-0.055	13.503
7/7/2015 9:45	6.72	-0.067	13.508
7/7/2015 9:45	7.14	-0.051	13.502

7/7/2015 9:45	7.56	-0.048	13.5
7/7/2015 9:45	7.98	-0.063	13.507
7/7/2015 9:45	8.46	-0.061	13.506
7/7/2015 9:45	9	-0.058	13.505
7/7/2015 9:45	9.48	-0.052	13.502
7/7/2015 9:45	10.08	-0.057	13.504
7/7/2015 9:45	10.68	-0.052	13.502
7/7/2015 9:45	11.28	-0.048	13.501
7/7/2015 9:45	11.94	-0.05	13.501
7/7/2015 9:45	12.66	-0.057	13.504
7/7/2015 9:45	13.44	-0.055	13.504
7/7/2015 9:45	14.22	-0.055	13.504
7/7/2015 9:45	15.06	-0.053	13.503
7/7/2015 9:45	15.96	-0.045	13.499
7/7/2015 9:45	16.92	-0.051	13.502
7/7/2015 9:45	17.88	-0.053	13.502
7/7/2015 9:45	18.96	-0.05	13.501
7/7/2015 9:45	20.1	-0.051	13.502
7/7/2015 9:45	21.3	-0.057	13.504
7/7/2015 9:45	22.56	-0.055	13.503
7/7/2015 9:45	23.88	-0.049	13.501
7/7/2015 9:45	25.32	-0.054	13.503
7/7/2015 9:45	26.82	-0.063	13.507
7/7/2015 9:45	28.38	-0.053	13.502
7/7/2015 9:45	30.06	-0.052	13.502
7/7/2015 9:45	31.86	-0.047	13.5
7/7/2015 9:45	33.72	-0.044	13.499
7/7/2015 9:45	35.76	-0.032	13.493
7/7/2015 9:45	37.86	-0.037	13.496
7/7/2015 9:45	40.08	-0.047	13.5
7/7/2015 9:45	42.48	-0.032	13.493
7/7/2015 9:45	45	-0.028	13.492
7/7/2015 9:45	47.64	-0.025	13.491
7/7/2015 9:45	50.46	-0.015	13.486
7/7/2015 9:45	53.46	-0.022	13.489
7/7/2015 9:45	56.64	-0.002	13.481
7/7/2015 9:46	60	0.003	13.478
7/7/2015 9:46	63.6	0.012	13.475
7/7/2015 9:46	67.2	0.015	13.473
7/7/2015 9:46	71.4	0.043	13.461
7/7/2015 9:46	75.6	0.059	13.454
7/7/2015 9:46	79.8	0.071	13.449
7/7/2015 9:46	84.6	0.096	13.438
7/7/2015 9:46	90	0.116	13.429
7/7/2015 9:46	94.8	0.136	13.421
7/7/2015 9:46	100.8	0.164	13.409
7/7/2015 9:46	106.8	0.21	13.389
7/7/2015 9:46	112.8	0.226	13.382
7/7/2015 9:47	119.4	0.279	13.359
7/7/2015 9:47	126.6	0.323	13.34
7/7/2015 9:47	134.4	0.388	13.311
7/7/2015 9:47	142.2	0.458	13.281
7/7/2015 9:47	150.6	0.528	13.251
7/7/2015 9:47	159.6	0.611	13.215
7/7/2015 9:47	169.2	0.706	13.174

7/7/2015 9:48	178.8	0.792	13.136
7/7/2015 9:48	189.6	0.903	13.089
7/7/2015 9:48	201	1.005	13.044
7/7/2015 9:48	213	1.102	13.002
7/7/2015 9:48	225.6	1.208	12.957
7/7/2015 9:49	238.8	1.319	12.908
7/7/2015 9:49	253.2	1.432	12.859
7/7/2015 9:49	268.2	1.544	12.811
7/7/2015 9:49	283.8	1.649	12.765
7/7/2015 9:50	300.6	1.762	12.717
7/7/2015 9:50	318.6	1.866	12.672
7/7/2015 9:50	337.2	1.979	12.622
7/7/2015 9:51	357.6	2.077	12.58
7/7/2015 9:51	378.6	2.175	12.538
7/7/2015 9:51	400.8	2.257	12.502
7/7/2015 9:52	424.8	2.36	12.457
7/7/2015 9:52	450	2.439	12.423
7/7/2015 9:52	476.4	2.514	12.391
7/7/2015 9:53	504.6	2.607	12.351
7/7/2015 9:53	534.6	2.692	12.314
7/7/2015 9:54	566.4	2.767	12.281
7/7/2015 9:55	600	2.848	12.246
7/7/2015 9:55	636	2.927	12.212
7/7/2015 9:56	672	2.995	12.183
7/7/2015 9:56	714	3.08	12.146
7/7/2015 9:57	756	3.156	12.113
7/7/2015 9:58	798	3.229	12.081
7/7/2015 9:59	846	3.307	12.047
7/7/2015 10:00	900	3.385	12.014
7/7/2015 10:00	948	3.445	11.988
7/7/2015 10:01	1008	3.534	11.949
7/7/2015 10:02	1068	3.6	11.921
7/7/2015 10:03	1128	3.68	11.886
7/7/2015 10:04	1194	3.759	11.851
7/7/2015 10:06	1266	3.86	11.808
7/7/2015 10:07	1344	3.954	11.767
7/7/2015 10:08	1422	4.016	11.74
7/7/2015 10:10	1506	4.081	11.712
7/7/2015 10:11	1596	4.145	11.684
7/7/2015 10:13	1692	4.204	11.659
7/7/2015 10:14	1788	4.273	11.629
7/7/2015 10:16	1896	4.338	11.601
7/7/2015 10:18	2010	4.412	11.569
7/7/2015 10:20	2130	4.485	11.537
7/7/2015 10:22	2256	4.556	11.506
7/7/2015 10:24	2388	4.617	11.48
7/7/2015 10:27	2532	4.696	11.446
7/7/2015 10:29	2682	4.767	11.415
7/7/2015 10:32	2838	4.842	11.383
7/7/2015 10:35	3006	4.919	11.349
7/7/2015 10:38	3186	4.981	11.322
7/7/2015 10:41	3372	5.097	11.272
7/7/2015 10:44	3576	5.152	11.248
7/7/2015 10:48	3786	5.208	11.224
7/7/2015 10:51	4008	5.288	11.189

7/7/2015 10:55	4248	5.354	11.161
7/7/2015 11:00	4500	5.431	11.127
7/7/2015 11:04	4764	5.525	11.087
7/7/2015 11:09	5046	5.592	11.058
7/7/2015 11:14	5346	5.677	11.021
7/7/2015 11:19	5664	5.769	10.981
7/7/2015 11:25	6000	5.867	10.938
7/7/2015 11:31	6360	5.942	10.906
7/7/2015 11:37	6720	6.008	10.878
7/7/2015 11:44	7140	6.087	10.843
7/7/2015 11:51	7560	6.187	10.8
7/7/2015 11:58	7980	6.276	10.761
7/7/2015 12:06	8460	6.362	10.724
7/7/2015 12:15	9000	6.46	10.682
7/7/2015 12:23	9480	6.537	10.649
7/7/2015 12:33	10080	6.639	10.604
7/7/2015 12:43	10680	6.729	10.565
7/7/2015 12:53	11280	6.816	10.528
7/7/2015 13:04	11940	6.928	10.479
7/7/2015 13:16	12660	7.009	10.444
7/7/2015 13:29	13440	7.102	10.404
7/7/2015 13:42	14220	7.211	10.357
7/7/2015 13:56	15060	7.32	10.309
7/7/2015 14:11	15960	7.446	10.255
7/7/2015 14:27	16920	7.583	10.195
7/7/2015 14:43	17880	7.707	10.142
7/7/2015 15:01	18960	7.787	10.107
7/7/2015 15:20	20100	7.885	10.065
7/7/2015 15:40	21300	7.997	10.016
7/7/2015 16:01	22560	8.1	9.971
7/7/2015 16:23	23880	8.198	9.929
7/7/2015 16:47	25320	8.295	9.887
7/7/2015 17:12	26820	8.398	9.842
7/7/2015 17:38	28380	8.513	9.792
7/7/2015 18:06	30060	8.635	9.74
7/7/2015 18:36	31860	8.73	9.699
7/7/2015 19:07	33720	8.841	9.65
7/7/2015 19:41	35760	8.956	9.601
7/7/2015 20:16	37860	9.063	9.554
7/7/2015 20:53	40080	9.185	9.502
7/7/2015 21:33	42480	9.315	9.445
7/7/2015 22:15	45000	9.434	9.394
7/7/2015 22:59	47640	9.551	9.343
7/7/2015 23:46	50460	9.679	9.288
7/8/2015 0:36	53460	9.859	9.209
7/8/2015 1:29	56640	10.021	9.14
7/8/2015 2:25	60000	10.3	9.019
7/8/2015 3:25	63600	10.805	8.8
7/8/2015 4:25	67200	11.143	8.654
7/8/2015 5:35	71400	11.076	8.683
7/8/2015 6:45	75600	11.047	8.695
7/8/2015 7:55	79800	11.023	8.706
7/8/2015 9:15	84600	11.005	8.714
7/8/2015 9:59	87266.508	10.943	8.74
7/8/2015 9:59	87266.759	10.947	8.739

7/8/2015 9:59	87267.009	10.95	8.737
7/8/2015 9:59	87267.259	10.951	8.737
7/8/2015 9:59	87267.509	10.943	8.74
7/8/2015 9:59	87267.759	10.941	8.741
7/8/2015 9:59	87268.009	10.947	8.739
7/8/2015 9:59	87268.259	10.951	8.737
7/8/2015 9:59	87268.509	10.951	8.737
7/8/2015 9:59	87268.759	10.95	8.737
7/8/2015 9:59	87269.009	10.941	8.741
7/8/2015 9:59	87269.259	10.937	8.743
7/8/2015 9:59	87269.509	10.947	8.738
7/8/2015 9:59	87269.759	10.949	8.738
7/8/2015 9:59	87270.009	10.949	8.738
7/8/2015 9:59	87270.259	10.943	8.74
7/8/2015 9:59	87270.509	10.932	8.745
7/8/2015 9:59	87270.759	10.944	8.74
7/8/2015 9:59	87271.009	10.945	8.739
7/8/2015 9:59	87271.259	10.937	8.743
7/8/2015 9:59	87271.509	10.949	8.738
7/8/2015 9:59	87271.759	10.949	8.738
7/8/2015 9:59	87272.009	10.948	8.738
7/8/2015 9:59	87272.259	10.937	8.743
7/8/2015 9:59	87272.509	10.946	8.739
7/8/2015 9:59	87272.869	10.946	8.739
7/8/2015 9:59	87273.229	10.944	8.74
7/8/2015 9:59	87273.649	10.944	8.74
7/8/2015 9:59	87274.069	10.949	8.738
7/8/2015 9:59	87274.489	10.956	8.734
7/8/2015 9:59	87274.969	10.943	8.74
7/8/2015 9:59	87275.509	10.952	8.736
7/8/2015 9:59	87275.989	10.944	8.74
7/8/2015 9:59	87276.589	10.947	8.739
7/8/2015 9:59	87277.189	10.941	8.741
7/8/2015 9:59	87277.789	10.939	8.742
7/8/2015 9:59	87278.449	10.943	8.74
7/8/2015 9:59	87279.169	10.939	8.742
7/8/2015 9:59	87279.949	10.951	8.737
7/8/2015 9:59	87280.729	10.953	8.736
7/8/2015 9:59	87281.569	10.957	8.734
7/8/2015 9:59	87282.469	10.95	8.737
7/8/2015 9:59	87283.429	10.956	8.735
7/8/2015 9:59	87284.389	10.949	8.738
7/8/2015 9:59	87285.469	10.952	8.736
7/8/2015 9:59	87286.609	10.949	8.738
7/8/2015 9:59	87287.809	10.948	8.738
7/8/2015 9:59	87289.069	10.945	8.74
7/8/2015 9:59	87290.389	10.945	8.739
7/8/2015 9:59	87291.829	10.949	8.737
7/8/2015 9:59	87293.329	10.942	8.741
7/8/2015 9:59	87294.889	10.941	8.741
7/8/2015 9:59	87296.569	10.937	8.743
7/8/2015 10:00	87298.369	10.934	8.744
7/8/2015 10:00	87300.229	10.932	8.745
7/8/2015 10:00	87302.269	10.93	8.746
7/8/2015 10:00	87304.369	10.925	8.748

7/8/2015 10:00	87306.589	10.922	8.749
7/8/2015 10:00	87308.989	10.923	8.749
7/8/2015 10:00	87311.509	10.911	8.754
7/8/2015 10:00	87314.149	10.9	8.759
7/8/2015 10:00	87316.969	10.898	8.76
7/8/2015 10:00	87319.969	10.885	8.765
7/8/2015 10:00	87323.149	10.872	8.771
7/8/2015 10:00	87326.509	10.859	8.777
7/8/2015 10:00	87330.109	10.847	8.782
7/8/2015 10:00	87333.709	10.83	8.789
7/8/2015 10:00	87337.909	10.804	8.8
7/8/2015 10:00	87342.109	10.795	8.804
7/8/2015 10:00	87346.309	10.766	8.817
7/8/2015 10:00	87351.109	10.732	8.831
7/8/2015 10:00	87356.509	10.704	8.844
7/8/2015 10:01	87361.309	10.676	8.856
7/8/2015 10:01	87367.309	10.637	8.873
7/8/2015 10:01	87373.309	10.601	8.888
7/8/2015 10:01	87379.309	10.556	8.908
7/8/2015 10:01	87385.908	10.512	8.927
7/8/2015 10:01	87393.109	10.475	8.943
7/8/2015 10:01	87400.908	10.408	8.972
7/8/2015 10:01	87408.709	10.352	8.996
7/8/2015 10:01	87417.109	10.291	9.023
7/8/2015 10:02	87426.109	10.23	9.049
7/8/2015 10:02	87435.709	10.166	9.077
7/8/2015 10:02	87445.309	10.105	9.103
7/8/2015 10:02	87456.108	10.034	9.134
7/8/2015 10:02	87467.509	9.96	9.166
7/8/2015 10:03	87479.509	9.887	9.198
7/8/2015 10:03	87492.108	9.818	9.228
7/8/2015 10:03	87505.309	9.746	9.259
7/8/2015 10:03	87519.709	9.67	9.292
7/8/2015 10:03	87534.709	9.596	9.324
7/8/2015 10:04	87550.309	9.527	9.353
7/8/2015 10:04	87567.109	9.459	9.383
7/8/2015 10:04	87585.109	9.378	9.418
7/8/2015 10:05	87603.709	9.288	9.457
7/8/2015 10:05	87624.109	9.223	9.485
7/8/2015 10:05	87645.109	9.151	9.516
7/8/2015 10:06	87667.309	9.076	9.549
7/8/2015 10:06	87691.309	8.994	9.584
7/8/2015 10:06	87716.509	8.927	9.613
7/8/2015 10:07	87742.908	8.85	9.647
7/8/2015 10:07	87771.108	8.773	9.68
7/8/2015 10:08	87801.108	8.7	9.711
7/8/2015 10:08	87832.908	8.619	9.747
7/8/2015 10:09	87866.508	8.561	9.772
7/8/2015 10:10	87902.509	8.488	9.804
7/8/2015 10:10	87938.509	8.415	9.835
7/8/2015 10:11	87980.509	8.345	9.866
7/8/2015 10:12	88022.509	8.269	9.898
7/8/2015 10:12	88064.509	8.211	9.923
7/8/2015 10:13	88112.509	8.138	9.955
7/8/2015 10:14	88166.509	8.063	9.987

7/8/2015 10:15	88214.509	8.004	10.013
7/8/2015 10:16	88274.509	7.922	10.049
7/8/2015 10:17	88334.509	7.865	10.073
7/8/2015 10:18	88394.509	7.789	10.106
7/8/2015 10:19	88460.509	7.726	10.134
7/8/2015 10:20	88532.509	7.646	10.168
7/8/2015 10:21	88610.509	7.583	10.195
7/8/2015 10:23	88688.509	7.511	10.226
7/8/2015 10:24	88772.509	7.447	10.254
7/8/2015 10:26	88862.509	7.385	10.281
7/8/2015 10:27	88958.509	7.306	10.316
7/8/2015 10:29	89054.509	7.243	10.343
7/8/2015 10:31	89162.509	7.162	10.378
7/8/2015 10:32	89276.509	7.1	10.405
7/8/2015 10:34	89396.509	7.02	10.439
7/8/2015 10:37	89522.509	6.953	10.468
7/8/2015 10:39	89654.509	6.88	10.5
7/8/2015 10:41	89798.509	6.815	10.528
7/8/2015 10:44	89948.509	6.73	10.565
7/8/2015 10:46	90104.509	6.651	10.599
7/8/2015 10:49	90272.509	6.581	10.629
7/8/2015 10:52	90452.509	6.503	10.663
7/8/2015 10:55	90638.509	6.42	10.699
7/8/2015 10:59	90842.509	6.355	10.727
7/8/2015 11:02	91052.509	6.262	10.767
7/8/2015 11:06	91274.509	6.181	10.803
7/8/2015 11:10	91514.509	6.105	10.835
7/8/2015 11:14	91766.509	6.026	10.87
7/8/2015 11:18	92030.509	5.942	10.906
7/8/2015 11:23	92312.509	5.87	10.937
7/8/2015 11:28	92612.509	5.773	10.979
7/8/2015 11:33	92930.509	5.708	11.007
7/8/2015 11:39	93266.509	5.603	11.053
7/8/2015 11:45	93626.509	5.515	11.091
7/8/2015 11:51	93986.509	5.425	11.13
7/8/2015 11:58	94406.509	5.325	11.173
7/8/2015 12:05	94826.509	5.266	11.199
7/8/2015 12:12	95246.509	5.18	11.236
7/8/2015 12:20	95726.509	5.08	11.279
7/8/2015 12:29	96266.509	4.987	11.32
7/8/2015 12:37	96746.509	4.909	11.354
7/8/2015 12:47	97346.509	4.805	11.399
7/8/2015 12:57	97946.509	4.707	11.441
7/8/2015 13:07	98546.509	4.61	11.483
7/8/2015 13:18	99206.509	4.526	11.52
7/8/2015 13:30	99926.509	4.429	11.561
7/8/2015 13:43	100706.509	4.335	11.602
7/8/2015 13:56	101486.509	4.239	11.644
7/8/2015 14:10	102326.509	4.117	11.697
7/8/2015 14:25	103226.509	4.023	11.737
7/8/2015 14:41	104186.509	3.927	11.779
7/8/2015 14:57	105146.509	3.843	11.815
7/8/2015 15:15	106226.509	3.733	11.863
7/8/2015 15:34	107366.509	3.606	11.918
7/8/2015 15:54	108566.509	3.52	11.955

7/8/2015 16:15	109826.509	3.422	11.998
7/8/2015 16:37	111146.509	3.311	12.046
7/8/2015 17:01	112586.509	3.205	12.091
7/8/2015 17:26	114086.509	3.099	12.137
7/8/2015 17:52	115646.509	3.005	12.178
7/8/2015 18:20	117326.509	2.904	12.222
7/8/2015 18:50	119126.509	2.799	12.267
7/8/2015 19:21	120986.509	2.693	12.313
7/8/2015 19:55	123026.509	2.582	12.361
7/8/2015 20:30	125126.509	2.467	12.411
7/8/2015 21:07	127346.509	2.366	12.455
7/8/2015 21:47	129746.509	2.247	12.506
7/8/2015 22:29	132266.509	2.134	12.555
7/8/2015 23:13	134906.509	2.029	12.601
7/9/2015 0:00	137726.509	1.918	12.649
7/9/2015 0:50	140726.509	1.805	12.698
7/9/2015 1:43	143906.509	1.692	12.747
7/9/2015 2:39	147266.509	1.766	12.715
7/9/2015 3:39	150866.509	2.053	12.591
7/9/2015 4:39	154466.509	2.13	12.557
7/9/2015 5:49	158666.509	1.927	12.645
7/9/2015 6:59	162866.509	1.773	12.711
7/9/2015 8:09	167066.509	1.621	12.777
7/9/2015 9:29	171866.509	1.432	12.859
7/9/2015 10:59	177266.509	1.257	12.935
7/9/2015 12:19	182066.509	1.115	12.997
7/9/2015 13:59	188066.509	0.981	13.055
7/9/2015 15:39	194066.509	0.846	13.113
7/9/2015 17:19	200066.509	0.716	13.169
7/9/2015 19:09	206666.509	0.585	13.226
7/9/2015 21:09	213866.509	0.447	13.286
7/9/2015 23:19	221666.509	0.309	13.346
7/10/2015 1:29	229466.509	0.252	13.37
7/10/2015 3:49	237866.509	0.778	13.143
7/10/2015 6:19	246866.509	0.619	13.211
7/10/2015 8:59	256466.509	0.39	13.311

Report Date:	7/7/2015 9:08
Report User Name:	3698bjm
Report Computer Name:	BEL-BMCMULLEN
Application:	WinSitu.exe
Application Version:	5.6.25.0

Log File Properties

File Name	MW-1B_Append_2015-07-07_09-07-34-527.wsl
Create Date	7/7/2015 9:07

Device Properties

Device	Level TROLL 700	
Site	MW-1B	
Device Name		
Serial Number	169845	
Firmware Version	2.09	
Hardware Version	3	
Device Address	6	
Device Comm Cfg	19200	8
	None	1 (Modbus-ASCII)
Used Memory	0	
Used Battery	42	

Log Configuration

Log Name	MW-1B	
Created By	3266d_l	
Computer Name	04POR-LAMADRID	
Application	WinSitu.exe	
Application Version	5.6.25.0	
Create Date	7/4/2015 1:09:54 PM Pacific Daylight Time	
Log Setup Time Zone	Pacific Daylight Time	
Notes Size(bytes)		4096
Overwrite when full	Disabled	
Scheduled Start Time	Manual Start	
Scheduled Stop Time	No Stop Time	
Type	Linear	
Interval	Days: 0 hrs: 00 mins: 15 secs: 00	

Level Reference Settings At Log Creation

Level Measurement Mode	Level Surface Elevation
Specific Gravity	0.999
Level Reference Mode:	Set first logged value to offset
Level Reference Offset:	144.65 (ft)

Other Log Settings

Depth of Probe:	11.8581 (ft)
Head Pressure:	5.13567 (PSI)
Temperature:	13.4388 (C)

Log Notes:

Date and Time	Note
7/4/2015 13:10	Used Battery: 42% Used Memory: 1% User Name: 3266d_l

7/4/2015 13:10 Manual Start Command
7/6/2015 17:40 Log Download - Used Battery: 42% Used Memory: 1% User Name: 3698bjm
7/7/2015 9:07 Log Download - Used Battery: 42% Used Memory: 1% User Name: 3698bjm

Log Data:
Record Count 272

Sensors 1

1 10169845 Pressure/Temp 15 PSIG (11m/35ft)

Time Zone: Pacific Daylight Time

Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 35ft SN#: 10169845 Level Surface Elevation (ft)	Sensor: Pres(G) 35ft SN#: 10169845 Pressure (PSI)
7/4/2015 13:10	0	144.65	5.138
7/4/2015 13:25	900	144.65	5.138
7/4/2015 13:40	1800	144.641	5.134
7/4/2015 13:55	2700	144.648	5.138
7/4/2015 14:10	3600	144.65	5.138
7/4/2015 14:25	4500	144.652	5.139
7/4/2015 14:40	5400	144.653	5.14
7/4/2015 14:55	6300	144.654	5.14
7/4/2015 15:10	7200	144.655	5.14
7/4/2015 15:25	8100	144.655	5.14
7/4/2015 15:40	9000	144.657	5.141
7/4/2015 15:55	9900	144.656	5.141
7/4/2015 16:10	10800	144.657	5.141
7/4/2015 16:25	11700	144.656	5.141
7/4/2015 16:40	12600	144.656	5.141
7/4/2015 16:55	13500	144.657	5.141
7/4/2015 17:10	14400	144.658	5.142
7/4/2015 17:25	15300	144.659	5.142
7/4/2015 17:40	16200	144.657	5.141
7/4/2015 17:55	17100	144.658	5.142
7/4/2015 18:10	18000	144.657	5.141
7/4/2015 18:25	18900	144.655	5.141
7/4/2015 18:40	19800	144.656	5.141
7/4/2015 18:55	20700	144.655	5.14
7/4/2015 19:10	21600	144.653	5.139
7/4/2015 19:25	22500	144.651	5.139
7/4/2015 19:40	23400	144.648	5.138
7/4/2015 19:55	24300	144.644	5.136
7/4/2015 20:10	25200	144.64	5.134
7/4/2015 20:25	26100	144.636	5.132
7/4/2015 20:40	27000	144.633	5.131
7/4/2015 20:55	27900	144.632	5.13
7/4/2015 21:10	28800	144.625	5.127
7/4/2015 21:25	29700	144.625	5.128
7/4/2015 21:40	30600	144.621	5.126
7/4/2015 21:55	31500	144.618	5.124
7/4/2015 22:10	32400	144.614	5.123
7/4/2015 22:25	33300	144.612	5.122
7/4/2015 22:40	34200	144.609	5.121
7/4/2015 22:55	35100	144.607	5.12
7/4/2015 23:10	36000	144.603	5.118

7/4/2015 23:25	36900	144.603	5.118
7/4/2015 23:40	37800	144.604	5.118
7/4/2015 23:55	38700	144.603	5.118
7/5/2015 0:10	39600	144.602	5.118
7/5/2015 0:25	40500	144.602	5.117
7/5/2015 0:40	41400	144.599	5.116
7/5/2015 0:55	42300	144.597	5.115
7/5/2015 1:10	43200	144.598	5.116
7/5/2015 1:25	44100	144.594	5.114
7/5/2015 1:40	45000	144.594	5.114
7/5/2015 1:55	45900	144.591	5.113
7/5/2015 2:10	46800	144.589	5.112
7/5/2015 2:25	47700	144.586	5.111
7/5/2015 2:40	48600	144.586	5.111
7/5/2015 2:55	49500	144.586	5.111
7/5/2015 3:10	50400	144.583	5.109
7/5/2015 3:25	51300	144.58	5.108
7/5/2015 3:40	52200	144.581	5.108
7/5/2015 3:55	53100	144.581	5.109
7/5/2015 4:10	54000	144.586	5.11
7/5/2015 4:25	54900	144.587	5.111
7/5/2015 4:40	55800	144.586	5.111
7/5/2015 4:55	56700	144.583	5.109
7/5/2015 5:10	57600	144.582	5.109
7/5/2015 5:25	58500	144.577	5.107
7/5/2015 5:40	59400	144.575	5.106
7/5/2015 5:55	60300	144.57	5.104
7/5/2015 6:10	61200	144.57	5.104
7/5/2015 6:25	62100	144.567	5.102
7/5/2015 6:40	63000	144.565	5.102
7/5/2015 6:55	63900	144.56	5.099
7/5/2015 7:10	64800	144.562	5.1
7/5/2015 7:25	65700	144.562	5.1
7/5/2015 7:40	66600	144.562	5.1
7/5/2015 7:55	67500	144.562	5.1
7/5/2015 8:10	68400	144.56	5.099
7/5/2015 8:25	69300	144.56	5.099
7/5/2015 8:40	70200	144.557	5.098
7/5/2015 8:55	71100	144.555	5.097
7/5/2015 9:10	72000	144.552	5.096
7/5/2015 9:25	72900	144.552	5.096
7/5/2015 9:40	73800	144.551	5.095
7/5/2015 9:55	74700	144.55	5.095
7/5/2015 10:10	75600	144.548	5.094
7/5/2015 10:25	76500	144.55	5.095
7/5/2015 10:40	77400	144.551	5.095
7/5/2015 10:55	78300	144.548	5.094
7/5/2015 11:10	79200	144.551	5.096
7/5/2015 11:25	80100	144.55	5.095
7/5/2015 11:40	81000	144.549	5.094
7/5/2015 11:55	81900	144.551	5.096
7/5/2015 12:10	82800	144.549	5.094
7/5/2015 12:25	83700	144.548	5.094
7/5/2015 12:40	84600	144.546	5.093
7/5/2015 12:55	85500	144.545	5.093
7/5/2015 13:10	86400	144.545	5.093
7/5/2015 13:25	87300	144.545	5.093
7/5/2015 13:40	88200	144.542	5.092

7/5/2015 13:55	89100	144.542	5.092
7/5/2015 14:10	90000	144.542	5.092
7/5/2015 14:25	90900	144.542	5.091
7/5/2015 14:40	91800	144.541	5.091
7/5/2015 14:55	92700	144.538	5.09
7/5/2015 15:10	93600	144.539	5.09
7/5/2015 15:25	94500	144.54	5.09
7/5/2015 15:40	95400	144.539	5.09
7/5/2015 15:55	96300	144.534	5.088
7/5/2015 16:10	97200	144.533	5.088
7/5/2015 16:25	98100	144.534	5.088
7/5/2015 16:40	99000	144.529	5.086
7/5/2015 16:55	99900	144.53	5.086
7/5/2015 17:10	100800	144.524	5.084
7/5/2015 17:25	101700	144.524	5.084
7/5/2015 17:40	102600	144.522	5.083
7/5/2015 17:55	103500	144.52	5.082
7/5/2015 18:10	104400	144.518	5.081
7/5/2015 18:25	105300	144.52	5.082
7/5/2015 18:40	106200	144.515	5.08
7/5/2015 18:55	107100	144.512	5.079
7/5/2015 19:10	108000	144.511	5.078
7/5/2015 19:25	108900	144.511	5.078
7/5/2015 19:40	109800	144.507	5.076
7/5/2015 19:55	110700	144.505	5.076
7/5/2015 20:10	111600	144.501	5.074
7/5/2015 20:25	112500	144.499	5.073
7/5/2015 20:40	113400	144.496	5.071
7/5/2015 20:55	114300	144.494	5.07
7/5/2015 21:10	115200	144.49	5.069
7/5/2015 21:25	116100	144.487	5.068
7/5/2015 21:40	117000	144.482	5.065
7/5/2015 21:55	117900	144.48	5.065
7/5/2015 22:10	118800	144.476	5.063
7/5/2015 22:25	119700	144.475	5.063
7/5/2015 22:40	120600	144.472	5.061
7/5/2015 22:55	121500	144.469	5.06
7/5/2015 23:10	122400	144.464	5.058
7/5/2015 23:25	123300	144.463	5.057
7/5/2015 23:40	124200	144.461	5.057
7/5/2015 23:55	125100	144.459	5.056
7/6/2015 0:10	126000	144.456	5.054
7/6/2015 0:25	126900	144.451	5.052
7/6/2015 0:40	127800	144.448	5.051
7/6/2015 0:55	128700	144.448	5.051
7/6/2015 1:10	129600	144.448	5.051
7/6/2015 1:25	130500	144.446	5.05
7/6/2015 1:40	131400	144.445	5.05
7/6/2015 1:55	132300	144.444	5.049
7/6/2015 2:10	133200	144.44	5.047
7/6/2015 2:25	134100	144.437	5.046
7/6/2015 2:40	135000	144.436	5.045
7/6/2015 2:55	135900	144.432	5.044
7/6/2015 3:10	136800	144.431	5.044
7/6/2015 3:25	137700	144.431	5.043
7/6/2015 3:40	138600	144.43	5.043
7/6/2015 3:55	139500	144.431	5.043
7/6/2015 4:10	140400	144.436	5.045

7/6/2015 4:25	141300	144.433	5.044
7/6/2015 4:40	142200	144.432	5.044
7/6/2015 4:55	143100	144.431	5.044
7/6/2015 5:10	144000	144.429	5.042
7/6/2015 5:25	144900	144.424	5.041
7/6/2015 5:40	145800	144.424	5.04
7/6/2015 5:55	146700	144.424	5.04
7/6/2015 6:10	147600	144.423	5.04
7/6/2015 6:25	148500	144.417	5.037
7/6/2015 6:40	149400	144.417	5.037
7/6/2015 6:55	150300	144.409	5.034
7/6/2015 7:10	151200	144.413	5.035
7/6/2015 7:25	152100	144.407	5.033
7/6/2015 7:40	153000	144.405	5.032
7/6/2015 7:55	153900	144.408	5.033
7/6/2015 8:10	154800	144.405	5.032
7/6/2015 8:25	155700	144.407	5.033
7/6/2015 8:40	156600	144.406	5.033
7/6/2015 8:55	157500	144.413	5.035
7/6/2015 9:10	158400	144.424	5.04
7/6/2015 9:25	159300	144.409	5.034
7/6/2015 9:40	160200	144.411	5.035
7/6/2015 9:55	161100	144.41	5.034
7/6/2015 10:10	162000	144.407	5.033
7/6/2015 10:25	162900	144.411	5.035
7/6/2015 10:40	163800	144.419	5.038
7/6/2015 10:55	164700	144.431	5.043
7/6/2015 11:10	165600	144.433	5.044
7/6/2015 11:25	166500	144.45	5.052
7/6/2015 11:40	167400	144.446	5.05
7/6/2015 11:55	168300	144.443	5.049
7/6/2015 12:10	169200	144.44	5.047
7/6/2015 12:25	170100	144.438	5.047
7/6/2015 12:40	171000	144.469	5.06
7/6/2015 12:55	171900	144.468	5.059
7/6/2015 13:10	172800	144.474	5.062
7/6/2015 13:25	173700	144.467	5.059
7/6/2015 13:40	174600	144.458	5.055
7/6/2015 13:55	175500	144.458	5.055
7/6/2015 14:10	176400	144.453	5.053
7/6/2015 14:25	177300	144.458	5.055
7/6/2015 14:40	178200	144.448	5.051
7/6/2015 14:55	179100	144.472	5.061
7/6/2015 15:10	180000	144.473	5.062
7/6/2015 15:25	180900	144.477	5.063
7/6/2015 15:40	181800	144.472	5.061
7/6/2015 15:55	182700	144.461	5.056
7/6/2015 16:10	183600	144.456	5.054
7/6/2015 16:25	184500	144.45	5.052
7/6/2015 16:40	185400	144.461	5.056
7/6/2015 16:55	186300	144.492	5.07
7/6/2015 17:10	187200	144.5	5.073
7/6/2015 17:25	188100	144.496	5.072
7/6/2015 17:40	189000	144.491	5.069
7/6/2015 17:55	189900	144.482	5.066
7/6/2015 18:10	190800	144.478	5.064
7/6/2015 18:25	191700	144.476	5.063
7/6/2015 18:40	192600	144.465	5.058

7/6/2015 18:55	193500	144.463	5.057
7/6/2015 19:10	194400	144.353	5.01
7/6/2015 19:25	195300	144.314	4.993
7/6/2015 19:40	196200	144.307	4.99
7/6/2015 19:55	197100	144.317	4.994
7/6/2015 20:10	198000	144.324	4.997
7/6/2015 20:25	198900	144.33	5
7/6/2015 20:40	199800	144.334	5.001
7/6/2015 20:55	200700	144.342	5.005
7/6/2015 21:10	201600	144.347	5.007
7/6/2015 21:25	202500	144.349	5.008
7/6/2015 21:40	203400	144.354	5.01
7/6/2015 21:55	204300	144.355	5.011
7/6/2015 22:10	205200	144.357	5.012
7/6/2015 22:25	206100	144.356	5.011
7/6/2015 22:40	207000	144.361	5.013
7/6/2015 22:55	207900	144.36	5.013
7/6/2015 23:10	208800	144.36	5.013
7/6/2015 23:25	209700	144.361	5.013
7/6/2015 23:40	210600	144.36	5.013
7/6/2015 23:55	211500	144.36	5.013
7/7/2015 0:10	212400	144.358	5.012
7/7/2015 0:25	213300	144.358	5.012
7/7/2015 0:40	214200	144.357	5.011
7/7/2015 0:55	215100	144.359	5.012
7/7/2015 1:10	216000	144.358	5.012
7/7/2015 1:25	216900	144.358	5.012
7/7/2015 1:40	217800	144.356	5.011
7/7/2015 1:55	218700	144.354	5.01
7/7/2015 2:10	219600	144.354	5.01
7/7/2015 2:25	220500	144.355	5.01
7/7/2015 2:40	221400	144.356	5.011
7/7/2015 2:55	222300	144.355	5.011
7/7/2015 3:10	223200	144.357	5.011
7/7/2015 3:25	224100	144.355	5.011
7/7/2015 3:40	225000	144.353	5.01
7/7/2015 3:55	225900	144.356	5.011
7/7/2015 4:10	226800	144.36	5.013
7/7/2015 4:25	227700	144.363	5.014
7/7/2015 4:40	228600	144.364	5.014
7/7/2015 4:55	229500	144.362	5.014
7/7/2015 5:10	230400	144.362	5.013
7/7/2015 5:25	231300	144.36	5.012
7/7/2015 5:40	232200	144.357	5.012
7/7/2015 5:55	233100	144.357	5.011
7/7/2015 6:10	234000	144.356	5.011
7/7/2015 6:25	234900	144.353	5.01
7/7/2015 6:40	235800	144.355	5.01
7/7/2015 6:55	236700	144.346	5.007
7/7/2015 7:10	237600	144.347	5.007
7/7/2015 7:25	238500	144.351	5.009
7/7/2015 7:40	239400	144.34	5.004
7/7/2015 7:55	240300	144.339	5.004
7/7/2015 8:10	241200	144.345	5.006
7/7/2015 8:25	242100	144.342	5.005
7/7/2015 8:40	243000	144.351	5.009
7/7/2015 8:55	243900	144.364	5.014

Report Date:	7/10/2015 10:10
Report User Name:	3367tml
Report Computer Name:	01POR-TANDREWS
Application:	WinSitu.exe
Application Version:	5.6.25.0

Log File Properties

File Name	MW-1BCON_Append_2015-07-10_10-10-38-680.wsl
Create Date	7/10/2015 10:10

Device Properties

Device	Level TROLL 700	
Site	MW-1B	
Device Name		
Serial Number	169845	
Firmware Version	2.09	
Hardware Version	3	
Device Address	6	
Device Comm Cfg	19200	8
	None	1 (Modbus-ASCII)
Used Memory	1	
Used Battery	42	

Log Configuration

Log Name	MW-1BCON
Created By	3367tml
Computer Name	01POR-TANDREWS
Application	WinSitu.exe
Application Version	5.6.25.0
Create Date	7/7/2015 9:18:33 AM Pacific Daylight Time
Log Setup Time Zone	Pacific Daylight Time
Notes Size(bytes)	4096
Overwrite when full	Disabled
Scheduled Start Time	Manual Start
Scheduled Stop Time	No Stop Time
Type	Linear
Interval	Days: 0 hrs: 00 mins: 10 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode	Level Depth To Water
Specific Gravity	0.999
Level Reference Mode:	Set new reference
Level Reference Value:	0 (ft)
Level Reference Head Pressure	5.00825 (PSI)

Other Log Settings

Depth of Probe:	11.5673 (ft)
Head Pressure:	5.00974 (PSI)
Temperature:	13.4402 (C)

Log Notes:

Date and Time	Note

7/7/2015 9:18	Used Battery: 42% Used Memory: 3% User Name: 3367tml
7/7/2015 9:36	Manual Start Command
7/7/2015 15:08	Log Download - Used Battery: 42% Used Memory: 3% User Name: 3367tml
7/7/2015 19:59	Log Download - Used Battery: 42% Used Memory: 3% User Name: 3367tml
7/8/2015 10:10	Log Download - Used Battery: 42% Used Memory: 3% User Name: 3698bjm
7/10/2015 10:06	Log Download - Used Battery: 42% Used Memory: 3% User Name: 3367tml
7/10/2015 10:07	Log Download - Used Battery: 42% Used Memory: 3% User Name: 3367tml
7/10/2015 10:08	Used Battery: 42% Used Memory: 3% User Name: 3367tml
7/10/2015 10:08	Manual Stop Command

Log Data:

Record Count		436	
Sensors		1	
	1	10169845	Pressure/Temp 15 PSIG (11m/35ft)

Time Zone: Pacific Daylight Time

Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 35ft SN#: 10169845 Level Depth To Water (ft)	Sensor: Pres(G) 35ft SN#: 10169845 Pressure (PSI)
7/7/2015 9:36	0	-0.019	5.017
7/7/2015 9:46	600	-0.013	5.014
7/7/2015 9:56	1200	-0.109	5.055
7/7/2015 10:06	1800	-0.134	5.066
7/7/2015 10:16	2400	-0.138	5.068
7/7/2015 10:26	3000	-0.137	5.068
7/7/2015 10:36	3600	-0.131	5.065
7/7/2015 10:46	4200	-0.134	5.066
7/7/2015 10:56	4800	-0.125	5.062
7/7/2015 11:06	5400	-0.121	5.061
7/7/2015 11:16	6000	-0.12	5.06
7/7/2015 11:26	6600	-0.113	5.057
7/7/2015 11:36	7200	-0.117	5.059
7/7/2015 11:46	7800	-0.14	5.069
7/7/2015 11:56	8400	-0.107	5.055
7/7/2015 12:06	9000	-0.103	5.053
7/7/2015 12:16	9600	-0.099	5.051
7/7/2015 12:26	10200	-0.107	5.054
7/7/2015 12:36	10800	-0.094	5.049
7/7/2015 12:46	11400	-0.092	5.048
7/7/2015 12:56	12000	-0.092	5.048
7/7/2015 13:06	12600	-0.099	5.051
7/7/2015 13:16	13200	-0.09	5.047
7/7/2015 13:26	13800	-0.098	5.051
7/7/2015 13:36	14400	-0.099	5.051
7/7/2015 13:46	15000	-0.092	5.048
7/7/2015 13:56	15600	-0.094	5.049
7/7/2015 14:06	16200	-0.093	5.049
7/7/2015 14:16	16800	-0.088	5.046
7/7/2015 14:26	17400	-0.088	5.046
7/7/2015 14:36	18000	-0.088	5.047
7/7/2015 14:46	18600	-0.092	5.048
7/7/2015 14:56	19200	-0.099	5.051
7/7/2015 15:06	19800	-0.11	5.056
7/7/2015 15:16	20400	-0.116	5.059

7/7/2015 15:26	21000	-0.126	5.063
7/7/2015 15:36	21600	-0.114	5.058
7/7/2015 15:46	22200	-0.105	5.054
7/7/2015 15:56	22800	-0.086	5.046
7/7/2015 16:06	23400	-0.086	5.046
7/7/2015 16:16	24000	-0.091	5.048
7/7/2015 16:26	24600	-0.1	5.051
7/7/2015 16:36	25200	-0.092	5.048
7/7/2015 16:46	25800	-0.086	5.046
7/7/2015 16:56	26400	-0.094	5.049
7/7/2015 17:06	27000	-0.098	5.051
7/7/2015 17:16	27600	-0.097	5.05
7/7/2015 17:26	28200	-0.095	5.049
7/7/2015 17:36	28800	-0.097	5.05
7/7/2015 17:46	29400	-0.094	5.049
7/7/2015 17:56	30000	-0.095	5.05
7/7/2015 18:06	30600	-0.099	5.051
7/7/2015 18:16	31200	-0.099	5.051
7/7/2015 18:26	31800	-0.099	5.051
7/7/2015 18:36	32400	-0.097	5.05
7/7/2015 18:46	33000	-0.1	5.051
7/7/2015 18:56	33600	-0.1	5.052
7/7/2015 19:06	34200	-0.102	5.052
7/7/2015 19:16	34800	-0.104	5.053
7/7/2015 19:26	35400	-0.101	5.052
7/7/2015 19:36	36000	-0.103	5.053
7/7/2015 19:46	36600	-0.106	5.054
7/7/2015 19:56	37200	-0.103	5.053
7/7/2015 20:06	37800	-0.107	5.054
7/7/2015 20:16	38400	-0.11	5.056
7/7/2015 20:26	39000	-0.109	5.056
7/7/2015 20:36	39600	-0.114	5.058
7/7/2015 20:46	40200	-0.104	5.053
7/7/2015 20:56	40800	-0.1	5.051
7/7/2015 21:06	41400	-0.105	5.054
7/7/2015 21:16	42000	-0.105	5.054
7/7/2015 21:26	42600	-0.106	5.054
7/7/2015 21:36	43200	-0.106	5.054
7/7/2015 21:46	43800	-0.104	5.053
7/7/2015 21:56	44400	-0.109	5.055
7/7/2015 22:06	45000	-0.108	5.055
7/7/2015 22:16	45600	-0.109	5.055
7/7/2015 22:26	46200	-0.11	5.056
7/7/2015 22:36	46800	-0.11	5.056
7/7/2015 22:46	47400	-0.112	5.057
7/7/2015 22:56	48000	-0.112	5.057
7/7/2015 23:06	48600	-0.112	5.057
7/7/2015 23:16	49200	-0.115	5.058
7/7/2015 23:26	49800	-0.116	5.059
7/7/2015 23:36	50400	-0.115	5.058
7/7/2015 23:46	51000	-0.118	5.06
7/7/2015 23:56	51600	-0.122	5.061
7/8/2015 0:06	52200	-0.124	5.062
7/8/2015 0:16	52800	-0.124	5.062
7/8/2015 0:26	53400	-0.128	5.064
7/8/2015 0:36	54000	-0.125	5.062
7/8/2015 0:46	54600	-0.126	5.063
7/8/2015 0:56	55200	-0.13	5.065

7/8/2015 1:06	55800	-0.133	5.066
7/8/2015 1:16	56400	-0.14	5.069
7/8/2015 1:26	57000	-0.145	5.071
7/8/2015 1:36	57600	-0.147	5.072
7/8/2015 1:46	58200	-0.156	5.076
7/8/2015 1:56	58800	-0.162	5.078
7/8/2015 2:06	59400	-0.167	5.081
7/8/2015 2:16	60000	-0.172	5.083
7/8/2015 2:26	60600	-0.178	5.085
7/8/2015 2:36	61200	-0.184	5.088
7/8/2015 2:46	61800	-0.19	5.091
7/8/2015 2:56	62400	-0.195	5.093
7/8/2015 3:06	63000	-0.201	5.095
7/8/2015 3:16	63600	-0.205	5.097
7/8/2015 3:26	64200	-0.209	5.099
7/8/2015 3:36	64800	-0.215	5.101
7/8/2015 3:46	65400	-0.215	5.102
7/8/2015 3:56	66000	-0.224	5.105
7/8/2015 4:06	66600	-0.23	5.108
7/8/2015 4:16	67200	-0.232	5.109
7/8/2015 4:26	67800	-0.236	5.11
7/8/2015 4:36	68400	-0.237	5.111
7/8/2015 4:46	69000	-0.237	5.111
7/8/2015 4:56	69600	-0.239	5.112
7/8/2015 5:06	70200	-0.24	5.112
7/8/2015 5:16	70800	-0.242	5.113
7/8/2015 5:26	71400	-0.244	5.114
7/8/2015 5:36	72000	-0.248	5.116
7/8/2015 5:46	72600	-0.257	5.119
7/8/2015 5:56	73200	-0.267	5.124
7/8/2015 6:06	73800	-0.271	5.126
7/8/2015 6:16	74400	-0.283	5.131
7/8/2015 6:26	75000	-0.292	5.135
7/8/2015 6:36	75600	-0.302	5.139
7/8/2015 6:46	76200	-0.301	5.138
7/8/2015 6:56	76800	-0.311	5.143
7/8/2015 7:06	77400	-0.313	5.144
7/8/2015 7:16	78000	-0.332	5.152
7/8/2015 7:26	78600	-0.334	5.153
7/8/2015 7:36	79200	-0.352	5.161
7/8/2015 7:46	79800	-0.352	5.161
7/8/2015 7:56	80400	-0.36	5.164
7/8/2015 8:06	81000	-0.361	5.165
7/8/2015 8:16	81600	-0.37	5.169
7/8/2015 8:26	82200	-0.387	5.176
7/8/2015 8:36	82800	-0.401	5.182
7/8/2015 8:46	83400	-0.396	5.18
7/8/2015 8:56	84000	-0.411	5.186
7/8/2015 9:06	84600	-0.426	5.193
7/8/2015 9:16	85200	-0.422	5.191
7/8/2015 9:26	85800	-0.434	5.196
7/8/2015 9:36	86400	-0.44	5.199
7/8/2015 9:46	87000	-0.443	5.2
7/8/2015 9:56	87600	-0.453	5.205
7/8/2015 10:06	88200	-0.399	5.181
7/8/2015 10:16	88800	-0.364	5.166
7/8/2015 10:26	89400	-0.361	5.165
7/8/2015 10:36	90000	-0.367	5.167

7/8/2015 10:46	90600	-0.393	5.179
7/8/2015 10:56	91200	-0.386	5.176
7/8/2015 11:06	91800	-0.408	5.185
7/8/2015 11:16	92400	-0.436	5.197
7/8/2015 11:26	93000	-0.425	5.192
7/8/2015 11:36	93600	-0.448	5.202
7/8/2015 11:46	94200	-0.449	5.203
7/8/2015 11:56	94800	-0.446	5.201
7/8/2015 12:06	95400	-0.469	5.211
7/8/2015 12:16	96000	-0.468	5.211
7/8/2015 12:26	96600	-0.473	5.213
7/8/2015 12:36	97200	-0.481	5.216
7/8/2015 12:46	97800	-0.482	5.217
7/8/2015 12:56	98400	-0.483	5.218
7/8/2015 13:06	99000	-0.494	5.222
7/8/2015 13:16	99600	-0.516	5.232
7/8/2015 13:26	100200	-0.496	5.223
7/8/2015 13:36	100800	-0.488	5.219
7/8/2015 13:46	101400	-0.493	5.222
7/8/2015 13:56	102000	-0.5	5.225
7/8/2015 14:06	102600	-0.507	5.228
7/8/2015 14:16	103200	-0.505	5.227
7/8/2015 14:26	103800	-0.513	5.23
7/8/2015 14:36	104400	-0.512	5.23
7/8/2015 14:46	105000	-0.519	5.233
7/8/2015 14:56	105600	-0.518	5.233
7/8/2015 15:06	106200	-0.517	5.232
7/8/2015 15:16	106800	-0.523	5.235
7/8/2015 15:26	107400	-0.528	5.237
7/8/2015 15:36	108000	-0.522	5.235
7/8/2015 15:46	108600	-0.529	5.237
7/8/2015 15:56	109200	-0.528	5.237
7/8/2015 16:06	109800	-0.536	5.24
7/8/2015 16:16	110400	-0.52	5.233
7/8/2015 16:26	111000	-0.533	5.239
7/8/2015 16:36	111600	-0.531	5.238
7/8/2015 16:46	112200	-0.531	5.238
7/8/2015 16:56	112800	-0.53	5.238
7/8/2015 17:06	113400	-0.529	5.238
7/8/2015 17:16	114000	-0.527	5.237
7/8/2015 17:26	114600	-0.526	5.236
7/8/2015 17:36	115200	-0.524	5.235
7/8/2015 17:46	115800	-0.525	5.235
7/8/2015 17:56	116400	-0.521	5.234
7/8/2015 18:06	117000	-0.52	5.234
7/8/2015 18:16	117600	-0.518	5.233
7/8/2015 18:26	118200	-0.514	5.231
7/8/2015 18:36	118800	-0.514	5.231
7/8/2015 18:46	119400	-0.512	5.23
7/8/2015 18:56	120000	-0.511	5.23
7/8/2015 19:06	120600	-0.509	5.229
7/8/2015 19:16	121200	-0.508	5.228
7/8/2015 19:26	121800	-0.503	5.226
7/8/2015 19:36	122400	-0.502	5.226
7/8/2015 19:46	123000	-0.499	5.224
7/8/2015 19:56	123600	-0.496	5.223
7/8/2015 20:06	124200	-0.494	5.222
7/8/2015 20:16	124800	-0.49	5.221

7/8/2015 20:26	125400	-0.487	5.219
7/8/2015 20:36	126000	-0.483	5.217
7/8/2015 20:46	126600	-0.478	5.215
7/8/2015 20:56	127200	-0.474	5.213
7/8/2015 21:06	127800	-0.468	5.211
7/8/2015 21:16	128400	-0.464	5.209
7/8/2015 21:26	129000	-0.461	5.208
7/8/2015 21:36	129600	-0.457	5.206
7/8/2015 21:46	130200	-0.456	5.206
7/8/2015 21:56	130800	-0.453	5.204
7/8/2015 22:06	131400	-0.45	5.203
7/8/2015 22:16	132000	-0.449	5.203
7/8/2015 22:26	132600	-0.448	5.202
7/8/2015 22:36	133200	-0.443	5.2
7/8/2015 22:46	133800	-0.441	5.199
7/8/2015 22:56	134400	-0.441	5.199
7/8/2015 23:06	135000	-0.437	5.197
7/8/2015 23:16	135600	-0.437	5.198
7/8/2015 23:26	136200	-0.435	5.196
7/8/2015 23:36	136800	-0.437	5.197
7/8/2015 23:46	137400	-0.435	5.197
7/8/2015 23:56	138000	-0.435	5.196
7/9/2015 0:06	138600	-0.431	5.195
7/9/2015 0:16	139200	-0.432	5.195
7/9/2015 0:26	139800	-0.43	5.194
7/9/2015 0:36	140400	-0.43	5.194
7/9/2015 0:46	141000	-0.425	5.192
7/9/2015 0:56	141600	-0.425	5.192
7/9/2015 1:06	142200	-0.424	5.192
7/9/2015 1:16	142800	-0.421	5.191
7/9/2015 1:26	143400	-0.423	5.192
7/9/2015 1:36	144000	-0.42	5.19
7/9/2015 1:46	144600	-0.419	5.19
7/9/2015 1:56	145200	-0.419	5.19
7/9/2015 2:06	145800	-0.417	5.189
7/9/2015 2:16	146400	-0.416	5.188
7/9/2015 2:26	147000	-0.418	5.189
7/9/2015 2:36	147600	-0.415	5.188
7/9/2015 2:46	148200	-0.416	5.188
7/9/2015 2:56	148800	-0.414	5.188
7/9/2015 3:06	149400	-0.414	5.187
7/9/2015 3:16	150000	-0.414	5.187
7/9/2015 3:26	150600	-0.414	5.188
7/9/2015 3:36	151200	-0.412	5.187
7/9/2015 3:46	151800	-0.409	5.185
7/9/2015 3:56	152400	-0.414	5.187
7/9/2015 4:06	153000	-0.413	5.187
7/9/2015 4:16	153600	-0.416	5.188
7/9/2015 4:26	154200	-0.416	5.188
7/9/2015 4:36	154800	-0.415	5.188
7/9/2015 4:46	155400	-0.413	5.187
7/9/2015 4:56	156000	-0.41	5.186
7/9/2015 5:06	156600	-0.41	5.186
7/9/2015 5:16	157200	-0.406	5.184
7/9/2015 5:26	157800	-0.405	5.183
7/9/2015 5:36	158400	-0.399	5.181
7/9/2015 5:46	159000	-0.399	5.181
7/9/2015 5:56	159600	-0.398	5.181

7/9/2015 6:06	160200	-0.398	5.181
7/9/2015 6:16	160800	-0.395	5.179
7/9/2015 6:26	161400	-0.395	5.179
7/9/2015 6:36	162000	-0.394	5.179
7/9/2015 6:46	162600	-0.398	5.181
7/9/2015 6:56	163200	-0.384	5.175
7/9/2015 7:06	163800	-0.386	5.175
7/9/2015 7:16	164400	-0.386	5.176
7/9/2015 7:26	165000	-0.385	5.175
7/9/2015 7:36	165600	-0.386	5.175
7/9/2015 7:46	166200	-0.387	5.176
7/9/2015 7:56	166800	-0.383	5.174
7/9/2015 8:06	167400	-0.382	5.174
7/9/2015 8:16	168000	-0.38	5.173
7/9/2015 8:26	168600	-0.383	5.174
7/9/2015 8:36	169200	-0.394	5.179
7/9/2015 8:46	169800	-0.389	5.177
7/9/2015 8:56	170400	-0.388	5.176
7/9/2015 9:06	171000	-0.392	5.178
7/9/2015 9:16	171600	-0.385	5.175
7/9/2015 9:26	172200	-0.377	5.171
7/9/2015 9:36	172800	-0.394	5.179
7/9/2015 9:46	173400	-0.386	5.175
7/9/2015 9:56	174000	-0.389	5.177
7/9/2015 10:06	174600	-0.39	5.177
7/9/2015 10:16	175200	-0.388	5.176
7/9/2015 10:26	175800	-0.378	5.172
7/9/2015 10:36	176400	-0.385	5.175
7/9/2015 10:46	177000	-0.385	5.175
7/9/2015 10:56	177600	-0.42	5.19
7/9/2015 11:06	178200	-0.392	5.178
7/9/2015 11:16	178800	-0.395	5.18
7/9/2015 11:26	179400	-0.43	5.194
7/9/2015 11:36	180000	-0.388	5.176
7/9/2015 11:46	180600	-0.381	5.173
7/9/2015 11:56	181200	-0.388	5.176
7/9/2015 12:06	181800	-0.411	5.186
7/9/2015 12:16	182400	-0.398	5.181
7/9/2015 12:26	183000	-0.42	5.19
7/9/2015 12:36	183600	-0.416	5.188
7/9/2015 12:46	184200	-0.393	5.178
7/9/2015 12:56	184800	-0.414	5.188
7/9/2015 13:06	185400	-0.414	5.188
7/9/2015 13:16	186000	-0.395	5.179
7/9/2015 13:26	186600	-0.401	5.182
7/9/2015 13:36	187200	-0.409	5.185
7/9/2015 13:46	187800	-0.421	5.19
7/9/2015 13:56	188400	-0.397	5.18
7/9/2015 14:06	189000	-0.395	5.179
7/9/2015 14:16	189600	-0.401	5.182
7/9/2015 14:26	190200	-0.404	5.183
7/9/2015 14:36	190800	-0.404	5.183
7/9/2015 14:46	191400	-0.408	5.185
7/9/2015 14:56	192000	-0.411	5.186
7/9/2015 15:06	192600	-0.402	5.182
7/9/2015 15:16	193200	-0.404	5.183
7/9/2015 15:26	193800	-0.406	5.184
7/9/2015 15:36	194400	-0.416	5.189

7/9/2015 15:46	195000	-0.409	5.185
7/9/2015 15:56	195600	-0.412	5.187
7/9/2015 16:06	196200	-0.408	5.185
7/9/2015 16:16	196800	-0.406	5.184
7/9/2015 16:26	197400	-0.406	5.184
7/9/2015 16:36	198000	-0.398	5.181
7/9/2015 16:46	198600	-0.4	5.181
7/9/2015 16:56	199200	-0.399	5.181
7/9/2015 17:06	199800	-0.397	5.18
7/9/2015 17:16	200400	-0.393	5.179
7/9/2015 17:26	201000	-0.391	5.178
7/9/2015 17:36	201600	-0.391	5.177
7/9/2015 17:46	202200	-0.389	5.177
7/9/2015 17:56	202800	-0.39	5.177
7/9/2015 18:06	203400	-0.386	5.175
7/9/2015 18:16	204000	-0.387	5.176
7/9/2015 18:26	204600	-0.387	5.176
7/9/2015 18:36	205200	-0.381	5.173
7/9/2015 18:46	205800	-0.384	5.175
7/9/2015 18:56	206400	-0.382	5.174
7/9/2015 19:06	207000	-0.378	5.172
7/9/2015 19:16	207600	-0.378	5.172
7/9/2015 19:26	208200	-0.376	5.171
7/9/2015 19:36	208800	-0.374	5.17
7/9/2015 19:46	209400	-0.372	5.169
7/9/2015 19:56	210000	-0.367	5.167
7/9/2015 20:06	210600	-0.366	5.167
7/9/2015 20:16	211200	-0.364	5.166
7/9/2015 20:26	211800	-0.36	5.164
7/9/2015 20:36	212400	-0.358	5.163
7/9/2015 20:46	213000	-0.355	5.162
7/9/2015 20:56	213600	-0.351	5.16
7/9/2015 21:06	214200	-0.345	5.158
7/9/2015 21:16	214800	-0.342	5.156
7/9/2015 21:26	215400	-0.341	5.156
7/9/2015 21:36	216000	-0.338	5.155
7/9/2015 21:46	216600	-0.335	5.154
7/9/2015 21:56	217200	-0.332	5.152
7/9/2015 22:06	217800	-0.328	5.15
7/9/2015 22:16	218400	-0.325	5.149
7/9/2015 22:26	219000	-0.322	5.148
7/9/2015 22:36	219600	-0.321	5.147
7/9/2015 22:46	220200	-0.319	5.146
7/9/2015 22:56	220800	-0.316	5.145
7/9/2015 23:06	221400	-0.315	5.145
7/9/2015 23:16	222000	-0.313	5.144
7/9/2015 23:26	222600	-0.308	5.142
7/9/2015 23:36	223200	-0.308	5.142
7/9/2015 23:46	223800	-0.305	5.14
7/9/2015 23:56	224400	-0.303	5.139
7/10/2015 0:06	225000	-0.301	5.139
7/10/2015 0:16	225600	-0.297	5.137
7/10/2015 0:26	226200	-0.296	5.137
7/10/2015 0:36	226800	-0.296	5.136
7/10/2015 0:46	227400	-0.296	5.136
7/10/2015 0:56	228000	-0.295	5.136
7/10/2015 1:06	228600	-0.295	5.136
7/10/2015 1:16	229200	-0.291	5.134

7/10/2015 1:26	229800	-0.293	5.135
7/10/2015 1:36	230400	-0.288	5.133
7/10/2015 1:46	231000	-0.288	5.133
7/10/2015 1:56	231600	-0.286	5.132
7/10/2015 2:06	232200	-0.281	5.13
7/10/2015 2:16	232800	-0.279	5.129
7/10/2015 2:26	233400	-0.28	5.13
7/10/2015 2:36	234000	-0.28	5.13
7/10/2015 2:46	234600	-0.279	5.129
7/10/2015 2:56	235200	-0.279	5.129
7/10/2015 3:06	235800	-0.279	5.129
7/10/2015 3:16	236400	-0.28	5.129
7/10/2015 3:26	237000	-0.278	5.129
7/10/2015 3:36	237600	-0.279	5.129
7/10/2015 3:46	238200	-0.279	5.129
7/10/2015 3:56	238800	-0.282	5.13
7/10/2015 4:06	239400	-0.282	5.13
7/10/2015 4:16	240000	-0.284	5.131
7/10/2015 4:26	240600	-0.283	5.131
7/10/2015 4:36	241200	-0.282	5.13
7/10/2015 4:46	241800	-0.282	5.13
7/10/2015 4:56	242400	-0.28	5.129
7/10/2015 5:06	243000	-0.278	5.129
7/10/2015 5:16	243600	-0.275	5.128
7/10/2015 5:26	244200	-0.274	5.127
7/10/2015 5:36	244800	-0.271	5.126
7/10/2015 5:46	245400	-0.272	5.126
7/10/2015 5:56	246000	-0.271	5.126
7/10/2015 6:06	246600	-0.271	5.125
7/10/2015 6:16	247200	-0.269	5.125
7/10/2015 6:26	247800	-0.268	5.125
7/10/2015 6:36	248400	-0.265	5.123
7/10/2015 6:46	249000	-0.265	5.123
7/10/2015 6:56	249600	-0.266	5.123
7/10/2015 7:06	250200	-0.255	5.119
7/10/2015 7:16	250800	-0.255	5.118
7/10/2015 7:26	251400	-0.257	5.12
7/10/2015 7:36	252000	-0.263	5.122
7/10/2015 7:46	252600	-0.253	5.118
7/10/2015 7:56	253200	-0.261	5.121
7/10/2015 8:06	253800	-0.252	5.118
7/10/2015 8:16	254400	-0.257	5.12
7/10/2015 8:26	255000	-0.26	5.121
7/10/2015 8:36	255600	-0.251	5.117
7/10/2015 8:46	256200	-0.249	5.116
7/10/2015 8:56	256800	-0.286	5.132
7/10/2015 9:06	257400	-0.265	5.123
7/10/2015 9:16	258000	-0.258	5.12
7/10/2015 9:26	258600	-0.24	5.112
7/10/2015 9:36	259200	-0.244	5.114
7/10/2015 9:46	259800	-0.253	5.118
7/10/2015 9:56	260400	-0.255	5.119
7/10/2015 10:06	261000.001	-0.256	5.119

Report Date:	7/10/2015 10:53
Report User Name:	3367tml
Report Computer Name:	01POR-TANDREWS
Application:	WinSitu.exe
Application Version:	5.6.25.0

Log File Properties

File Name	MW-10A_2015-07-10_10-52-33-828.wsl
Create Date	7/10/2015 10:52

Device Properties

Device	Level TROLL 700	
Site	MW-10A	
Device Name		
Serial Number	157614	
Firmware Version	2.09	
Hardware Version	3	
Device Address	5	
Device Comm Cfg	19200	8
	None	1 (Modbus-ASCII)
Used Memory	0	
Used Battery	34	

Log Configuration

Log Name	MW-10A
Created By	3266d_l
Computer Name	04POR-LAMADRID
Application	WinSitu.exe
Application Version	5.6.25.0
Create Date	7/4/2015 3:07:53 PM Pacific Daylight Time
Log Setup Time Zone	Pacific Daylight Time
Notes Size(bytes)	4096
Overwrite when full	Disabled
Scheduled Start Time	Manual Start
Scheduled Stop Time	No Stop Time
Type	Linear
Interval	Days: 0 hrs: 00 mins: 15 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode	Level Surface Elevation	Level Surface Elevation	
Specific Gravity	0.999		0.999
Level Reference Mode:	Set first logged value to offse	Set first logged value to offset	
Level Reference Offset:	15.33 (ft)	15.33 (ft)	

Other Log Settings

Depth of Probe:	5.45829 (ft)
Head Pressure:	2.36395 (PSI)
Temperature:	11.5853 (C)

Log Notes:

Date and Time	Note
7/4/2015 15:08	Used Battery: 34% Used Memory: 1% User Name: 3266d_l

7/4/2015 15:09	Manual Start Command
7/6/2015 13:36	Log Download - Used Battery: 34% Used Memory: 1% User Name: 3698bjm
7/10/2015 10:51	Used Battery: 34% Used Memory: 1% User Name: 3367tml
7/10/2015 10:51	Manual Stop Command

Log Data:

Record Count 559

Sensors 1

1 10157614 Pressure/Temp 15 PSIG (11m/35ft)

Time Zone: Pacific Daylight Time

Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 35ft SN#: 10157614 Level Surface Elevation (ft)	Sensor: Pres(G) 35ft SN#: 10157614 Pressure (PSI)
7/4/2015 15:09	0	15.33	2.368
7/4/2015 15:24	900	15.332	2.368
7/4/2015 15:39	1800	15.334	2.369
7/4/2015 15:54	2700	15.34	2.372
7/4/2015 16:09	3600	15.342	2.373
7/4/2015 16:24	4500	15.348	2.375
7/4/2015 16:39	5400	15.353	2.377
7/4/2015 16:54	6300	15.357	2.379
7/4/2015 17:09	7200	15.362	2.381
7/4/2015 17:24	8100	15.368	2.384
7/4/2015 17:39	9000	15.397	2.396
7/4/2015 17:54	9900	15.378	2.388
7/4/2015 18:09	10800	15.394	2.395
7/4/2015 18:24	11700	15.403	2.399
7/4/2015 18:39	12600	15.392	2.394
7/4/2015 18:54	13500	15.408	2.402
7/4/2015 19:09	14400	15.409	2.402
7/4/2015 19:24	15300	15.399	2.397
7/4/2015 19:39	16200	15.408	2.401
7/4/2015 19:54	17100	15.421	2.407
7/4/2015 20:09	18000	15.425	2.409
7/4/2015 20:24	18900	15.427	2.41
7/4/2015 20:39	19800	15.42	2.407
7/4/2015 20:54	20700	15.426	2.409
7/4/2015 21:09	21600	15.425	2.409
7/4/2015 21:24	22500	15.427	2.409
7/4/2015 21:39	23400	15.424	2.408
7/4/2015 21:54	24300	15.435	2.413
7/4/2015 22:09	25200	15.433	2.412
7/4/2015 22:24	26100	15.434	2.413
7/4/2015 22:39	27000	15.442	2.416
7/4/2015 22:54	27900	15.448	2.418
7/4/2015 23:09	28800	15.449	2.419
7/4/2015 23:24	29700	15.46	2.424
7/4/2015 23:39	30600	15.463	2.425
7/4/2015 23:54	31500	15.467	2.427
7/5/2015 0:09	32400	15.477	2.431
7/5/2015 0:24	33300	15.481	2.433
7/5/2015 0:39	34200	15.487	2.435
7/5/2015 0:54	35100	15.495	2.439

7/5/2015 1:09	36000	15.499	2.441
7/5/2015 1:24	36900	15.506	2.444
7/5/2015 1:39	37800	15.513	2.447
7/5/2015 1:54	38700	15.518	2.449
7/5/2015 2:09	39600	15.525	2.452
7/5/2015 2:24	40500	15.532	2.455
7/5/2015 2:39	41400	15.538	2.458
7/5/2015 2:54	42300	15.539	2.458
7/5/2015 3:09	43200	15.548	2.462
7/5/2015 3:24	44100	15.548	2.462
7/5/2015 3:39	45000	15.553	2.464
7/5/2015 3:54	45900	15.558	2.466
7/5/2015 4:09	46800	15.564	2.469
7/5/2015 4:24	47700	15.57	2.471
7/5/2015 4:39	48600	15.573	2.473
7/5/2015 4:54	49500	15.581	2.476
7/5/2015 5:09	50400	15.585	2.478
7/5/2015 5:24	51300	15.592	2.481
7/5/2015 5:39	52200	15.591	2.481
7/5/2015 5:54	53100	15.592	2.481
7/5/2015 6:09	54000	15.598	2.484
7/5/2015 6:24	54900	15.609	2.488
7/5/2015 6:39	55800	15.607	2.487
7/5/2015 6:54	56700	15.607	2.488
7/5/2015 7:09	57600	15.619	2.493
7/5/2015 7:24	58500	15.615	2.491
7/5/2015 7:39	59400	15.63	2.498
7/5/2015 7:54	60300	15.624	2.495
7/5/2015 8:09	61200	15.64	2.502
7/5/2015 8:24	62100	15.639	2.501
7/5/2015 8:39	63000	15.654	2.508
7/5/2015 8:54	63900	15.656	2.509
7/5/2015 9:09	64800	15.622	2.494
7/5/2015 9:24	65700	15.642	2.503
7/5/2015 9:39	66600	15.665	2.513
7/5/2015 9:54	67500	15.656	2.509
7/5/2015 10:09	68400	15.654	2.508
7/5/2015 10:24	69300	15.662	2.511
7/5/2015 10:39	70200	15.684	2.521
7/5/2015 10:54	71100	15.684	2.521
7/5/2015 11:09	72000	15.677	2.518
7/5/2015 11:24	72900	15.692	2.524
7/5/2015 11:39	73800	15.681	2.519
7/5/2015 11:54	74700	15.701	2.528
7/5/2015 12:09	75600	15.68	2.519
7/5/2015 12:24	76500	15.7	2.528
7/5/2015 12:39	77400	15.692	2.524
7/5/2015 12:54	78300	15.697	2.526
7/5/2015 13:09	79200	15.674	2.517
7/5/2015 13:24	80100	15.697	2.527
7/5/2015 13:39	81000	15.694	2.525
7/5/2015 13:54	81900	15.684	2.521
7/5/2015 14:09	82800	15.701	2.528
7/5/2015 14:24	83700	15.674	2.517
7/5/2015 14:39	84600	15.682	2.52
7/5/2015 14:54	85500	15.686	2.522
7/5/2015 15:09	86400	15.675	2.517
7/5/2015 15:24	87300	15.667	2.513

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7/5/2015 15:54	89100	15.689	2.523
7/5/2015 16:09	90000	15.689	2.523
7/5/2015 16:24	90900	15.692	2.524
7/5/2015 16:39	91800	15.683	2.521
7/5/2015 16:54	92700	15.67	2.515
7/5/2015 17:09	93600	15.672	2.516
7/5/2015 17:24	94500	15.669	2.514
7/5/2015 17:39	95400	15.664	2.512
7/5/2015 17:54	96300	15.668	2.514
7/5/2015 18:09	97200	15.668	2.514
7/5/2015 18:24	98100	15.662	2.511
7/5/2015 18:39	99000	15.67	2.515
7/5/2015 18:54	99900	15.672	2.516
7/5/2015 19:09	100800	15.665	2.513
7/5/2015 19:24	101700	15.662	2.511
7/5/2015 19:39	102600	15.658	2.509
7/5/2015 19:54	103500	15.653	2.508
7/5/2015 20:09	104400	15.661	2.511
7/5/2015 20:24	105300	15.661	2.511
7/5/2015 20:39	106200	15.661	2.511
7/5/2015 20:54	107100	15.651	2.507
7/5/2015 21:09	108000	15.642	2.503
7/5/2015 21:24	108900	15.641	2.502
7/5/2015 21:39	109800	15.64	2.502
7/5/2015 21:54	110700	15.638	2.501
7/5/2015 22:09	111600	15.636	2.5
7/5/2015 22:24	112500	15.634	2.499
7/5/2015 22:39	113400	15.634	2.499
7/5/2015 22:54	114300	15.638	2.501
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7/5/2015 23:24	116100	15.635	2.5
7/5/2015 23:39	117000	15.636	2.5
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7/6/2015 2:54	128700	15.649	2.506
7/6/2015 3:09	129600	15.653	2.507
7/6/2015 3:24	130500	15.656	2.509
7/6/2015 3:39	131400	15.655	2.508
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7/6/2015 4:09	133200	15.661	2.511
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7/6/2015 4:39	135000	15.665	2.512
7/6/2015 4:54	135900	15.667	2.514
7/6/2015 5:09	136800	15.667	2.514
7/6/2015 5:24	137700	15.675	2.517
7/6/2015 5:39	138600	15.675	2.517
7/6/2015 5:54	139500	15.673	2.516

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7/6/2015 6:39	142200	15.675	2.517
7/6/2015 6:54	143100	15.671	2.515
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7/6/2015 8:24	148500	15.682	2.52
7/6/2015 8:39	149400	15.7	2.528
7/6/2015 8:54	150300	15.715	2.534
7/6/2015 9:09	151200	15.657	2.509
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7/6/2015 9:39	153000	15.725	2.539
7/6/2015 9:54	153900	15.721	2.537
7/6/2015 10:09	154800	15.708	2.531
7/6/2015 10:24	155700	15.7	2.528
7/6/2015 10:39	156600	15.73	2.541
7/6/2015 10:54	157500	15.733	2.542
7/6/2015 11:09	158400	15.708	2.531
7/6/2015 11:24	159300	15.731	2.541
7/6/2015 11:39	160200	15.732	2.542
7/6/2015 11:54	161100	15.731	2.541
7/6/2015 12:09	162000	15.723	2.538
7/6/2015 12:24	162900	15.707	2.531
7/6/2015 12:39	163800	15.737	2.544
7/6/2015 12:54	164700	15.715	2.534
7/6/2015 13:09	165600	15.718	2.535
7/6/2015 13:24	166500	15.731	2.541
7/6/2015 13:39	167400	15.725	2.539
7/6/2015 13:54	168300	15.721	2.537
7/6/2015 14:09	169200	15.719	2.536
7/6/2015 14:24	170100	15.705	2.53
7/6/2015 14:39	171000	15.706	2.53
7/6/2015 14:54	171900	15.716	2.535
7/6/2015 15:09	172800	15.714	2.534
7/6/2015 15:24	173700	15.709	2.532
7/6/2015 15:39	174600	15.728	2.54
7/6/2015 15:54	175500	15.721	2.537
7/6/2015 16:09	176400	15.71	2.532
7/6/2015 16:24	177300	15.706	2.53
7/6/2015 16:39	178200	15.693	2.525
7/6/2015 16:54	179100	15.696	2.526
7/6/2015 17:09	180000	15.699	2.528
7/6/2015 17:24	180900	15.683	2.52
7/6/2015 17:39	181800	15.683	2.52
7/6/2015 17:54	182700	15.691	2.524
7/6/2015 18:09	183600	15.685	2.521
7/6/2015 18:24	184500	15.679	2.519
7/6/2015 18:39	185400	15.666	2.513
7/6/2015 18:54	186300	15.675	2.517
7/6/2015 19:09	187200	15.667	2.514
7/6/2015 19:24	188100	15.667	2.513
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7/6/2015 19:54	189900	15.663	2.512
7/6/2015 20:09	190800	15.667	2.513
7/6/2015 20:24	191700	15.664	2.512

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7/6/2015 21:09	194400	15.651	2.507
7/6/2015 21:24	195300	15.643	2.503
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7/6/2015 21:54	197100	15.649	2.506
7/6/2015 22:09	198000	15.65	2.506
7/6/2015 22:24	198900	15.651	2.507
7/6/2015 22:39	199800	15.645	2.504
7/6/2015 22:54	200700	15.648	2.505
7/6/2015 23:09	201600	15.643	2.503
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7/6/2015 23:39	203400	15.641	2.502
7/6/2015 23:54	204300	15.646	2.504
7/7/2015 0:09	205200	15.646	2.504
7/7/2015 0:24	206100	15.647	2.505
7/7/2015 0:39	207000	15.649	2.506
7/7/2015 0:54	207900	15.649	2.506
7/7/2015 1:09	208800	15.651	2.507
7/7/2015 1:24	209700	15.655	2.508
7/7/2015 1:39	210600	15.661	2.511
7/7/2015 1:54	211500	15.66	2.51
7/7/2015 2:09	212400	15.664	2.512
7/7/2015 2:24	213300	15.672	2.516
7/7/2015 2:39	214200	15.673	2.516
7/7/2015 2:54	215100	15.68	2.519
7/7/2015 3:09	216000	15.683	2.52
7/7/2015 3:24	216900	15.686	2.522
7/7/2015 3:39	217800	15.692	2.524
7/7/2015 3:54	218700	15.697	2.526
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7/7/2015 4:24	220500	15.702	2.529
7/7/2015 4:39	221400	15.711	2.532
7/7/2015 4:54	222300	15.714	2.534
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7/7/2015 5:24	224100	15.724	2.538
7/7/2015 5:39	225000	15.731	2.541
7/7/2015 5:54	225900	15.733	2.542
7/7/2015 6:09	226800	15.735	2.543
7/7/2015 6:24	227700	15.735	2.543
7/7/2015 6:39	228600	15.739	2.545
7/7/2015 6:54	229500	15.743	2.546
7/7/2015 7:09	230400	15.759	2.553
7/7/2015 7:24	231300	15.766	2.556
7/7/2015 7:39	232200	15.76	2.554
7/7/2015 7:54	233100	15.767	2.557
7/7/2015 8:09	234000	15.776	2.561
7/7/2015 8:24	234900	15.801	2.572
7/7/2015 8:39	235800	15.793	2.568
7/7/2015 8:54	236700	15.816	2.578
7/7/2015 9:09	237600	15.769	2.558
7/7/2015 9:24	238500	15.84	2.589
7/7/2015 9:39	239400	15.844	2.59
7/7/2015 9:54	240300	15.848	2.592
7/7/2015 10:09	241200	15.838	2.588
7/7/2015 10:24	242100	15.819	2.579
7/7/2015 10:39	243000	15.886	2.608
7/7/2015 10:54	243900	15.888	2.609

7/7/2015 11:09	244800	15.861	2.597
7/7/2015 11:24	245700	15.86	2.597
7/7/2015 11:39	246600	15.871	2.602
7/7/2015 11:54	247500	15.907	2.617
7/7/2015 12:09	248400	15.897	2.613
7/7/2015 12:24	249300	15.888	2.609
7/7/2015 12:39	250200	15.902	2.615
7/7/2015 12:54	251100	15.911	2.619
7/7/2015 13:09	252000	15.917	2.622
7/7/2015 13:24	252900	15.922	2.624
7/7/2015 13:39	253800	15.913	2.62
7/7/2015 13:54	254700	15.933	2.629
7/7/2015 14:09	255600	15.927	2.626
7/7/2015 14:24	256500	15.937	2.63
7/7/2015 14:39	257400	15.928	2.627
7/7/2015 14:54	258300	15.946	2.634
7/7/2015 15:09	259200	15.926	2.626
7/7/2015 15:24	260100	15.951	2.636
7/7/2015 15:39	261000	15.974	2.646
7/7/2015 15:54	261900	15.972	2.646
7/7/2015 16:09	262800	15.962	2.641
7/7/2015 16:24	263700	15.962	2.641
7/7/2015 16:39	264600	15.983	2.65
7/7/2015 16:54	265500	15.973	2.646
7/7/2015 17:09	266400	15.98	2.649
7/7/2015 17:24	267300	15.991	2.654
7/7/2015 17:39	268200	15.986	2.652
7/7/2015 17:54	269100	15.988	2.653
7/7/2015 18:09	270000	15.985	2.651
7/7/2015 18:24	270900	15.98	2.649
7/7/2015 18:39	271800	15.986	2.652
7/7/2015 18:54	272700	15.997	2.656
7/7/2015 19:09	273600	15.998	2.657
7/7/2015 19:24	274500	15.996	2.656
7/7/2015 19:39	275400	15.996	2.656
7/7/2015 19:54	276300	15.989	2.653
7/7/2015 20:09	277200	15.987	2.652
7/7/2015 20:24	278100	15.995	2.656
7/7/2015 20:39	279000	15.991	2.654
7/7/2015 20:54	279900	15.99	2.653
7/7/2015 21:09	280800	15.979	2.648
7/7/2015 21:24	281700	15.983	2.65
7/7/2015 21:39	282600	15.978	2.648
7/7/2015 21:54	283500	15.98	2.649
7/7/2015 22:09	284400	15.98	2.649
7/7/2015 22:24	285300	15.981	2.649
7/7/2015 22:39	286200	15.983	2.651
7/7/2015 22:54	287100	15.987	2.652
7/7/2015 23:09	288000	15.987	2.652
7/7/2015 23:24	288900	15.988	2.653
7/7/2015 23:39	289800	15.986	2.652
7/7/2015 23:54	290700	15.993	2.655
7/8/2015 0:09	291600	15.995	2.655
7/8/2015 0:24	292500	15.999	2.657
7/8/2015 0:39	293400	15.999	2.657
7/8/2015 0:54	294300	16.005	2.66
7/8/2015 1:09	295200	16.011	2.662
7/8/2015 1:24	296100	16.014	2.664

7/8/2015 1:39	297000	16.018	2.665
7/8/2015 1:54	297900	16.022	2.667
7/8/2015 2:09	298800	16.024	2.668
7/8/2015 2:24	299700	16.03	2.671
7/8/2015 2:39	300600	16.033	2.672
7/8/2015 2:54	301500	16.036	2.673
7/8/2015 3:09	302400	16.039	2.675
7/8/2015 3:24	303300	16.047	2.678
7/8/2015 3:39	304200	16.05	2.68
7/8/2015 3:54	305100	16.055	2.681
7/8/2015 4:09	306000	16.061	2.684
7/8/2015 4:24	306900	16.065	2.686
7/8/2015 4:39	307800	16.071	2.688
7/8/2015 4:54	308700	16.074	2.69
7/8/2015 5:09	309600	16.075	2.69
7/8/2015 5:24	310500	16.083	2.694
7/8/2015 5:39	311400	16.086	2.695
7/8/2015 5:54	312300	16.092	2.698
7/8/2015 6:09	313200	16.091	2.697
7/8/2015 6:24	314100	16.095	2.699
7/8/2015 6:39	315000	16.101	2.701
7/8/2015 6:54	315900	16.106	2.704
7/8/2015 7:09	316800	16.109	2.705
7/8/2015 7:24	317700	16.121	2.71
7/8/2015 7:39	318600	16.125	2.712
7/8/2015 7:54	319500	16.118	2.709
7/8/2015 8:09	320400	16.131	2.714
7/8/2015 8:24	321300	16.121	2.71
7/8/2015 8:39	322200	16.156	2.725
7/8/2015 8:54	323100	16.158	2.726
7/8/2015 9:09	324000	16.108	2.704
7/8/2015 9:24	324900	16.152	2.723
7/8/2015 9:39	325800	16.134	2.716
7/8/2015 9:54	326700	16.21	2.749
7/8/2015 10:09	327600	16.171	2.732
7/8/2015 10:24	328500	16.181	2.736
7/8/2015 10:39	329400	16.221	2.753
7/8/2015 10:54	330300	16.245	2.764
7/8/2015 11:09	331200	16.203	2.746
7/8/2015 11:24	332100	16.23	2.757
7/8/2015 11:39	333000	16.229	2.757
7/8/2015 11:54	333900	16.233	2.758
7/8/2015 12:09	334800	16.204	2.746
7/8/2015 12:24	335700	16.256	2.769
7/8/2015 12:39	336600	16.248	2.765
7/8/2015 12:54	337500	16.207	2.747
7/8/2015 13:09	338400	16.262	2.771
7/8/2015 13:24	339300	16.236	2.76
7/8/2015 13:39	340200	16.247	2.765
7/8/2015 13:54	341100	16.259	2.77
7/8/2015 14:09	342000	16.24	2.762
7/8/2015 14:24	342900	16.245	2.764
7/8/2015 14:39	343800	16.278	2.778
7/8/2015 14:54	344700	16.256	2.768
7/8/2015 15:09	345600	16.231	2.758
7/8/2015 15:24	346500	16.236	2.76
7/8/2015 15:39	347400	16.294	2.785
7/8/2015 15:54	348300	16.261	2.771

7/8/2015 16:09	349200	16.269	2.774
7/8/2015 16:24	350100	16.265	2.772
7/8/2015 16:39	351000	16.264	2.772
7/8/2015 16:54	351900	16.258	2.769
7/8/2015 17:09	352800	16.255	2.768
7/8/2015 17:24	353700	16.265	2.773
7/8/2015 17:39	354600	16.252	2.767
7/8/2015 17:54	355500	16.259	2.77
7/8/2015 18:09	356400	16.249	2.766
7/8/2015 18:24	357300	16.247	2.765
7/8/2015 18:39	358200	16.239	2.761
7/8/2015 18:54	359100	16.242	2.762
7/8/2015 19:09	360000	16.24	2.762
7/8/2015 19:24	360900	16.246	2.764
7/8/2015 19:39	361800	16.237	2.761
7/8/2015 19:54	362700	16.232	2.758
7/8/2015 20:09	363600	16.231	2.758
7/8/2015 20:24	364500	16.228	2.756
7/8/2015 20:39	365400	16.217	2.752
7/8/2015 20:54	366300	16.206	2.747
7/8/2015 21:09	367200	16.203	2.745
7/8/2015 21:24	368100	16.192	2.741
7/8/2015 21:39	369000	16.188	2.739
7/8/2015 21:54	369900	16.187	2.739
7/8/2015 22:09	370800	16.182	2.737
7/8/2015 22:24	371700	16.186	2.738
7/8/2015 22:39	372600	16.183	2.737
7/8/2015 22:54	373500	16.185	2.738
7/8/2015 23:09	374400	16.186	2.738
7/8/2015 23:24	375300	16.187	2.738
7/8/2015 23:39	376200	16.191	2.74
7/8/2015 23:54	377100	16.188	2.739
7/9/2015 0:09	378000	16.195	2.742
7/9/2015 0:24	378900	16.194	2.742
7/9/2015 0:39	379800	16.193	2.741
7/9/2015 0:54	380700	16.196	2.743
7/9/2015 1:09	381600	16.193	2.741
7/9/2015 1:24	382500	16.198	2.744
7/9/2015 1:39	383400	16.202	2.745
7/9/2015 1:54	384300	16.207	2.747
7/9/2015 2:09	385200	16.21	2.749
7/9/2015 2:24	386100	16.21	2.749
7/9/2015 2:39	387000	16.215	2.751
7/9/2015 2:54	387900	16.217	2.752
7/9/2015 3:09	388800	16.219	2.752
7/9/2015 3:24	389700	16.222	2.754
7/9/2015 3:39	390600	16.222	2.754
7/9/2015 3:54	391500	16.223	2.754
7/9/2015 4:09	392400	16.226	2.756
7/9/2015 4:24	393300	16.227	2.756
7/9/2015 4:39	394200	16.231	2.758
7/9/2015 4:54	395100	16.233	2.759
7/9/2015 5:09	396000	16.234	2.759
7/9/2015 5:24	396900	16.233	2.758
7/9/2015 5:39	397800	16.233	2.759
7/9/2015 5:54	398700	16.236	2.76
7/9/2015 6:09	399600	16.234	2.759
7/9/2015 6:24	400500	16.239	2.761

7/9/2015 6:39	401400	16.238	2.761
7/9/2015 6:54	402300	16.242	2.763
7/9/2015 7:09	403200	16.254	2.768
7/9/2015 7:24	404100	16.243	2.763
7/9/2015 7:39	405000	16.242	2.763
7/9/2015 7:54	405900	16.264	2.772
7/9/2015 8:09	406800	16.253	2.767
7/9/2015 8:24	407700	16.254	2.768
7/9/2015 8:39	408600	16.273	2.776
7/9/2015 8:54	409500	16.262	2.771
7/9/2015 9:09	410400	16.263	2.772
7/9/2015 9:24	411300	16.242	2.762
7/9/2015 9:39	412200	16.288	2.783
7/9/2015 9:54	413100	16.279	2.778
7/9/2015 10:09	414000	16.284	2.781
7/9/2015 10:24	414900	16.287	2.782
7/9/2015 10:39	415800	16.288	2.782
7/9/2015 10:54	416700	16.281	2.779
7/9/2015 11:09	417600	16.27	2.775
7/9/2015 11:24	418500	16.28	2.779
7/9/2015 11:39	419400	16.345	2.807
7/9/2015 11:54	420300	16.27	2.775
7/9/2015 12:09	421200	16.271	2.775
7/9/2015 12:24	422100	16.276	2.777
7/9/2015 12:39	423000	16.284	2.781
7/9/2015 12:54	423900	16.268	2.774
7/9/2015 13:09	424800	16.279	2.778
7/9/2015 13:24	425700	16.289	2.783
7/9/2015 13:39	426600	16.262	2.771
7/9/2015 13:54	427500	16.268	2.774
7/9/2015 14:09	428400	16.262	2.771
7/9/2015 14:24	429300	16.253	2.767
7/9/2015 14:39	430200	16.26	2.771
7/9/2015 14:54	431100	16.279	2.779
7/9/2015 15:09	432000	16.247	2.765
7/9/2015 15:24	432900	16.28	2.779
7/9/2015 15:39	433800	16.252	2.767
7/9/2015 15:54	434700	16.256	2.769
7/9/2015 16:09	435600	16.237	2.76
7/9/2015 16:24	436500	16.244	2.764
7/9/2015 16:39	437400	16.232	2.758
7/9/2015 16:54	438300	16.238	2.761
7/9/2015 17:09	439200	16.238	2.761
7/9/2015 17:24	440100	16.215	2.751
7/9/2015 17:39	441000	16.187	2.739
7/9/2015 17:54	441900	16.198	2.744
7/9/2015 18:09	442800	16.206	2.747
7/9/2015 18:24	443700	16.221	2.753
7/9/2015 18:39	444600	16.2	2.745
7/9/2015 18:54	445500	16.192	2.741
7/9/2015 19:09	446400	16.18	2.736
7/9/2015 19:24	447300	16.188	2.739
7/9/2015 19:39	448200	16.173	2.733
7/9/2015 19:54	449100	16.168	2.73
7/9/2015 20:09	450000	16.156	2.725
7/9/2015 20:24	450900	16.149	2.722
7/9/2015 20:39	451800	16.144	2.72
7/9/2015 20:54	452700	16.132	2.715

7/9/2015 21:09	453600	16.123	2.711
7/9/2015 21:24	454500	16.124	2.712
7/9/2015 21:39	455400	16.114	2.707
7/9/2015 21:54	456300	16.112	2.706
7/9/2015 22:09	457200	16.101	2.701
7/9/2015 22:24	458100	16.101	2.702
7/9/2015 22:39	459000	16.097	2.7
7/9/2015 22:54	459900	16.096	2.699
7/9/2015 23:09	460800	16.095	2.699
7/9/2015 23:24	461700	16.091	2.697
7/9/2015 23:39	462600	16.083	2.694
7/9/2015 23:54	463500	16.081	2.693
7/10/2015 0:09	464400	16.083	2.694
7/10/2015 0:24	465300	16.08	2.692
7/10/2015 0:39	466200	16.079	2.692
7/10/2015 0:54	467100	16.079	2.692
7/10/2015 1:09	468000	16.074	2.69
7/10/2015 1:24	468900	16.076	2.691
7/10/2015 1:39	469800	16.073	2.689
7/10/2015 1:54	470700	16.072	2.689
7/10/2015 2:09	471600	16.066	2.686
7/10/2015 2:24	472500	16.07	2.688
7/10/2015 2:39	473400	16.078	2.692
7/10/2015 2:54	474300	16.074	2.69
7/10/2015 3:09	475200	16.073	2.69
7/10/2015 3:24	476100	16.078	2.692
7/10/2015 3:39	477000	16.078	2.691
7/10/2015 3:54	477900	16.076	2.691
7/10/2015 4:09	478800	16.077	2.691
7/10/2015 4:24	479700	16.078	2.691
7/10/2015 4:39	480600	16.071	2.689
7/10/2015 4:54	481500	16.075	2.69
7/10/2015 5:09	482400	16.072	2.689
7/10/2015 5:24	483300	16.074	2.69
7/10/2015 5:39	484200	16.074	2.69
7/10/2015 5:54	485100	16.076	2.691
7/10/2015 6:09	486000	16.075	2.69
7/10/2015 6:24	486900	16.072	2.689
7/10/2015 6:39	487800	16.077	2.691
7/10/2015 6:54	488700	16.075	2.69
7/10/2015 7:09	489600	16.071	2.688
7/10/2015 7:24	490500	16.074	2.69
7/10/2015 7:39	491400	16.071	2.689
7/10/2015 7:54	492300	16.05	2.679
7/10/2015 8:09	493200	16.081	2.693
7/10/2015 8:24	494100	16.055	2.681
7/10/2015 8:39	495000	16.073	2.689
7/10/2015 8:54	495900	16.068	2.687
7/10/2015 9:09	496800	16.116	2.708
7/10/2015 9:24	497700	16.089	2.696
7/10/2015 9:39	498600	16.089	2.696
7/10/2015 9:54	499500	16.083	2.694
7/10/2015 10:09	500400	16.08	2.693
7/10/2015 10:24	501300	16.079	2.692
7/10/2015 10:39	502200	16.078	2.691

Report Date:	7/10/2015 10:57
Report User Name:	3367tml
Report Computer Name:	01POR-TANDREWS
Application:	WinSitu.exe
Application Version:	5.6.25.0

Log File Properties

File Name	MW-10B_2015-07-10_10-57-09-369.wsl
Create Date	7/10/2015 10:57

Device Properties

Device	Level TROLL 700	
Site	MW-10B	
Device Name		
Serial Number	406239	
Firmware Version	3.03	
Hardware Version	4	
Device Address	3	
Device Comm Cfg	19200	8
	None	1 (Modbus-ASCII)
Used Memory	0	
Used Battery	1	

Log Configuration

Log Name	MW-10B
Created By	3266d_l
Computer Name	04POR-LAMADRID
Application	WinSitu.exe
Application Version	5.6.25.0
Create Date	7/4/2015 3:16:32 PM Pacific Daylight Time
Log Setup Time Zone	Pacific Daylight Time
Notes Size(bytes)	4096
Overwrite when full	Disabled
Scheduled Start Time	Manual Start
Scheduled Stop Time	No Stop Time
Type	Linear
Interval	Days: 0 hrs: 00 mins: 15 secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode	Level Surface Elevation
Specific Gravity	0.999
Level Reference Mode:	Set first logged value to offset
Level Reference Offset:	128.03 (ft)

Other Log Settings

Depth of Probe:	22.9078 (ft)
Head Pressure:	9.92124 (PSI)
Temperature:	12.346 (C)

Log Notes:

Date and Time	Note
7/4/2015 15:16	Used Battery: 1% Used Memory: 1% User Name: 3266d_l

7/4/2015 15:16	Manual Start Command
7/6/2015 13:29	Log Download - Used Battery: 1% Used Memory: 1% User Name: 3698bjm
7/10/2015 10:56	Used Battery: 1% Used Memory: 1% User Name: 3367tml
7/10/2015 10:56	Manual Stop Command

Log Data:

Record Count 559

Sensors 1

1 10406239 Pressure/Temp 30 PSIG (21m/69ft)

Time Zone: Pacific Daylight Time

Date and Time	Elapsed Time Seconds	Sensor: Pres(G) 69ft SN#: 10406239 Level Surface Elevation (ft)	Sensor: Pres(G) 69ft SN#: 10406239 Pressure (PSI)
7/4/2015 15:16	0	128.03	9.926
7/4/2015 15:31	900.001	128.026	9.924
7/4/2015 15:46	1800.001	128.025	9.923
7/4/2015 16:01	2700.001	128.035	9.928
7/4/2015 16:16	3600.001	128.042	9.931
7/4/2015 16:31	4500.001	128.05	9.934
7/4/2015 16:46	5400.001	128.058	9.938
7/4/2015 17:01	6300.001	128.06	9.939
7/4/2015 17:16	7200.001	128.069	9.942
7/4/2015 17:31	8100.001	128.07	9.943
7/4/2015 17:46	9000.001	128.085	9.949
7/4/2015 18:01	9900.001	128.092	9.952
7/4/2015 18:16	10800.001	128.098	9.955
7/4/2015 18:31	11700.001	128.099	9.956
7/4/2015 18:46	12600.001	128.111	9.961
7/4/2015 19:01	13500.001	128.12	9.965
7/4/2015 19:16	14400.001	128.123	9.966
7/4/2015 19:31	15300.001	128.132	9.97
7/4/2015 19:46	16200.001	128.136	9.971
7/4/2015 20:01	17100.001	128.136	9.971
7/4/2015 20:16	18000.001	128.147	9.976
7/4/2015 20:31	18900.001	128.145	9.975
7/4/2015 20:46	19800.001	128.157	9.98
7/4/2015 21:01	20700.001	128.162	9.983
7/4/2015 21:16	21600.001	128.161	9.982
7/4/2015 21:31	22500.001	128.17	9.986
7/4/2015 21:46	23400.001	128.174	9.988
7/4/2015 22:01	24300.001	128.18	9.991
7/4/2015 22:16	25200.001	128.177	9.989
7/4/2015 22:31	26100.001	128.188	9.994
7/4/2015 22:46	27000.001	128.189	9.994
7/4/2015 23:01	27900.001	128.201	10
7/4/2015 23:16	28800.001	128.204	10.001
7/4/2015 23:31	29700.001	128.211	10.004
7/4/2015 23:46	30600.001	128.211	10.004
7/5/2015 0:01	31500.001	128.225	10.01
7/5/2015 0:16	32400.001	128.225	10.01
7/5/2015 0:31	33300.001	128.235	10.015
7/5/2015 0:46	34200.001	128.238	10.016
7/5/2015 1:01	35100.001	128.24	10.017

7/5/2015 1:16	36000.001	128.245	10.019
7/5/2015 1:31	36900.001	128.25	10.021
7/5/2015 1:46	37800.001	128.249	10.02
7/5/2015 2:01	38700.001	128.26	10.025
7/5/2015 2:16	39600.001	128.261	10.026
7/5/2015 2:31	40500.001	128.264	10.027
7/5/2015 2:46	41400.001	128.27	10.029
7/5/2015 3:01	42300.001	128.276	10.032
7/5/2015 3:16	43200.001	128.282	10.035
7/5/2015 3:31	44100.001	128.287	10.037
7/5/2015 3:46	45000.001	128.286	10.037
7/5/2015 4:01	45900.001	128.29	10.038
7/5/2015 4:16	46800.001	128.3	10.042
7/5/2015 4:31	47700.001	128.302	10.043
7/5/2015 4:46	48600.001	128.307	10.046
7/5/2015 5:01	49500.001	128.308	10.046
7/5/2015 5:16	50400.001	128.309	10.047
7/5/2015 5:31	51300.001	128.314	10.049
7/5/2015 5:46	52200.001	128.314	10.049
7/5/2015 6:01	53100.001	128.317	10.05
7/5/2015 6:16	54000.001	128.319	10.051
7/5/2015 6:31	54900.001	128.325	10.054
7/5/2015 6:46	55800.001	128.33	10.056
7/5/2015 7:01	56700.001	128.334	10.057
7/5/2015 7:16	57600.001	128.335	10.058
7/5/2015 7:31	58500.001	128.339	10.059
7/5/2015 7:46	59400.001	128.339	10.059
7/5/2015 8:01	60300.001	128.346	10.062
7/5/2015 8:16	61200.001	128.349	10.064
7/5/2015 8:31	62100.001	128.353	10.065
7/5/2015 8:46	63000.001	128.358	10.068
7/5/2015 9:01	63900.001	128.353	10.065
7/5/2015 9:16	64800.001	128.362	10.069
7/5/2015 9:31	65700.001	128.357	10.067
7/5/2015 9:46	66600.001	128.362	10.07
7/5/2015 10:01	67500.001	128.362	10.069
7/5/2015 10:16	68400.001	128.369	10.073
7/5/2015 10:31	69300.001	128.371	10.073
7/5/2015 10:46	70200.001	128.378	10.076
7/5/2015 11:01	71100.001	128.382	10.078
7/5/2015 11:16	72000.001	128.387	10.08
7/5/2015 11:31	72900.001	128.39	10.082
7/5/2015 11:46	73800.001	128.39	10.081
7/5/2015 12:01	74700.001	128.4	10.086
7/5/2015 12:16	75600.001	128.395	10.084
7/5/2015 12:31	76500.001	128.398	10.085
7/5/2015 12:46	77400.001	128.405	10.088
7/5/2015 13:01	78300.001	128.407	10.089
7/5/2015 13:16	79200.001	128.411	10.091
7/5/2015 13:31	80100.001	128.413	10.092
7/5/2015 13:46	81000.001	128.417	10.093
7/5/2015 14:01	81900.001	128.419	10.094
7/5/2015 14:16	82800.001	128.427	10.098
7/5/2015 14:31	83700.001	128.427	10.097
7/5/2015 14:46	84600.001	128.434	10.101
7/5/2015 15:01	85500.001	128.433	10.1
7/5/2015 15:16	86400.001	128.436	10.102
7/5/2015 15:31	87300.001	128.447	10.106

7/5/2015 15:46	88200.001	128.448	10.107
7/5/2015 16:01	89100.001	128.45	10.108
7/5/2015 16:16	90000.001	128.456	10.11
7/5/2015 16:31	90900.001	128.46	10.112
7/5/2015 16:46	91800.001	128.464	10.114
7/5/2015 17:01	92700.001	128.469	10.116
7/5/2015 17:16	93600.001	128.47	10.116
7/5/2015 17:31	94500.001	128.473	10.117
7/5/2015 17:46	95400.001	128.48	10.12
7/5/2015 18:01	96300.001	128.483	10.122
7/5/2015 18:16	97200.001	128.484	10.122
7/5/2015 18:31	98100.001	128.487	10.124
7/5/2015 18:46	99000.001	128.493	10.126
7/5/2015 19:01	99900.001	128.496	10.127
7/5/2015 19:16	100800.001	128.504	10.131
7/5/2015 19:31	101700.001	128.508	10.133
7/5/2015 19:46	102600.001	128.508	10.133
7/5/2015 20:01	103500.001	128.519	10.138
7/5/2015 20:16	104400.001	128.518	10.137
7/5/2015 20:31	105300.001	128.523	10.139
7/5/2015 20:46	106200.001	128.52	10.138
7/5/2015 21:01	107100.001	128.529	10.142
7/5/2015 21:16	108000.001	128.531	10.143
7/5/2015 21:31	108900.001	128.535	10.144
7/5/2015 21:46	109800.001	128.537	10.145
7/5/2015 22:01	110700.001	128.54	10.146
7/5/2015 22:16	111600.001	128.538	10.146
7/5/2015 22:31	112500.001	128.548	10.15
7/5/2015 22:46	113400.001	128.551	10.151
7/5/2015 23:01	114300.001	128.555	10.153
7/5/2015 23:16	115200.001	128.559	10.155
7/5/2015 23:31	116100.001	128.559	10.155
7/5/2015 23:46	117000.001	128.559	10.155
7/6/2015 0:01	117900.001	128.566	10.158
7/6/2015 0:16	118800.001	128.569	10.159
7/6/2015 0:31	119700.001	128.57	10.16
7/6/2015 0:46	120600.001	128.575	10.162
7/6/2015 1:01	121500.001	128.576	10.162
7/6/2015 1:16	122400.001	128.584	10.165
7/6/2015 1:31	123300.001	128.584	10.166
7/6/2015 1:46	124200.001	128.588	10.167
7/6/2015 2:01	125100.001	128.59	10.168
7/6/2015 2:16	126000.001	128.588	10.167
7/6/2015 2:31	126900.001	128.594	10.17
7/6/2015 2:46	127800.001	128.594	10.17
7/6/2015 3:01	128700.001	128.595	10.17
7/6/2015 3:16	129600.001	128.599	10.172
7/6/2015 3:31	130500.001	128.603	10.174
7/6/2015 3:46	131400.001	128.611	10.177
7/6/2015 4:01	132300.001	128.601	10.173
7/6/2015 4:16	133200.001	128.606	10.175
7/6/2015 4:31	134100.001	128.614	10.179
7/6/2015 4:46	135000.001	128.61	10.177
7/6/2015 5:01	135900.001	128.612	10.178
7/6/2015 5:16	136800.001	128.61	10.177
7/6/2015 5:31	137700.001	128.615	10.179
7/6/2015 5:46	138600.001	128.62	10.181
7/6/2015 6:01	139500.001	128.624	10.183

7/6/2015 6:16	140400.001	128.623	10.183
7/6/2015 6:31	141300.001	128.626	10.184
7/6/2015 6:46	142200.001	128.63	10.185
7/6/2015 7:01	143100.001	128.625	10.183
7/6/2015 7:16	144000.001	128.631	10.186
7/6/2015 7:31	144900.001	128.623	10.183
7/6/2015 7:46	145800.001	128.634	10.187
7/6/2015 8:01	146700.001	128.638	10.189
7/6/2015 8:16	147600.001	128.636	10.188
7/6/2015 8:31	148500.001	128.634	10.187
7/6/2015 8:46	149400.001	128.64	10.19
7/6/2015 9:01	150300.001	128.639	10.19
7/6/2015 9:16	151200.001	128.64	10.19
7/6/2015 9:31	152100.001	128.644	10.191
7/6/2015 9:46	153000.001	128.645	10.192
7/6/2015 10:01	153900.001	128.648	10.193
7/6/2015 10:16	154800.001	128.648	10.193
7/6/2015 10:31	155700.001	128.657	10.197
7/6/2015 10:46	156600.001	128.652	10.195
7/6/2015 11:01	157500.001	128.657	10.197
7/6/2015 11:16	158400.001	128.653	10.195
7/6/2015 11:31	159300.001	128.66	10.198
7/6/2015 11:46	160200.001	128.655	10.196
7/6/2015 12:01	161100.001	128.66	10.198
7/6/2015 12:16	162000.001	128.653	10.195
7/6/2015 12:31	162900.001	128.647	10.193
7/6/2015 12:46	163800.001	128.649	10.194
7/6/2015 13:01	164700.001	128.645	10.192
7/6/2015 13:16	165600.001	128.643	10.191
7/6/2015 13:31	166500.001	128.642	10.191
7/6/2015 13:46	167400.001	128.631	10.186
7/6/2015 14:01	168300.001	128.625	10.183
7/6/2015 14:16	169200.001	128.611	10.177
7/6/2015 14:31	170100.001	128.6	10.172
7/6/2015 14:46	171000.001	128.594	10.17
7/6/2015 15:01	171900.001	128.578	10.163
7/6/2015 15:16	172800.001	128.564	10.157
7/6/2015 15:31	173700.001	128.555	10.153
7/6/2015 15:46	174600.001	128.539	10.146
7/6/2015 16:01	175500.001	128.524	10.139
7/6/2015 16:16	176400.001	128.502	10.13
7/6/2015 16:31	177300.001	128.49	10.125
7/6/2015 16:46	178200.001	128.475	10.118
7/6/2015 17:01	179100.001	128.453	10.109
7/6/2015 17:16	180000.001	128.43	10.099
7/6/2015 17:31	180900.001	128.409	10.09
7/6/2015 17:46	181800.001	128.386	10.08
7/6/2015 18:01	182700.001	128.357	10.067
7/6/2015 18:16	183600.001	128.333	10.057
7/6/2015 18:31	184500.001	128.308	10.046
7/6/2015 18:46	185400.001	128.274	10.031
7/6/2015 19:01	186300.001	128.249	10.02
7/6/2015 19:16	187200.001	128.214	10.005
7/6/2015 19:31	188100.001	128.189	9.994
7/6/2015 19:46	189000.001	128.159	9.981
7/6/2015 20:01	189900.001	128.128	9.968
7/6/2015 20:16	190800.001	128.105	9.958
7/6/2015 20:31	191700.001	128.081	9.948

7/6/2015 20:46	192600.001	128.061	9.939
7/6/2015 21:01	193500.001	128.041	9.93
7/6/2015 21:16	194400.001	128.023	9.923
7/6/2015 21:31	195300.001	128.013	9.918
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7/7/2015 3:31	216900.001	127.882	9.861
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7/7/2015 19:46	275400.001	127.147	9.543
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7/9/2015 21:46	455400.001	127.269	9.596
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APPENDIX E

Supporting Documentation for the Water-Use Survey Update

Surface Water Rights Search Query Results
and
Newly Identified Surface Water Rights Information

Water Rights Information Query Results (T5S/R5W, Sections 11+12)

Records/Page: 30

	Contacts	Application	Permit	Certificate	Claim	Decree	Transfers	Status
Select	OWNER: JOHN BERNARDS 14555 SW MCCABE CHAPEL RD MCMINNVILLE, OR 971289725	G11870	G11685					NC
Select	OWNER: CHESTER L MULKEY MCMINNVILLE, OR 97128	S13170	S9411	13681				NC
Select	OWNER: MRS. GEORGE C FULLER BOX 218 AMITY, OR 97101	S17770	S13457	15396				NC
Select	OWNER: RALPH H BERGSTROM RT 1 MCMINNVILLE, OR 97128	S17666	S13360	16629				NC
Select	OWNER: MARIE BERGSTROM RT 1 MCMINNVILLE, OR 97128	S17667	S13361	16630				NC
Select	OWNER: CARL O/MARIE BERGSTROM RT 1 MCMINNVILLE, OR 97128	S17668	S13362	16631				NC
Select	OWNER: VAN K LAWSON RT 1 BOX 210 MCMINNVILLE, OR 97128	S18232	S13893	19767				NC
Select	OWNER: CHESTER L MULKEY 624 SECOND ST MCMINNVILLE, OR 97128	S23025	S18196	19870			IL144 (Changes this right)	NC
Select	OWNER: CHESTER L MULKEY RT 3 MCMINNVILLE, OR 97128	S17643	S13340	19936			IL144 (Changes this right)	NC
Select	OWNER: MARVIN BERNARDS RT 1 BOX 276 MCMINNVILLE, OR 97128	S45969	S34335	39576				NC
Select	OWNER: JOHN W CRAWFORD RT 1 BOX 210 MCMINNVILLE, OR 97128	S41827	S31306	40344				NC
Select	OWNER: JIM BURREL RT 3 BOX 185E MCMINNVILLE, OR 97128	S41593	S31062	40516				NC
Select		S46164	S34487	42151				NC

(T5S/R5W, sections 11 & 12)

	OWNER: EUGENE J SCHMIDT RT 3 BOX 205 MCMINNVILLE, OR 97128							
Select	OWNER: BARBARA C DEVINE 4977 JACOBY CR RD BAYSIDE, CA 95524	S41837	S31310	50879				NC
Select	OWNER: STEVEN RICE PO BOX 329 MCMINNVILLE, OR 97128	S70673	S51312	72453				NC
Select	OWNER: STEVEN RICE PO BOX 329 MCMINNVILLE, OR 97128	R70674	R11410	72454				NC
Select	OWNER: MARVIN BERNARDS 13801 SW MASONVILLE RD MCMINNVILLE, OR 97128	S34661	S27225	75437			T7205 (Remaining)	NC
Select	OWNER: RIVERBEND LANDFILL CO. INC. 13469 SW HWY 18 MCMINNVILLE, OR 97128	S23026	S18197	76915			T8563 (Remaining)	NC
Select	OWNER: STEVEN RICE PO BOX 1075 MCMINNVILLE, OR 97128	S52137	S39268	83172				NC
Select	OWNER: STEVEN RICE PO BOX 329 MCMINNVILLE, OR 97128	R70675	R11368	84140				NC
Select	OWNER: STEVEN RICE PO BOX 329 MCMINNVILLE, OR 97128	S70676	S51217	84141				NC
Select	AGENT: JMS ENGINEERING JAMES SCHUETTE 3000 MARKET ST NE SUITE 426 SALEM, OR 97301 APPLICANT: JOHN BERNARDS 14295 SW MASONVILLE RD MCMINNVILLE, OR 97128-9725 APPLICANT: MARY BETH BERNARDS 14295 SW MASONVILLE RD MCMINNVILLE, OR 97128-9725	S28275	S22231				T11426 (Confirming)	NC
Select	AGENT: JMS ENGINEERING JAMES SCHUETTE 3000 MARKET ST NE SUITE 426 SALEM, OR 97301 APPLICANT: JOHN BERNARDS 14295 SW MASONVILLE RD MCMINNVILLE, OR 97128-9725	S49342	S36991				T11426 (Confirming)	NC

(T5S/R5W, Sections 11 & 12)

	APPLICANT: MARY BETH BERNARDS 14295 SW MASONVILLE RD MCMINNVILLE, OR 97128-9725							
Select	OWNER: JOHN BERNARDS 14555 SW MCCABE CHAPEL RD MCMINNVILLE, OR 971289725	S69760	S51712	87862				NC
Select	OWNER: RIVERBEND LANDFILL CO. INC. 13469 SW HWY 18 MCMINNVILLE, OR 97128	S23026	S18197	88660			T8563	NC
Select	OWNER: MARVIN BERNARDS 13801 SW MASONVILLE RD MCMINNVILLE, OR 97128	S34661	S27225	89013			T7205	NC

Download: Point of diversion data, Place of use data, Stakeholder data

Return to WRIS Query

Water Rights Information Query Results (T5S/R4W, Section 6)

Records/Page: 20

	Contacts	Application	Permit	Certificate	Claim	Decree	Transfers	Status
Select	OWNER: CHARLIE REED RT 1 BOX 202 MCMINNVILLE, OR 97128	S42221	S31575	40629				NC
Select	OWNER: RANDY COLEMAN 150 DANIELS MCMINNVILLE, OR 97128	S51618	S37397	48103				NC
Select	OWNER: HERBERT C COLEMAN RT 3 BOX 498 MCMINNVILLE, OR 97128	S55147	S41341	48511				NC
Select	OWNER: BETTY JEAN YOCKEY 3000 SW RIDGEWOOD AV PORTLAND, OR 97225	S55662	S41697	48512				NC
Select	OWNER: RANDY COLEMAN 150 DANIELS MCMINNVILLE, OR 97128	S55718	S41732	48513				NC
Select	OWNER: ELMER SHARER C/O EDWIN SHARER RT 1, BOX 204 MCMINNVILLE, OR 97128	S51039	S38520	65177				NC
Select	OWNER: HERBERT C COLEMAN RT 3 BOX 498 MCMINNVILLE, OR 97128	S59732	S44890	67142			T6901 (Changes this right)	NC
Select	OWNER: ELMER SHARER RT 1 BOX 204 MCMINNVILLE, OR 97128	S55166	S41461	81071			T9281	NC
Select	APPLICANT: ROBINSON FARM LLC RICK ROBINSON PO BOX 100 AMITY, OR 97101 APPLICANT: ROBINSON FARMS LLC PO BOX 100 AMITY, OR 97101	S24118	S19336				T11605 (Confirming)	NC
Select	OWNER: ROBINSON FARM LLC RICK ROBINSON PO BOX 100 AMITY, OR 97101	S23812	S19093	89284			T9281	NC
Select	OWNER: ROBINSON FARM LLC RICK ROBINSON PO BOX 100 AMITY, OR 97101	S27312	S22343	89285			T9281	NC

(T5S/R4W, Section 6

Select	OWNER: ROBINSON FARM LLC RICK ROBINSON PO BOX 100 AMITY, OR 97101	S55166	S41461	89286			T9281	NC
Select	OWNER: CHARLIE REED RT 1 BOX 202 MCMINNVILLE, OR 97128	S24118	S19336	89239			T11605 T11884 (Changes this right)	NC
Select	OWNER: ROBINSON FARM LLC RICK ROBINSON PO BOX 100 AMITY, OR 97101 OWNER: ROBINSON FARMS LLC PO BOX 100 AMITY, OR 97101	R87919	R15071					NC
Select	OWNER: MCPHILLIPS FARMS INC. (C/O) LINDA COUNTRYMAN CPA PO BOX 1329 MCMINNVILLE, OR 97128	R70270	R11583	89793				NC
Select	OWNER: MCPHILLIPS FARMS INC. (C/O) LINDA COUNTRYMAN CPA PO BOX 1329 MCMINNVILLE, OR 97128	S70187	S51714	89794				NC

Download: Point of diversion data, Place of use data, Stakeholder data

Return to WRIS Query

Water Rights Information Query Results (cancelled water Right)

Records/Page: 10

	Contacts	Application	Permit	Certificate	Claim	Decree	**Transfers**	Status
Select	OWNER: MARVIN J BERNARDS 14295 SW MASONVILLE RD MCMINNVILLE, OR 97128	S70203	S51497					CN

Download: Point of diversion data, Place of use data, Stakeholder data

Return to WRIS Query

Water Rights Information Query Results (cancelled water Right)

Records/Page: 10

	Contacts	Application	Permit	Certificate	Claim	Decree	Transfers	Status
Select	OWNER: MARFA KUZMIN 13060 FROLOV DR NE GERVAIS, OR 97026	G8698	G8078					CN

Download: Point of diversion data, Place of use data, Stakeholder data

Return to WRIS Query

Water Rights Information Query Results (Transfer)

Records/Page: 10

	Contacts	Application	Permit	Certificate	Claim	Decree	Transfers	Status
Select	OWNER: CHESTER MULKEY 624 E SECOND ST MCMINNVILLE, OR 97128	S23026	S18197	19485				CN
Select	OWNER: RIVERBEND LANDFILL CO. INC. 13469 SW HWY 18 MCMINNVILLE, OR 97128	S23026	S18197	76915			T8563 (Remaining)	NC
Select	OWNER: RIVERBEND LANDFILL CO. INC. 13469 SW HWY 18 MCMINNVILLE, OR 97128	S23026	S18197	88660			T8563	NC

Download: Point of diversion data, Place of use data, Stakeholder data

Return to WRIS Query

Water Rights Information Query Results (Transfer)

Records/Page: 10

	Contacts	Application	Permit	Certificate	Claim	Decree	Transfers	Status
Select	OWNER: OSCAR WIDEMAN RT 3 BOX 208 MCMINNVILLE, OR 97128	S28275	S22231	24751			T2686 (Changes this right)	CN
Select	OWNER: EZEKIEL WILLIAMS RT 3 BOX 208 MCMINNVILLE, OR 97128	S28275	S22231	40415			T2686 (Confirming) T11426 (Changes this right)	CN
Select	AGENT: JMS ENGINEERING JAMES SCHUETTE 3000 MARKET ST NE SUITE 426 SALEM, OR 97301 APPLICANT: JOHN BERNARDS 14295 SW MASONVILLE RD MCMINNVILLE, OR 97128-9725 APPLICANT: MARY BETH BERNARDS 14295 SW MASONVILLE RD MCMINNVILLE, OR 97128-9725	S28275	S22231				T11426 (Confirming)	NC

Download: Point of diversion data, Place of use data, Stakeholder data

Return to WRIS Query

Water Rights Information Query Results (Transfer)

Records/Page: 10

	Contacts	Application	Permit	Certificate	Claim	Decree	Transfers	Status
Select	OWNER: CHARLES/VIVIAN HEADD RT 3 BOX 208 MCMINNVILLE, OR 97128	S49342	S36991	45126			T11426 (Changes this right)	CN
Select	AGENT: JMS ENGINEERING JAMES SCHUETTE 3000 MARKET ST NE SUITE 426 SALEM, OR 97301 APPLICANT: JOHN BERNARDS 14295 SW MASONVILLE RD MCMINNVILLE, OR 97128-9725 APPLICANT: MARY BETH BERNARDS 14295 SW MASONVILLE RD MCMINNVILLE, OR 97128-9725	S49342	S36991				T11426 (Confirming)	NC

Download: Point of diversion data, Place of use data, Stakeholder data

Return to WRIS Query

Water Rights Information Query Results (Transfer)

Records/Page: 10

	Contacts	Application	Permit	Certificate	Claim	Decree	Transfers	Status
Select	C/O: EDWIN SHARER RT 1 BOX 204 MCMINNVILLE, OR 97128 OWNER: ELMER SHARER RT 1 BOX 204 MCMINNVILLE, OR 97128	S55166	S41461	65195			T9012 (Changes this right) T9281 (Changes this right)	CN
Select	OWNER: ELMER SHARER RT 1 BOX 204 MCMINNVILLE, OR 97128	S55166	S41461	81071			T9281	NC
Select	OWNER: ROBINSON FARM LLC RICK ROBINSON PO BOX 100 AMITY, OR 97101	S55166	S41461	89286			T9281	NC

Download: Point of diversion data, Place of use data, Stakeholder data

Return to WRIS Query

Water Rights Information Query Results (Transfer)

Records/Page: 10

	Contacts	Application	Permit	Certificate	Claim	Decree	Transfers	Status
Select	OWNER: HAROLD HELLER RT 1 BOX 207 MCMINNVILLE, OR 97128	S23812	S19093	19892			T9012 (Changes this right) T9281 (Changes this right)	CN
Select	OWNER: ROBINSON FARM LLC RICK ROBINSON PO BOX 100 AMITY, OR 97101	S23812	S19093	89284			T9281	NC

Download: Point of diversion data, Place of use data, Stakeholder data

Return to WRIS Query

Water Rights Information Query Results (Transfer)

Records/Page: 10

	Contacts	Application	Permit	Certificate	Claim	Decree	Transfers	Status
Select	OWNER: CHARLIE REED RT 1 BOX 202 MCMINNVILLE, OR 97128	S24118	S19336	22179			T11605 (Changes this right)	CN
Select	APPLICANT: ROBINSON FARM LLC RICK ROBINSON PO BOX 100 AMITY, OR 97101 APPLICANT: ROBINSON FARMS LLC PO BOX 100 AMITY, OR 97101	S24118	S19336				T11605 (Confirming)	NC
Select	OWNER: CHARLIE REED RT 1 BOX 202 MCMINNVILLE, OR 97128	S24118	S19336	89239			T11605 T11884 (Changes this right)	NC

Download: Point of diversion data, Place of use data, Stakeholder data

Return to WRIS Query

Water Rights Information Query Results (Transfer)

Records/Page: 10

	Contacts	Application	Permit	Certificate	Claim	Decree	Transfers	Status
Select	OWNER: HAROLD HELLER RT 1 BOX 207 MCMINNVILLE, OR 97128	S27312	S22343	22239			T9012 (Changes this right) T9281 (Changes this right)	CN
Select	OWNER: ROBINSON FARM LLC RICK ROBINSON PO BOX 100 AMITY, OR 97101	S27312	S22343	89285			T9281	NC

Download: Point of diversion data, Place of use data, Stakeholder data

Return to WRIS Query

STATE OF OREGON

COUNTY OF YAMHILL

PERMIT TO APPROPRIATE THE PUBLIC WATERS

THIS PERMIT IS HEREBY ISSUED TO

JOHN G. BERNARDS
14555 SW McCABE CHAPEL ROAD
McMINNVILLE, OREGON 97128-9725

The specific limits for the use are listed below along with conditions of use.

APPLICATION FILE NUMBER: S-69760

SOURCE OF WATER: SOUTH YAMHILL RIVER, TRIBUTARY OF YAMHILL RIVER

PURPOSE OR USE: IRRIGATION OF 91.5 ACRES

MAXIMUM FLOW/VOLUME ALLOWED: 1.14 CFS

PERIOD OF USE: APRIL 1 THROUGH APRIL 30

DATE OF PRIORITY: NOVEMBER 17, 1988

POINT OF DIVERSION LOCATION: NW 1/4 NW 1/4, SECTION 12, T 5 S, R 5 W, W.M.; 850 FEET SOUTH AND 180 FEET EAST FROM THE NW CORNER OF SECTION 12

The amount of water used for irrigation under this right, together with the amount secured under any other right existing for the same lands, is limited to a diversion of ONE-EIGHTIETH of one cubic foot per second (or its equivalent) and 2.5 acre-feet for each acre irrigated during the irrigation season of each year.

THE PLACE OF USE IS LOCATED AS FOLLOWS:

NE 1/4	NE 1/4	0.8 ACRE
SE 1/4	NE 1/4	0.2 ACRE
SECTION 10		
NW 1/4	NE 1/4	8.3 ACRES
SW 1/4	NE 1/4	4.0 ACRES
NE 1/4	NW 1/4	20.0 ACRES
NW 1/4	NW 1/4	19.7 ACRES
SW 1/4	NW 1/4	19.0 ACRES
SE 1/4	NW 1/4	19.5 ACRES
SECTION 11		

TOWNSHIP 5 SOUTH, RANGE 5 WEST, W.M.

Measurement, recording and reporting conditions:

A. Before water use may begin under this permit, the permittee shall install a meter or other suitable measuring device as approved by the Director. The permittee shall maintain the meter or measuring device in good working order.

B. The permittee shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.

C. The Director may require the permittee to keep and maintain a record of the amount (volume) of water used and may require the permittee to report water use on a periodic schedule as established by the Director. In addition, the Director may require the permittee to report general water use information, the periods of water use and the place and nature of use of

water under the permit. The Director may provide an opportunity for the permittee to submit alternative reporting procedures for review and approval.

Diversion screening or fish passage facilities shall be designed, installed, and operated to Oregon Department of Fish & Wildlife specifications.

The permittee shall not construct, operate or maintain any dam or artificial obstruction to fish passage in the channel of the subject stream.

STANDARD CONDITIONS

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

Failure to comply with any of the provisions of this permit may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the permit.

This permit is for the beneficial use of water without waste. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

The use of water allowed herein may be made only at times when sufficient water is available to satisfy all prior rights, including prior rights for maintaining instream flows.

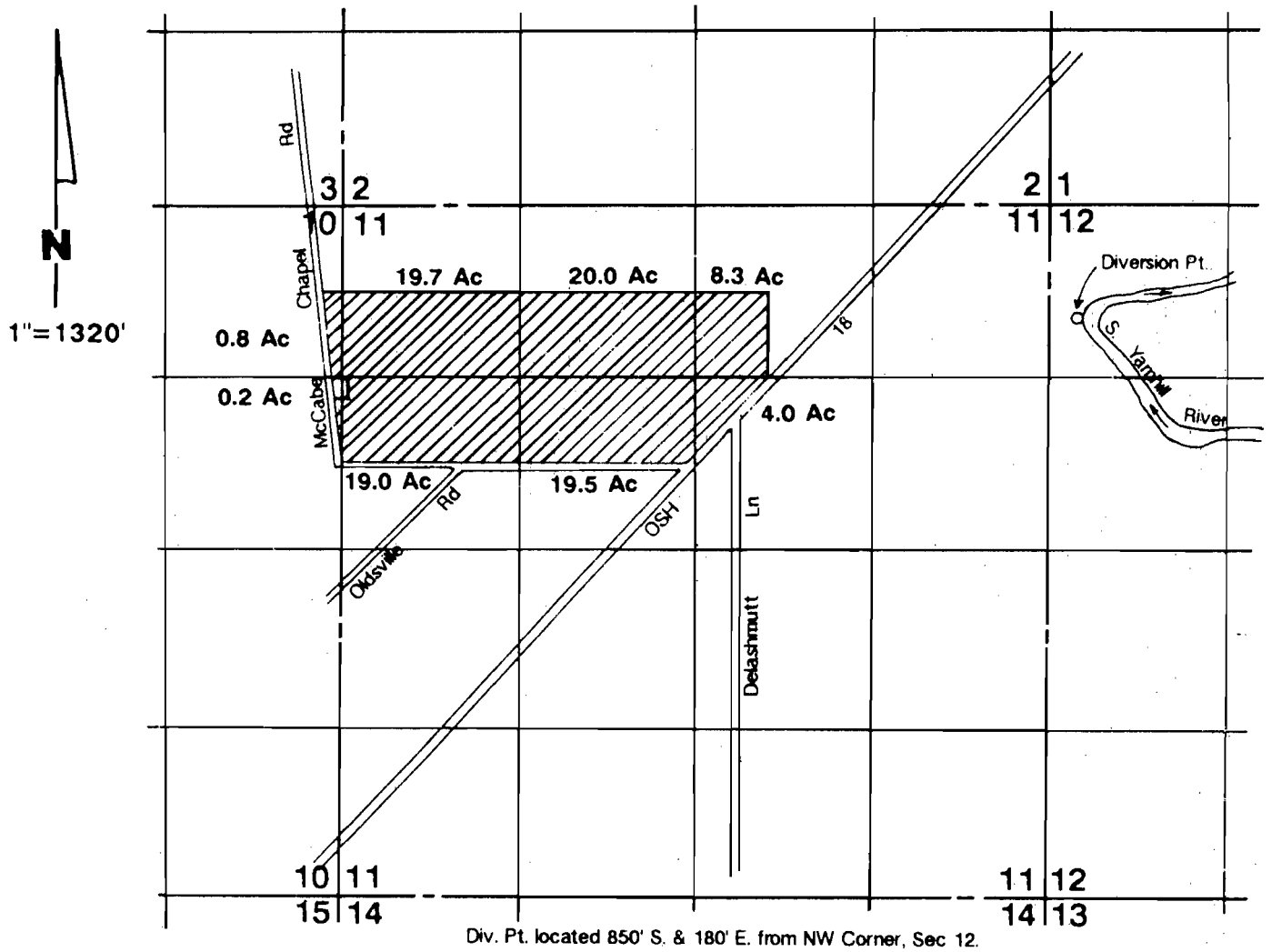
The Director finds that the proposed use(s) of water described by this permit, as conditioned, will not impair or be detrimental to the public interest.

Actual construction work shall begin within one year of permit issuance and shall be completed on or before October 1, 1997. Complete application of the water to the use shall be made on or before October 1, 1998.

Issued October 17, 1995

Water Resources Department
for Martha O. Pagel
Director

T5S., R.5W., W.M.



Div. Pt. located 850' S. & 180' E. from NW Corner, Sec 12.

Area to be irrigated

RECEIVED
NOV 17 1988
WATER RESOURCES DEPT
SALEM, OREGON

John G. Bernards

APPLICATION MAP

Application 69760 Permit No. 51712

NOTE: Map is for purpose of identifying location of water right and has no intent to dimension or locate property ownership lines.

Certified Water Right Examiner
#117
James M. Schuetto
Nov. 19, 1987
STATE OF OREGON

STATE OF OREGON

COUNTY OF Yamhill

PERMIT TO APPROPRIATE THE PUBLIC WATERS

THIS PERMIT IS HEREBY ISSUED TO

THOMAS J. SCHMIDT
13940 SW HIGHWAY 18
MCMINNVILLE, OREGON 97128

The specific limits for the use are listed below along with conditions of use.

APPLICATION FILE NUMBER: R-70270

SOURCE OF WATER: SOUTH YAMHILL RIVER, TRIBUTARY TO YAMHILL RIVER

STORAGE FACILITY: AN UNNAMED RESERVOIR

PURPOSE OR USE: STORAGE FOR IRRIGATION

MAXIMUM FLOW/VOLUME ALLOWED: 9.2 ACRE-FEET

PERIOD OF USE: Water may be appropriated for storage during the period November 1 through April 30.

DATE OF PRIORITY: MARCH 30. 1990

THE DAM: The total area proposed to be submerged by the reservoir, when full, is 4.0 acres; the proposed maximum depth of water is 6.0 feet. The maximum height of the dam shall not exceed 9.9 feet.

DAM LOCATION: NE 1/4 SW 1/4, SECTION 6, TOWNSHIP 5 SOUTH, RANGE 4 WEST, W.M.

THE PLACE OF USE IS LOCATED AS FOLLOWS:

NE 1/4 SW 1/4, NW 1/4 SE 1/4, SECTION 6, TOWNSHIP 5 SOUTH, RANGE 4 WEST, W.M.

Measurement, recording and reporting conditions:

A. Before water use may begin under this permit, the permittee shall install a meter or other suitable measuring device as approved by the Director. The permittee shall maintain the meter or measuring device in good working order.

B. The permittee shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.

C. The Director may require the permittee to keep and maintain a record of the amount (volume) of water used and may require the permittee to report water use on a periodic schedule as established by the Director. In addition, the Director may require the permittee to report general water use information, the periods of water use and the place and nature of use of water under the permit. The Director may provide an opportunity for the permittee to submit alternative reporting procedures for review and approval.

The storage of water allowed herein is subject to the installation and maintenance of an fully functional conduit/gate assembly having a minimum diameter of 8 inches.

Use under this permit is limited to the reservoir area. This permit does not provide for the appropriation of water for maintaining the water level or maintaining a suitable fresh water condition.

STANDARD CONDITIONS

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

Failure to comply with any of the provisions of this permit may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the permit.

This permit is for the beneficial use of water without waste. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

The use of water allowed herein may be made only at times when sufficient water is available to satisfy all prior rights, including prior rights for maintaining instream flows.

The Director finds that the proposed use(s) of water described by this permit, as conditioned, will not impair or be detrimental to the public interest.

Actual construction work shall begin within one year from permit issuance and shall be completed on or before October 1, 1997. Complete application of the water to the use shall be made on or before October 1, 1998.

Issued October 17, 1995

Martha O. Pagel

Water Resources Department
Martha O. Pagel
Director

App # R-70270 Permit # R11583

RECEIVED

AUG 13 1992

WATER RESOURCES DEPT.
SALEM, OREGON

Map for: Tom Schmidt

Location: The N.E. 1/4 & N.W. 1/4 & S.E. 1/4 & S.W. 1/4 of the N.W. 1/4 and also the N.W. 1/4 & N.E. 1/4 & S.E. 1/4 of the S.W. 1/4 and also the N.W. 1/4 of the S.E. 1/4 of Section 6, T.5 S., R.4 W., W.M., and also the S.E. 1/4 of the N.E. 1/4 and the N.E. 1/4 of the S.E. 1/4 of Section 1, T.5 S., R.5 W., W.M., J. A. Cornwall D.L.C No.64, Yamhill County, Oregon.

Tax Lot:

Application No.

Date : 7 July 1992

By : Matt Dunckel & Assoc.
19010 Baker Creek Rd.
McMinnville, Oregon 97128
Phone : 472-7904

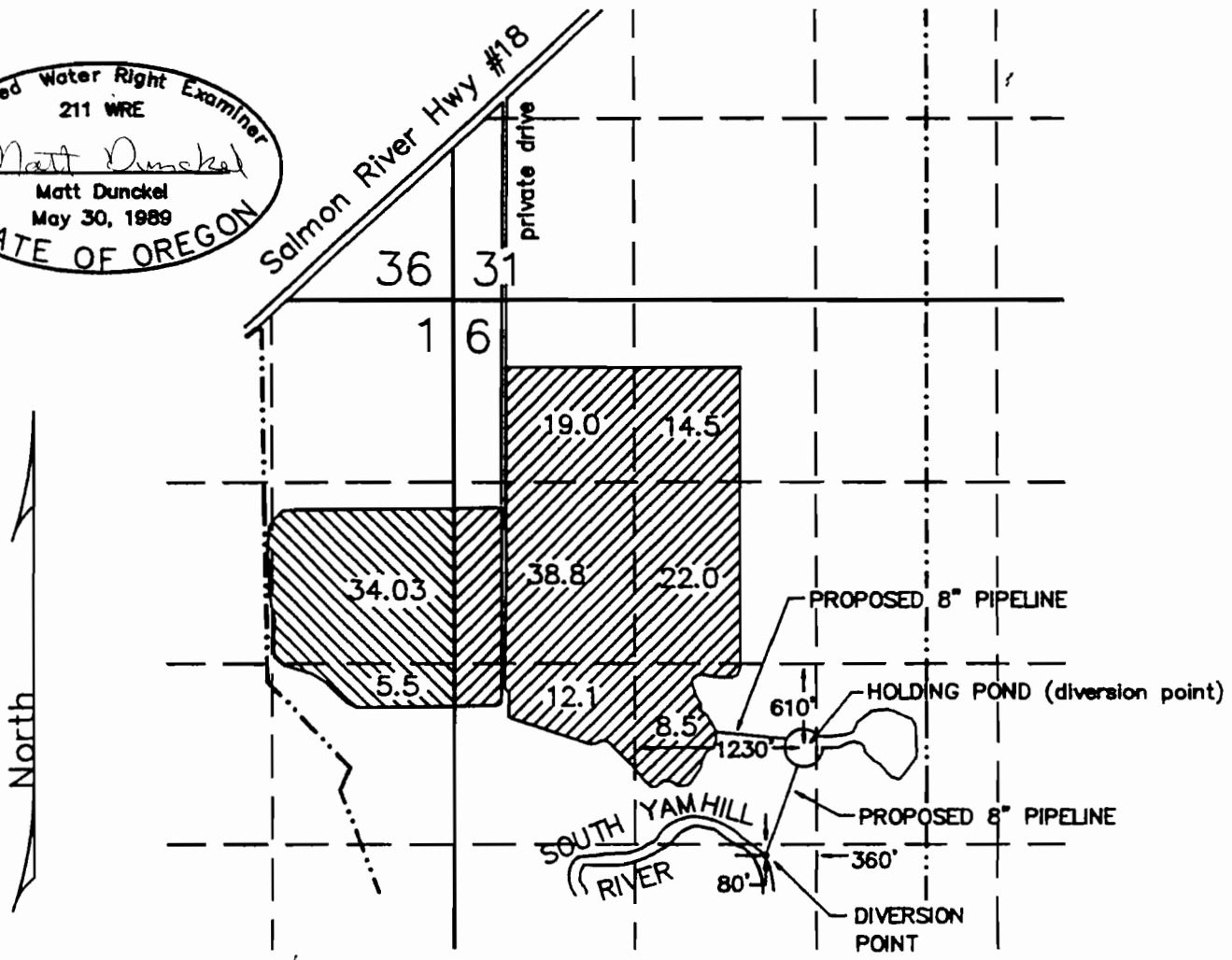
LEGEND:

= Property line

= Section line

= "40" line

Certified Water Right Examiner
211 WRE
Matt Dunckel
Matt Dunckel
May 30, 1989
STATE OF OREGON



Scale : 1" = 1320'

(See orig. map for dist. in feet for POD, from #685 NW Corner, Sect. 6.)

STATE OF OREGON

COUNTY OF Yamhill

PERMIT TO APPROPRIATE THE PUBLIC WATERS

THIS PERMIT IS HEREBY ISSUED TO

THOMAS J. SCHMIDT
13940 SW HIGHWAY 18
MCMINNVILLE, OREGON 97128

The specific limits for the use are listed below along with conditions of use.

APPLICATION FILE NUMBER: S-70187

SOURCE OF WATER: SOUTH YAMHILL RIVER AND AN UNNAMED RESERVOIR CONSTRUCTED UNDER APPLICATION R-70270, PERMIT R-11583, TRIBUTARIES OF YAMHILL RIVER

PURPOSE OR USE: IRRIGATION OF 154.4 ACRES

MAXIMUM FLOW: 1.23 CUBIC FEET PER SECOND FROM LIVE FLOW AND 9.2 ACRE-FEET STORED WATER ONLY

SEASON OF USE: April 1 through April 30 for live flow. Stored water from the unnamed reservoir may be appropriated during the period April 1 through September 30

DATE OF PRIORITY: February 5, 1990

POINT OF DIVERSION LOCATION: NE 1/4 SW 1/4, SECTION 6, T 5 S, R 4 W, W.M.; 3800 FEET SOUTH & 1450 FEET EAST FROM NW CORNER, SECTION 6

The amount of water used for irrigation under this right, together with the amount secured under any other right existing for the same lands, is limited to a diversion of ONE-EIGHTIETH of one cubic foot per second (or its equivalent) and 2.5 acre-feet for each acre irrigated during the irrigation season of each year.

THE PLACE OF USE IS LOCATED AS FOLLOWS:

NE 1/4 NW 1/4 14.5 ACRES
NW 1/4 NW 1/4 19.0 ACRES
SW 1/4 NW 1/4 38.8 ACRES
SE 1/4 NW 1/4 22.0 ACRES
NE 1/4 SW 1/4 8.5 ACRES
NW 1/4 SW 1/4 12.1 ACRES
SECTION 6
TOWNSHIP 5 SOUTH, RANGE 4 WEST, W.M.
SE 1/4 NE 1/4 34.0 ACRES
NE 1/4 SE 1/4 5.5 ACRES
SECTION 1
TOWNSHIP 5 SOUTH, RANGE 5 WEST, W.M.

Measurement, recording and reporting conditions:

A. Before water use may begin under this permit, the permittee shall install a meter or other suitable measuring device as approved by the Director. The permittee shall maintain the meter or measuring device in good working order.

B. The permittee shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.

C. The Director may require the permittee to keep an maintain a record of the amount (volume) of water use and may require the permittee to report water use on periodic schedule as established by the Director. I addition, the Director may require the permittee t report general water use information, the periods o water use and the place and nature of use of water unde the permit. The Director may provide an opportunity fo the permittee to submit alternative reporting procedure for review and approval.

Diversion screening or fish passage facilities shall be designed, installed, and operated to Oregon Department of Fish & Wildlif specifications. The required screens and by-pass devices are to b inspected by an ODFW representative prior to the diversion of any water.

The permittee shall not construct, operate or maintain any dam o artificial obstruction to fish passage in the channel of the Sout Yamhill River.

STANDARD CONDITIONS

The use shall conform to such reasonable rotation system as may b ordered by the proper state officer.

Failure to comply with any of the provisions of this permit may resul in action including, but not limited to, restrictions on the use, civi penalties, or cancellation of the permit.

This permit is for the beneficial use of water without waste. The wate user is advised that new regulations may require the use of bes practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be i compliance with statewide land-use goals and any local acknowledge land-use plan.

The use of water allowed herein may be made only at times whe sufficient water is available to satisfy all prior rights, includin prior rights for maintaining instream flows.

The Director finds that the proposed use(s) of water described by thi permit, as conditioned, will not impair or be detrimental to the publi interest.

Actual construction work shall begin within one year from permi issuance and shall be completed on or before October 1, 1997. Complet application of the water to the use shall be made on or before Octobe 1, 1998.

Issued October 17, 1995

Water Resources Department
Martha O. Pagel
Director

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AUG 13 1992
WATER RESOURCES DEPT.
SALEM, OREGON

Map for: Tom Schmidt

Location: The N.E. 1/4 & N.W. 1/4 & S.E. 1/4 & S.W. 1/4 of the N.W. 1/4 and also the N.W. 1/4 & N.E. 1/4 & S.E. 1/4 of the S.W. 1/4 and also the N.W. 1/4 of the S.E. 1/4 of Section 6, T.5 S., R.4 W., W.M., and also the S.E. 1/4 of the N.E. 1/4 and the N.E. 1/4 of the S.E. 1/4 of Section 1, T.5 S., R.5 W., W.M., J. A. Cornwall D.L.C No.64, Yamhill County, Oregon.

Tax Lot:

Application No.

Date : 7 July 1992

By : Matt Dunckel & Assoc.
19010 Baker Creek Rd.
McMinnville, Oregon 97128
Phone : 472-7904

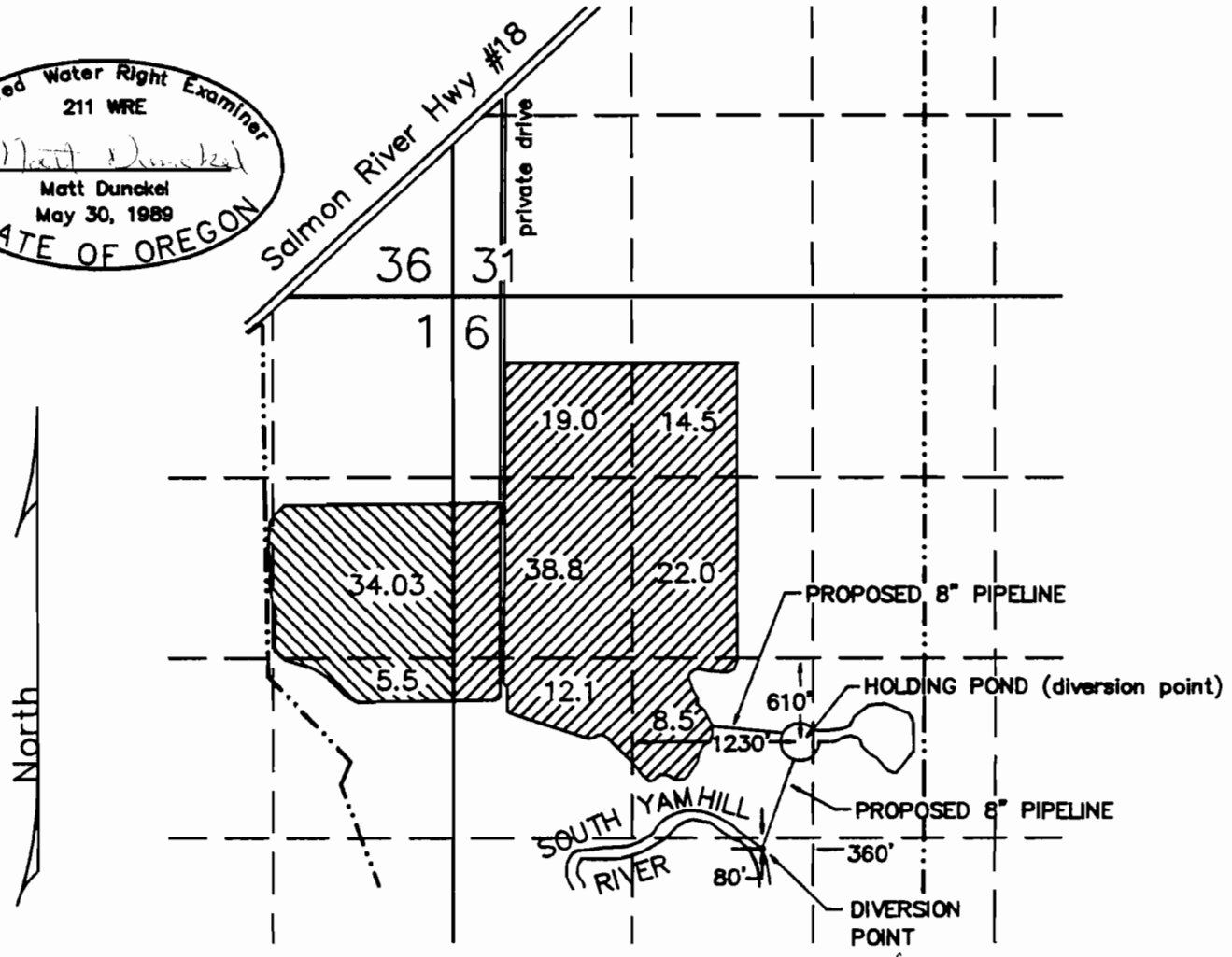
LEGEND:

= Property line

= Section line

= "40" line

Certified Water Right Examiner
211 WRE
Matt Dunckel
Matt Dunckel
May 30, 1989
STATE OF OREGON



Scale : 1" = 1320'

See orig. map for distances in feet for POD from NW corner, Sect. 6

#685

Map for: Tom Schmidt

owner: B. A. McPhillips

Located in W½ Section 6, T5S, R.4W., E½ Section 1, T.5S., R.5W. Yamhill County, oregon

HAS BEEN RECORDED

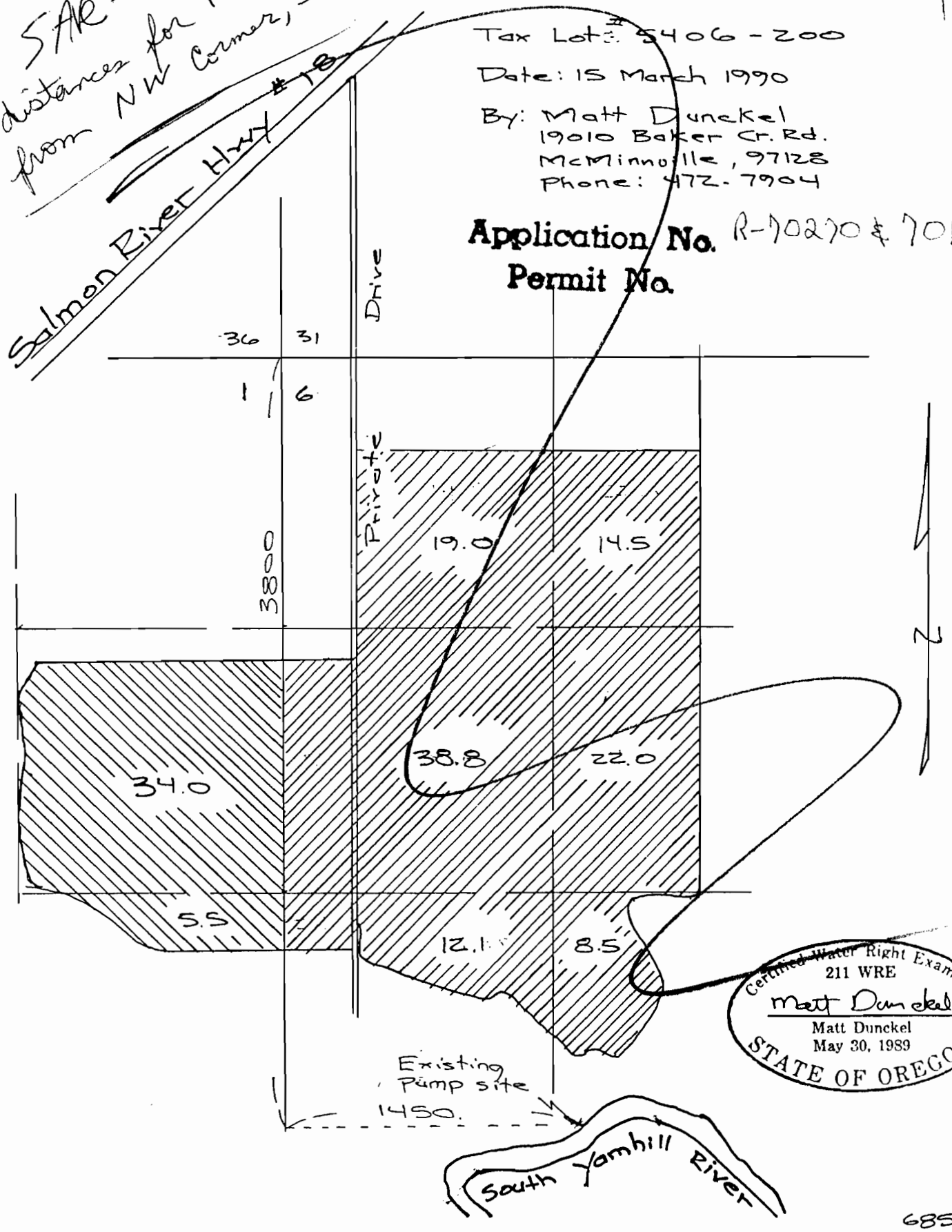
SAR - shows distances for POD from NW Corner, Sect 6

Tax Lot # 5406-200

Date: 15 March 1990

By: Matt Dunckel
19010 Baker Cr. Rd.
McMinnville, 97128
Phone: 472-7904

Application No. R-70270 & 70187
Permit No.



Certified Water Right Examiner
211 WRE
Matt Dunckel
Matt Dunckel
May 30, 1989
STATE OF OREGON

Water Well Search Query Results
and
OWRD Water Well Reports (SCS Nos. 33 through 40)

Well Log Query Results *NEW! GPS points, where available, have been added to the far right of the table. Click link to view on map*

Township: 4 S, Range: 5 W, Sections: 35,36, Type of Log: W

Well Log	T-R-S/ QQ-Q	Tax lot	Street of Well	Owner	Company	Special Standards	Well Type	First Water	Completed Depth	Static Water Level	Yield	Completed Date	Received Date	Bonded Constructor	Startcard	Well Id #	New	Abandon	Deepen	Alteration	Conversion	Domestic	Irrigation	Community	Livestock	Industrial	Injection	Thermal	Dewatering	Piezometer	Latitude/ Longitude
YAMH 119	4 00S-5 00W-35 SW-NW			BOGH, RONALD	BOGH, PATRICIA 10601 SW YOUNGBERG HILL RD MCMINNVILLE OR 97128		W	252.00	302.00	252.0		09/17/1990	09/28/1990	WILCOX, RANDALL L	18197		√					√									
YAMH 120	4 00S-5 00W-35 SW-NW			BOGH, RONALD	BOGH, PATRICIA 10601 SW YOUNGBERG HILL RD MCMINNVILLE OR 97128		W		272.00		3.0	09/20/1990	09/28/1990	WILCOX, RANDALL L	18198		√					√									
YAMH 551	4 00S-5 00W-35 -			BOGH, RON RT 1 BOX 277 MCMINNVILLE OR 97128			W	80.00	290.00	30.0	3.0	07/30/1980	08/06/1980	SHELBURNE, ROBERT BLUE WATER DRILLING CO			√					√									
YAMH 552	4 00S-5 00W-36 -			HANDLEY, E J RT 1 BOX 280 MCMINNVILLE OR 97128			W	59.00	65.00	18.0	31.7	09/14/1970	09/22/1970	JONES, DELBERT S CASEY JONES WELL DRILLING CO			√					√									
YAMH 2880	4 00S-5 00W-35 SW-NW			BOGH, RON 10601 SW YOUNGBERG HILL MCMINNVILLE OR 97128			W		0.00		0.0	08/13/1993	08/17/1993	PAYSINGER, DAVID G	34961		√	√				√									
YAMH 6304	4 00S-5 00W-35 NW-NE			MEKKERS, VINCE			W	0.00	125.00	57.0	30.0	08/04/1987	08/12/1987	WILCOX, JAMES H					√			√									
YAMH 6305	4 00S-5 00W-35 SE-SW			VANHYNING, JOHN			W	73.00	220.00	43.0	15.0	09/30/1975	10/02/1975	WILCOX, JAMES H			√					√									
YAMH 6306	4 00S-5 00W-35 -			MEKKERS, VINCENT			W	210.00	218.00	140.0	10.0	11/13/1972	11/16/1972	SHELBURNE, ROBERT L			√					√									
YAMH 6307	4 00S-5 00W-35 -			HICKS, H C			W	0.00	36.00	5.0		10/16/1960	11/07/1960	SCHUELER, THEODORE W			√					√									
YAMH 6308	4 00S-5 00W-36 -			SCHNIDT, TOM			W	50.00	110.00	15.0	24.0	05/08/1981	05/13/1981	SHELBURNE, ROBERT L			√					√									
YAMH 6310	4 00S-5 00W-36 SE-SE	300	33000 SW SAVAGE RD	FUHRER, JOHN ROUTE 2 SHERIDAN OR 97378			W	89.00	140.00	7.0	25.0	12/23/1978	01/12/1979	WILCOX, JAMES H		117011	√					√									
YAMH 6311	4 00S-5 00W-36 -			SINSEL, G C			W	56.00	60.00	18.0	17.0	08/08/1970	09/01/1970	SHELBURNE, ROBERT L			√					√									
YAMH 6312	4 00S-5 00W-36 -			DUNCAN, IVAN			W	0.00	120.00	8.0	30.0	07/02/1968	08/13/1968	HOFFMAN, HARLAN M			√					√									
YAMH 6313	4 00S-5 00W-36 NE-SW			ARMSTRONG, WM			W	130.00	150.00	22.0	12.0	11/06/1971	11/12/1971	WILCOX, JAMES H			√					√									
YAMH 6314	4 00S-5 00W-36 SW-SW			DEPUY, CORNELIUS			W	0.00	77.00	14.0	20.0	09/26/1968	10/04/1968	WILCOX, JAMES H			√					√									
YAMH 50549	4 00S-5 00W-35 NW-SE			BOGH, TOM RT 1 BOX 277A MCMINNVILLE OR 97128		√	W	40.00	75.00	31.0	32.0	09/10/1970	09/22/1970	JONES, DELBERT S CASEY JONES WELL DRILLING CO			√					√									
YAMH 50699	4 00S-5 00W-35 SE-NW		10601 SW YOUNGBERG HILL RD	BOGH, RON 904 E 10TH MCMINNVILLE OR 97128			W	125.00	330.00	82.0	10.0	06/20/1997	06/24/1997	PAYSINGER, DAVID PAYSINGER CORP-BLUE WATER	85863	13480	√					√									
YAMH 51521	4 00S-5 00W-36 SE-SW	104	8801 SE WALNUT DR	WHITE, JEFF 8801 SE WALNUT DR AMITY OR 97101			W	25.00	480.00	305.0	15.0	12/08/1998	12/28/1998	BLAIR, WILLIAM A DICKERSON WELL DRILLING	115185	35048	√					√									
YAMH 53072	4 00S-5 00W-35 NW-SE	900	11000 SW HANDLEY LANE	BOGH, TOM 11000 SW HANDLEY LANE MCMINNVILLE OR 97128			W	91.00	141.00	52.0	60.0	07/23/2002	08/19/2002	PAYSINGER, DAVID BLUE WATER DRILLING CO INC	151222	59339			√			√									
YAMH 53782	4 00S-5 00W-36 SE-SE	1500	13780 SW MASONVILLE RD	DEPUY, GIL	DEPUY, SHARON 13780 SW MASONVILLE RD MCMINNVILLE OR 97128		W	50.00	63.00	17.0	50.0	06/11/2004	06/23/2004	WILCOX, RANDALL LEWIS WILCOX DRILLING AND PUMP INC	166952	60750	√					√									

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Well Log Query Results *NEW! GPS points, where available, have been added to the far right of the table. Click link to view on map*

Township: 4 S, Range: 5 W, Sections: 35,36, Type of Log: W

Well Log	T-R-S/ QQ-Q	Tax lot	Street of Well	Owner	Company	Special Standards	Well Type	First Water	Completed Depth	Static Water Level	Yield	Completed Date	Received Date	Bonded Constructor	Startcard	Well Id #	New	Abandon	Deepen	Alteration	Conversion	Domestic	Irrigation	Community	Livestock	Industrial	Injection	Thermal	Dewatering	Piezometer	Latitude/ Longitude
YAMH 53849	4.00S-5.00W-35 SW-NE	200	YOUNGBERG HILL RD; 10000 BLOCK	ELLENSON, CLARK 1001 E 18TH MCMINNVILLE OR 97128			W	115.00	181.00	46.0	10.0	08/08/2004	08/17/2004	BLAIR, WILLIAM A DICKERSON WELL DRILLING	148521	56849	√					√										
YAMH 53850	4.00S-5.00W-35 SW-NE	200	YOUNGBERG HILL RD; 10000 BLOCK	ELLENSON, CLARK 1001 E 18TH MCMINNVILLE OR 97128			W	34.00	163.00	58.0	60.0	08/11/2004	08/17/2004	BLAIR, WILLIAM A DICKERSON WELL DRILLING	161303	56809	√					√										
YAMH 53849 Version 2	4.00S-5.00W-35 NW-	200	YOUNGBERG HILL RD; 10000 BLOCK	ELLENSON, CLARK 1001 E 18TH MCMINNVILLE OR 97128			W	115.00	181.00	46.0		08/08/2004	08/17/2004	BLAIR, WILLIAM A DICKERSON WELL DRILLING	148521	56849	√					√										
YAMH 54715	4.00S-5.00W-35 -	500	YOUNGBERG HILL RD, MCMINNVILLE; 10000 BLOCK	CHRISTIAN, JIM 7125 SW HUNT CLUB RD PORTLAND OR 97223			W	26.00	238.00	10.0	4.5	02/06/2007	02/23/2007	BLAIR, WILLIAM A DICKERSON WELL DRILLING	1000602	85524	√					√										45.18310000, -123.27421000
YAMH 55009	4.00S-5.00W-35 SE-NW	500	10000 BLOCK YOUNGBERG HILL RD	CHRISTIAN, JIM 10000 BLOCK YOUNGBERG HILL RD MCMINNVILLE OR 97128			W	41.00	255.00	35.0	11.0	07/26/2007	08/16/2007	BLAIR, WILLIAM A DICKERSON WELL DRILLING	1001692	92102	√					√										
YAMH 55010	4.00S-5.00W-35 SE-NW	500	10000 BLOCK YOUNGBERG HILL RD	CHRISTIAN, JIM 10000 BLOCK YOUNGBERG HILL RD MCMINNVILLE OR 97128			W	24.00	0.00		0.3	08/01/2007	08/16/2007	BLAIR, WILLIAM A DICKERSON WELL DRILLING	1001725	92102	√	√				√										
YAMH 55087	4.00S-5.00W-35 NW-SE	900	11000 SW HANDLEY LANE	BOGH, TOM 11000 SW HANDLEY LANE MCMINNVILLE OR 97128			W	13.00	259.00	51.0	1.0	11/20/2007	12/11/2007	PAYSINGER, DAVID BLUE WATER DRILLING CO INC	1002653	92909	√					√										45.17972222, -123.26583333
YAMH 55251	4.00S-5.00W-35 NW-SE	900	11000 SW HANDLEY LANE	BOGH, TOM 11000 SW HANDLEY LANE MCMINNVILLE OR 97128			W	206.00	420.00	104.0	0.5	07/25/2008	08/14/2008	PAYSINGER, DAVID BLUE WATER DRILLING CO INC	1004256	96534	√					√										
YAMH 55754	4.00S-5.00W-35 SW-NE	200	10075 YOUNBERG HILL RD	ELLINGSON, CLARKE 10075 YOUNBERG HILL RD MCMINNVILLE OR 97128			W	93.00	172.00	49.0	4.2	10/14/2010	11/01/2010	BLAIR, WILLIAM A DICKERSON WELL DRILLING	1011714	104639	√					√										
YAMH 56692 Exempt Use Map	4.00S-5.00W-35 SE-SE	1300	14000 SW MASONVILLE RD	SMITH, MRS FAY 14000 SW MASONVILLE RD MCMINNVILLE OR 97128			W	58.00	75.00	10.0	30.0	12/23/2013	12/30/2013	WILCOX, RANDALL LEWIS WILCOX DRILLING & PUMP CO INC	210501	108409	√					√										

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Well Log Query Results *NEW! GPS points, where available, have been added to the far right of the table. Click link to view on map*

Township: 4 S, Range: 4 W, Sections: 31, Type of Log: W

Well Log	T-R-S/ QQ-Q	Tax lot	Street of Well	Owner	Company	Special Standards	Well Type	First Water	Completed Depth	Static Water Level	Yield	Completed Date	Received Date	Bonded Constructor	Starting card	Well Id #	New	Abandon	Deepen	Alteration	Conversion	Domestic	Irrigation	Community	Livestock	Industrial	Injection	Thermal	Dewatering	Piezometer	Latitude/ Longitude
YAMH 507	4 00S-4 00W-31 NW-SE				WEATHERFORD, JIM (C/O); CHURCH OF CHRIST 335 E 12TH MCMINNVILLE OR 97128		W	60.00	76.00	9.0	10.0	06/08/1971	06/10/1971	WILCOX, JAMES H WILCOX DRILLING & PUMP CO			√					√									
YAMH 5918	4 00S-4 00W-31 SE-NW			WRIGHT, RICHARD			W	0.00	60.00	8.0	15.0	03/21/1964	03/27/1964	SHELBURNE, ROBERT L			√					√									
YAMH 5919	4 00S-4 00W-31 SE-SE		9820 SW BAYOU DR	WASSON, ROBERT	WASSON, MRS ROBERT 9820 SW BAYOU DR MCMINNVILLE OR 97128		W	0.00	0.00	44.0		05/09/1989	05/17/1989	WILCOX, RANDALL LEWIS	9321			√				√									
YAMH 5920	4 00S-4 00W-31 SE-SE		BAYOU CT, MCMINNVILLE		DAVE GLOCAR CUSTOM HOME 750 FRONT ST NE SALEM OR		W	110.00	123.00	35.0	80.0	08/23/1988	09/18/1988	PECK, THOMAS R	7294		√					√									
YAMH 5921	4 00S-4 00W-31 -			KLUG, KENN			W	27.00	48.00	5.0	6.0	01/31/1984	02/02/1984	SHELBURNE, ROBERT L			√					√									
YAMH 5922	4 00S-4 00W-31 SW-NW			WHITLOW, DON			W	44.00	0.00	0.0		05/21/1980	06/13/1980	BEACH, DAVID			√	√				√									
YAMH 5923	4 00S-4 00W-31 SW-NW			WHITLOW, DON			W	45.00	58.00	14.0	3.0	05/27/1980	06/13/1980	BEACH, DAVID			√					√									
YAMH 5924	4 00S-4 00W-31 -			SULLIVIAN, DON			W	62.00	65.00	23.0	6.0	11/05/1974	11/20/1974	KINNEY, CLARENCE			√					√									
YAMH 5925	4 00S-4 00W-31 -			SCHMIDT, EUGENE J			W	0.00	95.00	15.0	40.0	07/21/1965	09/09/1965	MEEKER, JOHN H			√					√									
YAMH 5926	4 00S-4 00W-31 -SW			RANE, DR RON			W	0.00	63.00	8.0	10.0	02/18/1969	03/10/1969	WESTON, R C			√					√									
YAMH 5927	4 00S-4 00W-31 SW-NW			ELSBREE, JACK			W	36.00	80.00	12.0	7.0	11/09/1973	11/13/1973	WILCOX, JAMES H			√					√									
YAMH 5928	4 00S-4 00W-31 -NW			HESS, E J			W	55.00	84.00	0.0	15.0	09/26/1955	09/26/1955	WILCOX, JAMES H			√					√									
YAMH 5929	4 00S-4 00W-31 SE-NW			EASH, AMOS			W	0.00	75.00	20.0	20.0	04/07/1961	05/19/1961	WILCOX, JAMES H			√					√									
YAMH 54876	4 00S-4 00W-31 NE-SW	801	DURHAM LANE, MCMINNVILLE		YAMHILL COUNTY HISTORICAL SOCIETY PO BOX 484 LAFAYETTE OR 97127		W	55.00	60.00	17.0	15.0	11/28/2006	12/27/2006	PAYSINGER, DAVID BLUE WATER DRILLING CO INC	1000322	88428	√					√									

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Well Log Query Results *NEW! GPS points, where available, have been added to the far right of the table. Click link to view on map*

Township: 5 S, Range: 5 W, Sections: 1,2,11,12, Type of Log: W

Well Log	T-R-S/ QQ-Q	Tax lot	Street of Well	Owner	Company	Special Standards	Well Type	First Water	Completed Depth	Static Water Level	Yield	Completed Date	Received Date	Bonded Constructor	Startcard	Well Id #	New	Abandon	Deepen	Alteration	Conversion	Domestic	Irrigation	Community	Livestock	Industrial	Injection	Thermal	Dewatering	Piezometer	Latitude/ Longitude
YAMH 624	5.00S-5.00W-2 -			BERNARDS, MARRIN RT 1 BX 276 MCMINNVILLE OR 97128			W	80.00	140.00	15.0	30.0	02/26/1975	03/17/1975	SHELBURNE, ROBERT BLUE WATER DRILLING CO.			√					√									
YAMH 631	5.00S-5.00W-11 -			BROSMLE, WALLY 2430 N EVANS MCMINNVILLE OR 97128			W	78.00	85.00	32.0	8.0	03/31/1976	04/20/1976	KINNEY, CLARENCE A CORVALLIS DRILLING CO. INC.			√					√									
YAMH 711	5.00S-5.00W-12 NE-SE			RICE, MR STEVE PO BOX 1075 MCMINNVILLE OR 97128			W	53.00	69.00	22.0	30.0	05/02/1991	05/03/1991	WILCOX, RANDALL L	30811		√					√									
YAMH 3138	5.00S-5.00W-11 NW-SE			ROBUCK, MR LESTER B	ROBUCK, HARRIETT; ROBUCK, MRS LESTER 16401 SW GOPHER VALLEY RD SHERIDAN OR 97378		W		86.00	20.0	100.0	07/15/1994	07/25/1994	WILCOX, JAMES GRANT	52929		√					√									
YAMH 3887	5.00S-5.00W-11 SW-NW	5511		LARSON, RON	LARSON, RHONDA 14815 SW DELASHMUTT LANE MCMINNVILLE OR 97128		W	84.00	100.00	18.0	7.0	05/18/1995	05/25/1995	PAYSINGER, DAVID	66521		√					√									
YAMH 7228	5.00S-5.00W-1 SW-SW			BRESAMLE, MR WALTER	BRESAMLE, MRS		W	82.00	217.00	48.0	13.0	12/20/1989	12/26/1989	WILCOX, JAMES GRANT	16453		√					√									
YAMH 7229	5.00S-5.00W-1 -	200	13469 SW HWY 18		RIVER BEND LANDFILL CO. PO BOX 509 MCMINNVILLE OR 97128		W	0.00	0.00	40.0		08/04/1989	09/08/1989	SCHNEIDER, STEPHEN J	7910			√													
YAMH 7230	5.00S-5.00W-1 -	200	13469 SW HWY 18		RIVER BEND LANDFILL CO. PO BOX 509 MCMINNVILLE OR 97128		W	0.00	0.00	0.0		09/28/1989	12/08/1989	SCHNEIDER, STEPHEN J	7919			√													
YAMH 7286	5.00S-5.00W-11 SW-NW	551120100		BERNARDS, JOHN			W	50.00	139.00	20.0	99.0	01/20/1987	01/22/1987	SHELBURNE, ROBERT L			√					√									
YAMH 7287	5.00S-5.00W-11 NW-NW			HAMILTON, BOB			W	105.00	120.00	8.0	4.0	04/12/1984	04/18/1984	SHELBURNE, ROBERT L			√					√									
YAMH 7288	5.00S-5.00W-11 -			BROSMLE, WALLY			W	94.00	118.00	18.0	25.0	01/20/1978	02/01/1978	KINNEY, CLARENCE					√			√									
YAMH 7289	5.00S-5.00W-11 -			WILLIAMS, BILL			W	50.00	143.00	7.0	9.0	12/28/1971	01/04/1972	SHELBURNE, ROBERT L			√					√									
YAMH 7290	5.00S-5.00W-11 NE-SW			MUNRO, DOUG			W	35.00	58.00	10.0	30.0	06/12/1975	06/20/1975	WILCOX, JAMES H			√					√									
YAMH 7291	5.00S-5.00W-11 NW-SW			ANGLIN, JOHN A			W	90.00	120.00	6.0	50.0	03/29/1975	04/14/1975	WILCOX, JAMES H			√					√									
YAMH 7292	5.00S-5.00W-11 -			LAMBERT, CHESTER W			W	0.00	75.00	17.0	25.0	09/14/1964	10/01/1984	WILCOX, JAMES H			√					√									
YAMH 7293	5.00S-5.00W-11 SE-NE	551160000		TURLEY, RON			W	0.00	193.00	30.0	6.0	06/08/1983	06/15/1983	WILCOX, JAMES H					√			√									
YAMH 7294	5.00S-5.00W-12 NE-NE			BUTLER, MARY			W	54.00	63.00	23.0	20.0	06/15/1979	06/25/1979	WILCOX, JAMES H			√					√									
YAMH 7295	5.00S-5.00W-12 -				YAMHILL COUNTY		W	48.00	50.00	0.0		10/17/1973	01/18/1974	ROBINSON, GEORGE H			√														
YAMH 7296	5.00S-5.00W-12 -				YAMHILL COUNTY		W	47.00	65.00	25.5	30.0	10/17/1975	01/18/1974	ROBINSON, GEORGE H			√									√					
YAMH 7298	5.00S-5.00W-12 -				YAMHILL COUNTY		W	0.00	8.00	0.0		10/17/1973	01/18/1974	ROBINSON, GEORGE H			√														

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Well Log Query Results *NEW! GPS points, where available, have been added to the far right of the table. Click link to view on map*

Township: 5 S, Range: 5 W, Sections: 1,2,11,12, Type of Log: W

Well Log	T-R-S/ QQ-Q	Tax lot	Street of Well	Owner	Company	Special Standards	Well Type	First Water	Completed Depth	Static Water Level	Yield	Completed Date	Received Date	Bonded Constructor	Startcard	Well Id #	New	Abandon	Deepen	Alteration	Conversion	Domestic	Irrigation	Community	Livestock	Industrial	Injection	Thermal	Dewatering	Piezometer	Latitude/ Longitude
YAMH 7299	5.00S-5.00W-12 -				YAMHILL COUNTY		W	0.00	14.00	0.0		10/18/1973	01/18/1974	ROBINSON, GEORGE H						√											
YAMH 7300	5.00S-5.00W-12 -				YAMHILL COUNTY		W	38.00	49.00	0.0		10/19/1975	01/18/1974	ROBINSON, GEORGE H			√														
YAMH 7301	5.00S-5.00W-12 -				YAMHILL COUNTY		W	0.00	19.00	0.0		10/19/1973	01/18/1974				√														
YAMH 7302	5.00S-5.00W-12 -				YAMHILL COUNTY		W	0.00	8.00	0.0		10/23/1973	01/18/1974	ROBINSON, GEORGE H			√														
YAMH 7303	5.00S-5.00W-12 -			MASSEY, A G			W	0.00	55.00	25.0	10.0	09/12/1961	10/06/1961	SCHUELER, THEODORE W			√					√									
YAMH 7318	5.00S-5.00W-1 -			BERNARDS, MARVIN			W	40.00	100.00	20.0	35.0	04/26/1981	05/13/1981	SHELBURNE, ROBERT L			√					√									
YAMH 7319	5.00S-5.00W-1 -				RIVER BEND LANDFILL CO.		W	45.00	97.00	25.0	30.0	10/09/1981	10/13/1981	SHELBURNE, ROBERT L			√					√									
YAMH 7321	5.00S-5.00W-2 SW-NW	255213000		SMITH, ERNIE			W	164.00	200.00	162.0	16.0	08/13/1981	09/14/1981	WILCOX, JAMES H			√					√									
YAMH 7322	5.00S-5.00W-2 -			BERNOLD, MARVIN		√	W	80.00	95.00	35.0	30.0	04/30/1981	05/12/1981	SHELBURNE, ROBERT L			√					√									
YAMH 7323	5.00S-5.00W-2 -			SAXBERT, DENNIS			W	54.00	95.00	19.0	15.0	04/27/1976	05/17/1976	KINNEY, CLARENCE			√					√									
YAMH 7397	5.00S-5.00W-12 -				YAMHILL COUNTY		W	0.00	10.00	0.0		10/17/1973	01/18/1974	ROBINSON, GEORGE H			√														
YAMH 50144	5.00S-5.00W-11 NW-NW	5511	14555 SW MCCABE CHAPEL	BERNARDS, JOHN 14555 SW MCCABE CHAPEL MCMINNVILLE OR 97128			W				0.0	05/16/1996	05/23/1996	PAYSINGER, DAVID PAYSINGER CORP-BLUE WATER	85819		√	√				√										45.15666666, -123.27916666
YAMH 50145	5.00S-5.00W-11 NW-NW	5511	14555 SW MCCABE CHAPEL	BERNARDS, JOHN 14555 SW MCCABE CHAPEL MCMINNVILLE OR 97128			W	95.00	120.00	22.0	98.0	05/17/1996	05/23/1996	PAYSINGER, DAVID PAYSINGER CORP-BLUE WATER	85823	3215	√					√										45.15555555, -123.27916666
YAMH 51091	5.00S-5.00W-12 SE-NE	400	12370 SW RIVER BEND RD, WHITESON		COUNTY OF YAMHILL 535 E FIFTH ST MCMINNVILLE OR 97128		W		70.00			07/14/1998	09/02/1998	MCINNIS, GREG GEO-TECH EXPLORATIONS	112283			√				√										
YAMH 7304	5.00S-5.00W-12 -			LAWSON, VERN K OR		√	W		60.00	10.0	8.0	04/25/1937	01/15/1999	UNKNOWN, UNKNOWN								√			√						
YAMH 7305	5.00S-5.00W-12 -			GLOVER, A OR		√	W		60.00	10.0	8.0	04/23/1937	01/15/1999	UNKNOWN, UNKNOWN								√									
YAMH 7320	5.00S-5.00W-2 -		RT 3 BOX 52	SCHMIDT, EUGENE RT 3 BOX 52 MCMINNVILLE OR 97128		√	W	160.00	160.00	23.0	11.0	11/07/1985	11/13/1985	SHELBURNE, ROBERT L BLUE WATER DRILLING			√					√										
YAMH 53377	5.00S-5.00W-12 SE-SE	1200	15930 SW BRIEDWELL RD	BOURASSA, RICHARD	BOURASSA, EILEEN PO BOX 1154 MCMINNVILLE OR 97128		W	51.00	79.00	19.0	38.0	05/27/2003	06/16/2003	PAYSINGER, DAVID BLUE WATER DRILLING CO INC	151272	60272	√					√										
YAMH 54030	5.00S-5.00W-11 SE-NW	200	15000 SW OLDSVILLE RD	BERNARDS, MARY BETH 13801 MASONVILLE RD MCMINNVILLE OR 97128			W	18.00	62.00	8.0	60.0	02/08/2005	02/25/2005	PAYSINGER, DAVID BLUE WATER DRILLING CO INC	170100	72050	√					√										
YAMH 54035	5.00S-5.00W-1 NW-NW	701	13801 SW MASONVILLE RD	BERNARDS, JOHN 13801 SW MASONVILLE RD MCMINNVILLE OR 97128			W	32.00	69.00	4.0	100.0	02/14/2005	03/08/2005	PAYSINGER, DAVID BLUE WATER DRILLING CO INC	170101	76201	√					√										

1 2 3

Download Data
Return to Well Log Query

Well Log Query Results *NEW! GPS points, where available, have been added to the far right of the table. Click link to view on map*

Township: 5 S, Range: 5 W, Sections: 1,2,11,12, Type of Log: W

Well Log	T-R-S/ QQ-Q	Tax lot	Street of Well	Owner	Company	Special Standards	Well Type	First Water	Completed Depth	Static Water Level	Yield	Completed Date	Received Date	Bonded Constructor	Startcard	Well Id #	New	Abandon	Deepen	Alteration	Conversion	Domestic	Irrigation	Community	Livestock	Industrial	Injection	Thermal	Dewatering	Piezometer	Latitude/ Longitude
POLK 52970	5.00S-5.00W-12 NE-SE	1602	15480 SW BRIEDWELL RD	UPSHAW, DAN 15480 SW BRIEDWELL RD MCMINNVILLE OR 97128			W	26.00	106.00	38.0	21.0	07/07/2009	07/21/2009	BLAIR, WILLIAM A DICKERSON WELL DRILLING	1007306	98364	√					√									
YAMH 56263 Exempt Use Map	5.00S-5.00W-11 SE-NW	900	15000 SW DELASHMUTT LANE	GREENWOOD, ROBERT 15000 SW DELASHMUTT LANE MCMINNVILLE OR 97128			W	92.00	125.00	7.0	30.0	05/10/2012	05/16/2012	WILCOX, RANDALL LEWIS WILCOX DRILLING & PUMP CO INC	208631	106618	√					√									
YAMH 56491	5.00S-5.00W-11 NW-NW	200	14555 SW MCCABE CHAPEL RD	BERNARDS, JOHN 14295 SW MASONVILLE RD MCMINNVILLE OR 97128			W	10.00	82.00	12.0	10.0	03/11/2013	03/29/2013	PAYSINGER, DAVID BLUE WATER DRILLING CO INC	1019206	109564	√					√									

1 2 3

Download Data
Return to Well Log Query

Well Log Query Results *NEW! GPS points, where available, have been added to the far right of the table. Click link to view on map*

Township: 5 S, Range: 4 W, Sections: 6, Type of Log: W

Well Log	T-R-S/ QQ-Q	Tax lot	Street of Well	Owner	Company	Special Standards	Well Type	First Water	Completed Depth	Static Water Level	Yield	Completed Date	Received Date	Bonded Constructor	Startcard	Well Id #	New	Abandon	Deepen	Alteration	Conversion	Domestic	Irrigation	Community	Livestock	Industrial	Injection	Thermal	Dewatering	Piezometer	Latitude/ Longitude
YAMH 6864	5.00S-4.00W-6 -			KAVER, RAY			W	95.00	120.00	25.0	30.0	10/11/1979	10/28/1979	SHELBURNE, ROBERT L			√					√									
YAMH 6865	5.00S-4.00W-6 NW-SW			MC PHILLIPS, B A			W	0.00	75.00	31.0	20.0	12/02/1966	12/11/1966	WILCOX, JAMES H			√					√									

Download Data
Return to Well Log Query

YAMH 53782

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

WELL I.D. # L 60750
START CARD # 166952

(1) LAND OWNER Well Number
Name Gil + Sharon Dopuy
Address 13780 S.W. Masonville Rd.
City Mc Minnville State Or. Zip 97128

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 63 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
14"	0	62	Bentonite	0	35	36

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☒ Other Bentonite (Poured Slowly)
Backfill placed from ft. to ft. Material
Gravel placed from 35 ft. to 62 ft. Size of gravel 3/8" Pea

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	+1	62	.125	☒	☐	☒	☐
Liner:	None							

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☒ Perforations Method Oxy. Act. Torch
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
42	62		66	1/4 x 1 1/2		☒	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
50	Air Lift	62	5 hr.

Temperature of water 54 Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Yamhill Latitude Longitude
Township 4S N or S Range 5W E or W WM.
Section 35 SE 1/4 SE. 1/4
Tax Lot 1500 Lot Block Subdivision
Street Address of Well (or nearest address) Same

(10) STATIC WATER LEVEL:
17 ft. below land surface. Date 6/11/04
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found 50'

From	To	Estimated Flow Rate	SWL
50	62	50	17

(12) WELL LOG:
Ground Elevation Appox. 150'

Material	From	To	SWL
Topsoil	0	3	
Brown Clay	3	16	
Blue Clay Tight - Sticky	16	42	
Silty Blue Clay w/ Brown Streaks	42	50	
Small + Med. Brown + Blue Gravel	50	62	17

RECEIVED
JUN 23 2004
WATER RESOURCES DEPT
SALEM, OREGON

Date started June 10 2004 Completed June 11 2004

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number
Signed Not Appl. Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 745
Signed Randall R. Wilson Date 6/11/04

ORIGINAL – WATER RESOURCES DEPARTMENT FIRST COPY – CONSTRUCTOR SECOND COPY – CUSTOMER

Yamh 56692

YAMH 56692

STATE OF OREGON
WATER SUPPLY WELL REPORT
(ORS 537.765 & OAR 690-205-0210)
Instructions for completing this report are on the last page of this form.

WELL LABEL # L L 108409
START CARD # 210501
ORIGINAL LOG #

(1) LANDOWNER Owner Well I.D.
First Name Mrs Fay Last Name Smith
Company
Address 14000 SW Masonville Rd.
City McMinnville State OR Zip 97128

(2) TYPE OF WORK ☒ New ☐ Conversion ☐ Deepening
☐ Alteration (complete Sections 2a & 10) ☐ Abandonment (complete Section 5a)

(2a) PRE-ALTERATION: Well Depth _____ ft.
Seal Material
Casing Type: ☐ Steel ☐ Plastic ☐ Other
Casing Gauge Casing Diameter

(3) DRILL METHOD ☒ Rotary Air ☐ Rotary Mud ☐ Auger
☐ Cable ☐ Cable Mud ☐ Reverse Rotary ☐ Other

(4) PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Community
☐ Industrial/Commercial ☐ Livestock ☐ Dewatering ☐ Injection
☐ Thermal ☐ Other

(5) BORE HOLE CONSTRUCTION
Depth of Completed Well 75 ft. Special Standard: ☐ Yes (attach copy)

BORE HOLE Dia	From	To	SEAL Material	From	To	Amount	Sacks/lbs
12	0	30	Bentonite	0	30	39	sacks
12	30	48	Bentonite	30	48	1/4	yard
12	48	54	Cement	48	54	5	sacks

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☒ Other Cement pumped, Bentonite poured on top
Backfill placed from ft. to ft. Material
Filter pack from 30 ft. to 48 ft. Material 1/8 pea gravel.

(5a) ABANDONMENT USING UNHYDRATED BENTONITE:
Calculated Amount Proposed to be Used: _____ sacks/lbs
Actual Amount Used: _____ sacks/lbs

(6) CASING/LINER

Csng	Linr	Dia	+	From	To	Gauge	Steel	Plastic	Welded	Thrd
X		6	+	2	54	.250	X		X	
	X	4	-	3	75	160 PSI		X	X	

Shoe ☐ Inside ☒ Outside ☐ Other Location of shoe(s)
Temporary casing ☐ Yes Diameter From To

(7) PERFORATIONS/SCREENS Electric drill
Perforations Method
Screens Type 5/8" gauge wire wrapped Material

Perf	Scrn	Csng	Linr	Dia	From	To	Screen/slot width	Slot length	# of slots	Tele/pipe size
X			X	4"	55	75	5/8"		160	
		X			35	54	1/4" x 1/2"		54	

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
30		75	4 hours

Temperature 53 °F Lab analysis ☐ Yes By
Water quality concerns? ☐ Yes (describe below) TDS ppm

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)
County Yamhill Twp 4S N or S Range 5W E or W W.M.
Sec 35 SE 1/4 of the SE 1/4 Tax Lot 4535-01300
Tax Map Number Lot
Lat ° ' " or DMS or DD
Long ° ' " or DMS or DD
Street Address of Well (or nearest address) 14000 SW Masonville Rd. McMinnville, OR 97128

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL (ft)
Existing Well/Pre-Alteration				
Completed Well	Dec 23, 2013		-	10 ft

Flowing Artesian? ☐ Yes Dry Hole? ☐ Yes

WATER BEARING ZONES Depth water was first found 54 ft

SWL Date	From	To	Est Flow	SWL (psi)	+	SWL (ft)
Dec 23, 2013	54	73	300 gpm		-	10 ft.

(11) WELL LOG Ground Elevation

Material	From	To
Topsoil	0	3
Brownish yellow clay	3	19
Blue clay	19	43
Blue sandstone	43	57
Unstable blue sandstone water bearing	57	75

RECEIVED BY OWRD JAN 10 2014 SALEM, OR
RECEIVED BY OWRD DEC 30 2013 SALEM, OR

Date Started Dec 19 2013 Completed Dec 23, 2013

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number Date
Signed

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

License Number 795 Date Dec 24, 2013
Signed
Contact Info. (optional) W. Lewis Drilling Inc & Pump Co. P.O. Box 569 McMinnville OR 97128

ORIGINAL – WATER RESOURCES DEPARTMENT ONE COPY FOR CONSTRUCTOR ONE COPY FOR CUSTOMER
SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

YAMH 54035

State of Oregon
WATER WELL REPORT (as required by ORS 537.765) Page 1 of 1

State Well ID L76201
Start Card # 170101

(1) OWNER: Well No. 2348
Name JOHN BERNARDS
Address 13801 SW MASONVILLE RD
City MCMINNVILLE St OR Zip 97128

(2) TYPE OF WORK: NEW WELL

(3) DRILL METHOD: CABLE

(4) PROPOSED USE: DOMESTIC

(5) BORE HOLE CONSTRUCTION:
Special Construction Approval NO Depth of Compl. Well 69 ft
Explosives used NO Type _____ Amount _____

HOLE Diam.	From	To	Material	SEAL From	To	Amount
10	0	69	BENTONITE CHIP	0	21	24 SAX

Seal placement method POURED/HYDRATED
Backfill: from ___ ft to ___ ft Material
Gravel: from 21 ft to 69 ft Size 3/8" PEA

(6) CASING/LINER:

	Diam.	From	To	Gauge	Material	Connection
Casing	6	+2	69	.25	STEEL	WELDED
Liner						

Final Location of shoe(s) _____

(7) PERFORATIONS/SCREENS:
[X] Perf. Method TORCH
[_] Screens Type _____ Material _____

From	To	Slot Size	Number	Diam.	Tele/pipe Size	Casing/liner
59	65	.2X8"	40			CASING

(8) WELL TESTS: Minimum testing time is 1 hour
Test type BAILER

Yield GPM	Draw-down	Drill stem at	Time
28	20		1 hr.
100 AIR		68	2

Temperature of water 54F Depth Artesian Flow Found ____
Was water analysis done? YES By whom BLUE
Reason for water not suitable for use _____
Depth of strata ___

(9) LOCATION OF WELL by legal description:
County YAMHILL Lat. ° ' " Long. ° ' "
Township 5 S Range 5 W WM.
Section 1 NW 1/4 NW 1/4
Tax Lot 701 Lot Block Subdivision
Street Address of Well (or nearest Address)
13801 SW MASONVILLE RD MCMINNVILLE, OR

(10) STATIC WATER LEVEL:
4 ft. below land surface. Date 02/14/05
Artesian pressure _____ lb per square in. Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found 32

From	To	Est Flow Rate	SWL
32	65	80-100	4

(12) WELL LOG:
Ground elevation ___

Material	From	To	SWL
TOP SOIL	0	5	
CLAY, BROWN	5	15	
CLAY, BLUE	15	32	
SAND, COARSE W/GRAVEL, FINE W/CLAY,BROWN	32	54	4
SAND, COARSE W/GRAVEL, FINE W/CLAY, BLUE	54	59	4
CLAY, BLUE W/SOME SAND	59	60	4
SAND, COARSE W/GRAVEL, FINE W/CLAY, BLUE	60	65	4
CLAY, BLUE	65	69	

RECEIVED
MAR 08 2005
WATER RESOURCES DEPT
SALEM, OREGON

DAVE PAYSINGER, BLUE WATER DRILLING CO.
(503) 868-7878

Date started 02/09/05 Completed 02/14/05

(unbonded) Water Well Constructor Certification: I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to my best knowledge and belief.
WWC Number ____
Signed _____ Date _____

(bonded) Water Well Constructor Certification: I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1438
Signed [signature] Date 02/14/05

ORIGINAL & FIRST COPY - WATER RESOURCES DEPTARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 10/91

WATER WELL REPORT
STATE OF OREGON

RECEIVED
SEP 14 1981
WATER RESOURCES DEPT
SALEM, OREGON

YAMH
7321C

State Well No. 5s/5w-2bc

State Permit No. .....

(1) OWNER:

Name Ernie Smith
Address Rt. 1 Box 262
City McMinnville Ore. State

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary Air ☒ Driven ☐
Rotary Mud ☐ Dug ☐
Cable ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐
Thermal: Withdrawal ☐ Reinjection ☐

(5) CASING INSTALLED:

Steel ☒ Plastic ☐
Threaded ☐ Welded ☐
6" Diam. from 0 ft. to 19 ft. Gauge .25
" Diam. from ft. to ft. Gauge

LINER INSTALLED:
4" Diam. from 10 ft. to 200 ft. Gauge 160psi

(6) PERFORATIONS:

Perforated? ☒ Yes ☐ No
Type of perforator used Drill
Size of perforations 9/16 in. by Circular in.
120 perforations from 160 ft. to 200 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot Size Set from ft. to ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
Air test 18 gal./min. with drill stem at 200 ft. 1½ hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water 51 Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Special standards: Yes ☐ No ☒
Well seal—Material used Cement Grout
Well sealed from land surface to 19 ft.
Diameter of well bore to bottom of seal 10½ in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 6 sacks
How was cement grout placed? Hole was clean and dry, grout introduced from bottom up.

Was pump installed? Yes Type Sub HP 1½ Depth 195 ft.
Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Yamhill Driller's well number
SW ¼ NW ¼ Section 2 T. 5S R. 5W W.M.
Tax Lot # 255-2-1-3 Lot Blk Subdivision
Address at well location: Rt. 1 Box 262

(11) WATER LEVEL: Completed well.

Depth at which water was first found 164 4 GPM ft.
Static level 162 ft. below land surface. Date 9/1/81
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6
Depth drilled 200 ft. Depth of completed well 200 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Topsoil	0	1	
Red clay w/small boulders.	1	8	
Weathered red and gray basalt.	8	13	
Coarse grained gray basalt. w/fractured layers.	13	200	

Work started 8/7 1981 Completed 8/13 1981
Date well drilling machine moved off of well 8/13 1981

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] James D. Wilcox (Drilling Machine Operator) Date 9/1, 1981
Drilling Machine Operator's License No. 1127

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Wilcox Drilling & Pump Co. (Person, firm or corporation) (Type or print)
Address P. O. Box 569, McMinnville, Or. 97128
[Signed] James H. Wilcox (Water Well Contractor)
Contractor's License No. 428 Date Aug. 31, 1981

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

SP*12658-690

YAMH 54030

State of Oregon
WATER WELL REPORT (as required by ORS 537.765) Page 1 of 1

State Well ID L72050
Start Card # 170100

(1) OWNER: Well No. 2347
Name MARY BETH BERNARDS
Address 13801 MASONVILLE RD
City MCMINNVILLE St OR Zip 97128

(2) TYPE OF WORK: NEW WELL

(3) DRILL METHOD: ROTARY AIR

(4) PROPOSED USE: DOMESTIC

(5) BORE HOLE CONSTRUCTION:
Special Construction Approval NO Depth of Compl. Well 62 ft
Explosives used NO Type _____ Amount _____

Diam.	HOLE From	HOLE To	Material	SEAL From	SEAL To	Amount
10	0	62	BENTONITE CHIP	0	22	18 SAX
6	62	120				

Seal placement method POURED/HYDRATED
Backfill: from 62 ft to 120 ft Material CAVING SLOUGH
Gravel: from 22 ft to 62 ft Size 3/8" PEA

(6) CASING/LINER:

	Diam.	From	To	Gauge	Material	Connection
Casing	6	+1.5	62	.25	STEEL	WELDED
Liner						

Final Location of shoe(s) _____

(7) PERFORATIONS/SCREENS:
[X] Perf. Method TORCH
[_] Screens Type _____ Material _____

From	To	Slot Size	Number	Diam.	Tele/pipe Size	Casing/liner
54	61	.2X8"	40			CASING

(8) WELL TESTS: Minimum testing time is 1 hour
Test type AIR

Yield GPM	Draw-down	Drill stem at	Time
60		61	1 hr.
60 AIR		61	5

Temperature of water 54F Depth Artesian Flow Found ____
Was water analysis done? YES By whom BLUE
Reason for water not suitable for use _____
Depth of strata ___

(9) LOCATION OF WELL by legal description:
County YAMHILL Lat. ° ' " Long. ° ' "
Township 5 S Range 5 W WM.
Section 11 SE 1/4 NW 1/4
Tax Lot 200 Lot Block Subdivision
Street Address of Well (or nearest Address)
15000 SW OLDSVILLE RD MCMINNVILLE, OR

(10) STATIC WATER LEVEL:
8 ft. below land surface. Date 02/08/05
Artesian pressure _____ lb per square in. Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found 18

From	To	Est Flow Rate	SWL
18	63	60	8

(12) WELL LOG:
Ground elevation ___

Material	From	To	SWL
TOP SOIL	0	3	
CLAY, LIGHT BROWN	3	12	
CLAY, DARK BROWN	12	18	
CLAY, GRAY W/SOME SAND	18	35	8
CLAY, W/FINE GRAVEL AND SOME SAND	35	50	8
CLAY, GRAY W/COMPACTED SAND, SOME GRAVEL	50	64	8
CLAY, SOFTER SQUEEZING W/MAYBE SOME SAND	64	93	8
CLAY, GRAY SOFT SQUEEZING	93	120	

DAVE PAYSINGER, BLUE WATER DRILLING CO.
(503) 868-7878

Date started 02/07/05 Completed 02/08/05

(unbonded) Water Well Constructor Certification: I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to my best knowledge and belief.
WWC Number _____
Signed _____ Date _____

(bonded) Water Well Constructor Certification: I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1438
Signed David G Paysinger Date 02/13/05

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16 YAMH 3887

5s/5w/11

State of Oregon
WATER WELL REPORT (as required by ORS 537.765)

Start Card # 66521

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SALEM, OREGON

(1) OWNER: Well No. 1506
Name RON/RHONDA LARSON
Address 14815 SW DELASHMUTT LN
City MCMINNVILLE St OR Zip 97128

(2) TYPE OF WORK: NEW WELL

(3) DRILL METHOD: ROTARY AIR

(4) PROPOSED USE: DOMESTIC

(5) BORE HOLE CONSTRUCTION:
Special Construction Approval: NO Depth of Compl. Well 100 ft
Explosives used NO Type Amount

HOLE Diam.	From	To	Material	SEAL From	To	Amount
10	0	39	BENTONITE	0	39	11 SAX
6	39	100				

Seal placement method POURED/TAMPED
Backfill: from ft to ft Material
Gravel: from ft to ft Size

(6) CASING/LINER:

	Diam.	From	To	Gauge	Material	Connection
Casing	6	+1	39	.25	STEEL	WELDED
Liner	4	0	100	SDR26	PLASTIC	WELDED

Final Location of shoe(s) NO SHOE

(7) PERFORATIONS/SCREENS:
[X] Perforations Method ELECTRIC SAW
[ ] Screens

From	To	Type Slot Size	Number	Diam.	Material Tele/pipe size	Casing/liner
80	100	6"	36			LINER

(8) WELL TESTS: Minimum testing time is 1 hour
Test type AIR

Yield GPM	Draw-down	Drill stem at	Time
7		100	1 hr.

Temperature of water 53 Depth Artesian Flow Found
Was water analysis done? NO By whom
Reason for water not suitable for use
Depth of strata 0

(9) LOCATION OF WELL by legal description:
County YAMHILL Lat. 45° 09' 15" Long. 123° 15' 53"
Township 5 S Range 5 W WM.
Section 11 SW 1/4 NW 1/4
Tax Lot 5511 Lot 0700 Block Subdivision
Street Address of Well (or nearest Address)
14815 SW DELASCHMUTT LN MCMINNVILLE, OR

(10) STATIC WATER LEVEL:
18 ft. below land surface. Date 05/18/95
Artesian pressure lb per square in. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 84

From	To	Est Flow Rate	SWL
84	90	7	18

(12) WELL LOG:
Ground elevation

Material	From	To	SWL
TOP SOIL	0	4	
BROWN CLAY	4	18	
BLUE CLAY	18	30	
BLUE MARINE ROCK	30	84	
BLUE MARINE ROCK W/QUARTZ,WHITE	84	90	18
BLUE MARINE ROCK	90	100	

DAVE PAYSINGER
BLUE WATER DRILLING CO.
DAYTON, OR. 97114

Date started 05/18/95 Completed 05/18/95

(unbonded) Water Well Constructor Certification: I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to my best knowledge and belief.
WWC Number
Signed Date

(bonded) Water Well Constructor Certification: I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1438
Signed David G. Paysinger Date 05/18/95

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YAMH 56263

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

WELL LABEL # L 106618

START CARD # 208631

Instructions for completing this report are on the last page of this form.

(1) LAND OWNER Owner Well I.D. _____
First Name Robert Last Name Greenwood
Company _____
Address 15000 S.W. Delashmutt Lane
City McMinnville State Or. Zip 97128

(2) TYPE OF WORK ☒ New Well ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD
☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger ☐ Cable Mud ☐ Reverse Rotary ☐ Other _____

(4) PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Community ☐ Industrial/Commercial ☐ Livestock ☐ Dewatering ☐ Injection ☐ Thermal ☐ Other _____

(5) BORE HOLE CONSTRUCTION Special Standard: ☐ Yes (attach copy)
Depth of Completed Well 125 ft.

BORE HOLE Dia	From	To	Material	SEAL From	To	Amount	Scks/lbs
12"	0	50	Bentonite	0	50	38	Sacks
6"	50	125					

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☒ Other Bentonite (Poured Slowly)
Backfill placed from 116 ft. to 125 ft. Material 3/8 Pea Gravel
Filter pack from 40 ft. to 125 ft. Material Pea Gravel size 3/8
Explosives used: ☐ Yes Type _____ Amount _____

(6) CASING/LINER

Csng	Linr	Dia	+	From	To	Gauge	Steel	Plastic	Welded	Thrd
X		6	+	2	50	.125	X		X	
	X	4	−	4	105	160		X	X	

Shoe ☐ Inside ☐ Outside ☐ Other Location of shoe(s) _____
Temporary casing ☐ Yes Diameter _____ From _____ To _____

(7) PERFORATIONS/SCREENS
Perforations Method _____
Screens Type _____ Material _____

Perf	Scrn	Csng	Linr	Screen Dia	From	To	Screen/slot width	Slot length	# of slots	Tele/pipe size
	X			4"	105	125	.010	—	—	Johnson

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
30	Air Lift	125	4 hrs

Temperature 54 °F Lab analysis ☐ Yes
Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

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SALEM, OREGON

(9) LOCATION OF WELL (legal description)
County Yamhill Twp 5S N or S Range 5W E or W W.M.
Sec 11 SE 1/4 of the NW 1/4 Tax Lot 00900
Tax Map Number _____ Lot _____
Lat ___°___'___.___" or ___.___ DMS or DD
Long ___°___'___.___" or ___.___ DMS or DD
Street Address of Well (or nearest address) 15000 S.W. Delashmutt Lane McMinnville, Or. 97128

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL (ft)
Existing Well/Predeepening				
Completed Well	5/14/12		−	7

Flowing Artesian? ☐ Yes Dry Hole? ☐ Yes

WATER BEARING ZONES Depth water was first found 92'

SWL Date	From	To	Est Flow	SWL (psi)	+	SWL (ft)
5/14/12	92	110	30		−	7

(11) WELL LOG Ground Elevation Approx. 200'

Material	From	To
Topsoil	0	3
Brown Clay	3	18
Blue Clay	18	39
Silty Blue clay w/ small gravels	39	44
Weathered Gray Shale Firm (tight)	44	92
Med. Blue sand w/ small Blue gravel (turkey grit)	92	110
58 ft Blue clay	110	125

Date Started 5/8/12 Completed 5/10/12

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
License Number Not Appl. Date _____
Signed _____

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
License Number 795 Date 5/11/12
Signed Randall L. Wilcox
Contact Info. (optional)

ORIGINAL – WATER RESOURCES DEPARTMENT ONE COPY FOR CONSTRUCTOR ONE COPY FOR CUSTOMER
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK 10/16/2006

RECEIVED
JUL 25 1994
WATER RESOURCES DEPT.
SALEM, OREGON

YAMH 3138

5S/5W/11dc

(START CARD) # 52929

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)
Instructions for completing this report are on the last page of this form.

(1) OWNER:
Name Mr. & Mrs. Lester B Rabuck & Harriet Rabuck
Well Number
Address 16441 S.W. Gopher Valley Rd.
City Sheridan State OR Zip 97378

(2) TYPE OF WORK
[X] New Well [ ] Deepening [ ] Alteration (repair/recondition) [ ] Abandonment

(3) DRILL METHOD:
[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger
[ ] Other

(4) PROPOSED USE:
[X] Domestic [ ] Community [ ] Industrial [ ] Irrigation
[ ] Thermal [ ] Injection [ ] Livestock [ ] Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval [ ] Yes [X] No Depth of Completed Well 86 ft.
Explosives used [ ] Yes [X] No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
10 3/8"	0	18	Cement	0	18	6 Sacks
6	18	86				

How was seal placed: Method [ ] A [ ] B [ ] C [ ] D [X] E
[ ] Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6	+2	18	.250	[X]	[ ]	[ ]	[ ]
Liner:	4	6	86	160 SR	[ ]	[X]	[X]	[ ]

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
[X] Perforations Method Electric drill
[ ] Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
46	86		140	5/8"	Cranston	[ ]	[X]

(8) WELL TESTS: Minimum testing time is 1 hour
[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
100		86	1 hr.

Temperature of water 52 Depth Artesian Flow Found
Was a water analysis done? [ ] Yes By whom
Did any strata contain water not suitable for intended use? [ ] Too little
[ ] Salty [ ] Muddy [ ] Odor [ ] Colored [ ] Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Yamhill Latitude Longitude
Township 5S N or S Range 5W E or W. WM.
Section 11 NW 1/4 SE 1/4
Tax Lot Lot Block Subdivision
Street Address of Well (or nearest address) 16441 S.W. Gopher Valley Rd. Sheridan, OR 97378

(10) STATIC WATER LEVEL:
20 ft. below land surface. Date July 15, 94
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found

From	To	Estimated Flow Rate	SWL
66	68	10 G.P.M	
84	85	90 G.P.M.	

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
Topsoil	0	3	
Brown Clay	3	6	
Brown Decomposed clay Hard Blue Basalt with few fractured layers	6	10	
	10	86	

Date started July 14, 94 Completed July 15, 94

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number
Signed Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1165
Signed James M Wilson Date July 15, 94

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APPENDIX F

Memorandum, Evaluation of Historical Groundwater Elevations in the Proposed Module 11 Expansion Area, dated July 23, 2015

Environmental Consultants
and Contractors

14945 SW Sequoia Parkway
Suite 180
Portland, OR 97224

(503) 639-9201
FAX (503) 684-6948
www.scsengineers.com

SCS ENGINEERS

MEMORANDUM

DATE: April 23, 2015

TO: Hari Sharma and Fabrizio Settepani, Geosyntec Consultants

Cc: Tim Watson, Riverbend Landfill Company
Frank Willmann, Waste Management
Paul Burns, Waste Management
Mark Verwiel, Waste Management

FROM: David Lamadrid, R.G., and Louis Caruso, SCS Engineers

REGISTERED OREGON DAVID LAMADRID G1905 GEOLOGIST
Expires 1/31/16

SUBJECT: **Evaluation of Historical Groundwater Elevations in the Proposed Module 11 Expansion Area, Riverbend Landfill, McMinnville, Oregon (SCS No. 04215015.00)**

This memorandum, prepared by SCS Engineers (SCS) at the request of Riverbend Landfill Company (RLC), presents and evaluates available historical groundwater elevation data and interpreted groundwater potentiometric surface contours in the proposed Module 11 expansion area at Riverbend Landfill (RL) in McMinnville, Oregon. SCS understands that this information will be used to support the design of base grade elevations for the proposed Module 11 landfill cell(s). As such, this memorandum focuses on identifying historical high groundwater elevations in the proposed Module 11 expansion area using available historical data.

Monitoring wells and piezometers located within or adjacent to the proposed Module 11 expansion area, along with the historical range of available groundwater elevation data for each well, are listed below and shown in Figure 1.

- Existing monitoring well pairs MW-1A/MW-1B and MW-10A/MW-10B, and former piezometer pair P-04A/P-04B (decommissioned in June 2013), each with historical groundwater elevation monitoring data dating back to 1993.
- Existing monitoring well pairs MW-18A/MW-18B and MW-20A/MW-20B with historical groundwater elevation monitoring data dating back to 2000.
- Existing piezometers P-05A and P-06A with historical groundwater elevation monitoring data dating back to 2006.
- Existing piezometer GT-10-1 with historical groundwater elevation monitoring data dating back to 2010.

The "A" designated wells/piezometers and GT-10-1 are screened in the shallow (upper) silt-clay water-bearing zone (WBZ), and the "B" designated wells are screened in the deep (lower) sand-gravel WBZ, except for monitoring well pair MW-1A/MW-1B for which the designations are reversed from this nomenclature.

Information used to support this evaluation included historical depth-to-groundwater and groundwater elevation data presented in Table 1, and groundwater elevation hydrographs provided in Attachment 1, for the above-mentioned wells and piezometers. The hydrographs identify historical high groundwater elevations for each well and piezometer during the well-specific monitoring period, and include precipitation data.

The determination of high groundwater elevations only considered groundwater elevation data for the shallow WBZ because (1) this WBZ is relevant with respect to the base grade designs for the proposed Module 11 landfill cell(s), and (2) groundwater elevations in shallow WBZ wells are typically shallower than those in the associated deep WBZ wells.

Based on the data presented in Table 1 and the hydrographs, the following are noteworthy findings related to groundwater elevations in the shallow WBZ in the proposed Module 11 expansion area:

- Historical high groundwater elevations ranged from 127.25 feet above mean sea level (amsl [local datum]) at well MW-20A (in April 2011) near the southeast corner of proposed Module 11, to 150.27 feet amsl at well MW-1B (in December 1994) near the northern corner of proposed Module 11.

- The historical high groundwater elevations correspond to depth-to-groundwater measurements that were typically less than 5 feet below ground surface (bgs).

- The hydrographs show that groundwater elevations exhibit typical seasonal fluctuations (see hydrographs in Attachment 1). The magnitudes of the fluctuations, however, do not appear to directly correspond to annual precipitation (i.e., in most cases high annual precipitation does not result in higher groundwater elevations in the complete subset of wells in the Module 11 area). This is due in part to the frequency that groundwater elevation data are collected (i.e., quarterly prior to 2003 and semiannually since 2003).

- Historical interpretations of groundwater elevations indicate that groundwater within the shallow WBZ consistently flows southeasterly across the proposed Module 11 area.

- Groundwater elevations in shallow WBZ wells/piezometers are typically higher than those in the associated deep WBZ wells/piezometers (see hydrographs in Attachment 1).

Groundwater flow and hydraulic gradients representative of high groundwater conditions in the proposed Module 11 expansion area were evaluated based on review of (1) the groundwater elevation data presented in this memorandum, and (2) previous interpretations of shallow WBZ groundwater potentiometric surface contours presented in annual environmental monitoring reports submitted to the Oregon Department of Environmental Quality (DEQ) since 2000. It should be noted that groundwater elevation data collected after 1999 were used for this evaluation because interpretation of groundwater flow in the shallow WBZ across the proposed Module 11 area was greatly improved in 2000 when monitoring wells MW-18A and MW-20A were installed. The interpretations were further enhanced with the installation of piezometers P-05A and P-06A in 2006 and GT-10-1 in 2010.

Based on review of the post-1999 groundwater elevation data, representative high groundwater conditions were identified for the following monitoring periods:

- **February 2002:** The hydrograph for monitoring well MW-18A shows that the historical high groundwater elevation for this well occurred in February 2002. The February 2002 groundwater elevation measured in well MW-20A was nearly equivalent (within 0.17 feet) to the historical high groundwater elevation for this well. The precipitation amounts in late 2001 and early 2002 were generally about average based on precipitation data provided in this memorandum.

- **April 2011:** The full set of existing monitoring wells and piezometers within or adjacent to the proposed Module 11 expansion area was in place by 2010 (including piezometer GT-10-1 that was installed in September 2010). This set of wells and piezometers allows further improvement in the interpretation of groundwater flow. The hydrographs for MW-20A and P-06A show that historical high groundwater elevations occurred in these wells in April 2011. The precipitation amounts in late 2010 and early 2011 were generally above average based on precipitation data provided in this memorandum.

- **April 2014:** The hydrographs for piezometers P-05A and GT-10-1 show that the historical high groundwater elevations for these piezometers occurred in April 2014. The precipitation amounts in late 2013 and early 2014 were generally about average.

Groundwater potentiometric surface (i.e., elevation) contours for the shallow (silt-clay) WBZ based on groundwater elevation data collected in April 2014, April 2011, and February 2002 are shown in Figures 1, 2, and 3, respectively. The interpretative groundwater elevation contours for each monitoring period show that shallow groundwater beneath the proposed Module 11 expansion area flowed southeasterly, consistent with other historical interpretations for this area. The hydraulic gradient for each monitoring period was about 0.011 feet/feet (as measured between upgradient well MW-10A and downgradient well MW-20A).

Figure 4 presents groundwater elevation hydrographs for shallow WBZ wells and piezometers, along with the April 2011 interpretative groundwater elevation contours in the proposed Module 11 area. The hydrographs also denote ground surface elevations to illustrate the depth to groundwater below ground surface. In some cases the groundwater level was at ground surface during the wet season (e.g., as measured in GT-10-1 and MW-20A). The unusually high groundwater conditions in piezometers GT-10-1 and P-05A and monitoring well MW-20A are likely due to surface water ponding in the in the proposed Module 11 area (and in some cases near these monitoring points based on direct observations during groundwater monitoring events). It should be noted that extensive surface water ponding was believed to be responsible, in part, for changes in MW-20A water quality based on results of a 2006 water-quality assessment performed for the north poplar tree farm area (i.e., proposed Module 11 area) (Shaw Environmental, Inc., 2006[1]). The assessment indicated buried drain tiles in the north field were

[1] Shaw Environmental, Inc., 2006, Water-Quality Assessment of the North Poplar Tree Farm, Riverbend Landfill, McMinnville, Oregon, prepared for Riverbend Landfill, Inc., by Shaw Environmental, Inc., Portland, Oregon, December 27.

channelizing stormwater runoff toward MW-20A resulting in surface water ponding in the area of this monitoring well.

Attachment: Table 1: Proposed Module 11 Area Groundwater Elevations
Figure 1: Shallow Water-Bearing Zone Groundwater Elevation Contours (April 28, 2014)
Figure 2: Shallow Water-Bearing Zone Groundwater Elevation Contours (April 12, 2011)
Figure 3: Shallow Water-Bearing Zone Groundwater Elevation Contours (February 7, 2002)
Figure 4: Shallow Water-Bearing Zone Groundwater Elevation Hydrographs and April 2011 Groundwater Elevation Contours
Attachment 1: Groundwater Elevation Hydrographs

Table

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-01A (Deep)	11-Feb-93	155.30	20.72	134.58
MW-01A (Deep)	12-May-93	155.30	22.37	132.93
MW-01A (Deep)	12-Jul-93	155.30	26.49	128.81
MW-01A (Deep)	10-Aug-93	155.30	28.08	127.22
MW-01A (Deep)	14-Sep-93	155.30	28.39	126.91
MW-01A (Deep)	12-Oct-93	155.30	29.33	125.97
MW-01A (Deep)	4-Dec-93	155.30	28.97	126.33
MW-01A (Deep)	5-Jan-94	155.30	22.76	132.54
MW-01A (Deep)	22-Feb-94	155.30	20.92	134.38
MW-01A (Deep)	25-Mar-94	155.30	21.83	133.47
MW-01A (Deep)	26-Apr-94	155.30	22.25	133.05
MW-01A (Deep)	26-May-94	155.30	31.57	123.73
MW-01A (Deep)	1-Jul-94	155.30	29.88	125.42
MW-01A (Deep)	2-Aug-94	155.30	33.00	122.30
MW-01A (Deep)	2-Sep-94	155.30	33.27	122.03
MW-01A (Deep)	13-Oct-94	155.30	30.12	125.18
MW-01A (Deep)	11-Nov-94	155.30	28.38	126.92
MW-01A (Deep)	21-Dec-94	155.30	23.22	132.08
MW-01A (Deep)	20-Jan-95	155.30	21.85	133.45
MW-01A (Deep)	23-Feb-95	155.30	21.49	133.81
MW-01A (Deep)	28-Mar-95	155.30	21.79	133.51
MW-01A (Deep)	14-Apr-95	155.30	23.00	132.30
MW-01A (Deep)	18-May-95	155.30	20.12	135.18
MW-01A (Deep)	20-Jun-95	155.30	26.24	129.06
MW-01A (Deep)	26-Jul-95	155.30	27.54	127.76
MW-01A (Deep)	22-Aug-95	155.30	32.40	122.90
MW-01A (Deep)	11-Sep-95	155.30	28.53	126.77
MW-01A (Deep)	24-Oct-95	155.30	27.29	128.01
MW-01A (Deep)	20-Dec-95	155.30	21.64	133.66
MW-01A (Deep)	11-Jan-96	155.30	22.19	133.11
MW-01A (Deep)	16-Feb-96	155.30	21.39	133.91
MW-01A (Deep)	30-Mar-96	155.30	22.58	132.72
MW-01A (Deep)	9-Apr-96	155.30	27.30	128.00
MW-01A (Deep)	28-May-96	155.30	26.72	128.58
MW-01A (Deep)	28-Jun-96	155.30	30.90	124.40
MW-01A (Deep)	30-Jul-96	155.30	33.72	121.58
MW-01A (Deep)	29-Aug-96	155.30	31.58	123.72
MW-01A (Deep)	30-Sep-96	155.30	32.63	122.67
MW-01A (Deep)	31-Oct-96	155.30	32.20	123.10
MW-01A (Deep)	12-Dec-96	155.30	23.20	132.10
MW-01A (Deep)	22-Jan-97	155.30	21.23	134.07
MW-01A (Deep)	31-Mar-97	155.30	23.33	131.97
MW-01A (Deep)	19-May-97	155.30	32.13	123.17
MW-01A (Deep)	9-Sep-97	155.30	28.95	126.35
MW-01A (Deep)	18-Dec-97	155.30	21.79	133.51
MW-01A (Deep)	17-Mar-98	155.30	25.42	129.88
MW-01A (Deep)	8-Jun-98	155.30	30.90	124.40
MW-01A (Deep)	18-Aug-98	155.30	32.21	123.09
MW-01A (Deep)	5-Nov-98	155.30	26.93	128.37

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-01A (Deep)	22-Mar-99	155.30	21.93	133.37
MW-01A (Deep)	7-Sep-99	155.30	31.58	123.72
MW-01A (Deep)	9-Dec-99	155.30	NR	---
MW-01A (Deep)	7-Feb-00	155.30	20.38	134.92
MW-01A (Deep)	29-May-00	155.30	29.43	125.87
MW-01A (Deep)	21-Aug-00	155.30	33.01	122.29
MW-01A (Deep)	6-Nov-00	155.30	27.14	128.16
MW-01A (Deep)	29-Jan-01	155.30	23.97	131.33
MW-01A (Deep)	23-Apr-01	155.30	23.59	131.71
MW-01A (Deep)	27-Aug-01	155.30	28.95	126.35
MW-01A (Deep)	5-Nov-01	155.30	29.45	125.85
MW-01A (Deep)	7-Feb-02	155.30	21.81	133.49
MW-01A (Deep)	8-Apr-02	155.30	25.93	129.37
MW-01A (Deep)	22-Jul-02	155.30	30.21	125.09
MW-01A (Deep)	7-Oct-02	155.30	30.21	125.09
MW-01A (Deep)	24-Feb-03	155.30	24.89	130.41
MW-01A (Deep)	12-May-03	155.30	27.77	127.53
MW-01A (Deep)	18-Aug-03	155.30	42.78	112.52
MW-01A (Deep)	17-Nov-03	155.30	32.69	122.61
MW-01A (Deep)	19-Apr-04	155.30	29.88	125.42
MW-01A (Deep)	8-Nov-04	155.30	29.16	126.14
MW-01A (Deep)	23-May-05	155.30	28.77	126.53
MW-01A (Deep)	24-Oct-05	155.30	29.76	125.54
MW-01A (Deep)	8-May-06	155.30	33.75	121.55
MW-01A (Deep)	16-Oct-06	155.30	32.05	123.25
MW-01A (Deep)	7-May-07	155.30	28.31	126.99
MW-01A (Deep)	5-Nov-07	155.30	30.35	124.95
MW-01A (Deep)	19-May-08	155.30	46.09	109.21
MW-01A (Deep)	10-Nov-08	155.30	40.69	114.61
MW-01A (Deep)	4-May-09	155.30	24.81	130.49
MW-01A (Deep)	16-Nov-09	155.30	28.06	127.24
MW-01A (Deep)	19-Apr-10	155.30	31.96	123.34
MW-01A (Deep)	4-Oct-10	155.30	34.29	121.01
MW-01A (Deep)	12-Apr-11	155.30	24.57	130.73
MW-01A (Deep)	1-Nov-11	155.30	29.60	125.70
MW-01A (Deep)	30-Apr-12	155.30	23.35	131.95
MW-01A (Deep)	12-Nov-12	155.30	40.50	114.80
MW-01A (Deep)	8-Apr-13	155.30	22.65	132.65
MW-01A (Deep)	18-Nov-13	155.30	25.57	129.73
MW-01A (Deep)	28-Apr-14	155.30	23.28	132.02
MW-01A (Deep)	17-Nov-14	155.30	38.92	116.38
MW-01B (Shallow)	11-Feb-93	155.00	7.02	147.98
MW-01B (Shallow)	12-May-93	155.00	7.12	147.88
MW-01B (Shallow)	12-Jul-93	155.00	11.63	143.37
MW-01B (Shallow)	10-Aug-93	155.00	12.56	142.44
MW-01B (Shallow)	14-Sep-93	155.00	14.30	140.70
MW-01B (Shallow)	12-Oct-93	155.00	14.52	140.48
MW-01B (Shallow)	4-Dec-93	155.00	9.43	145.57
MW-01B (Shallow)	5-Jan-94	155.00	4.74	150.26

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-01B (Shallow)	22-Feb-94	155.00	6.14	148.86
MW-01B (Shallow)	25-Mar-94	155.00	5.85	149.15
MW-01B (Shallow)	26-Apr-94	155.00	8.54	146.46
MW-01B (Shallow)	26-May-94	155.00	10.90	144.10
MW-01B (Shallow)	1-Jul-94	155.00	13.78	141.22
MW-01B (Shallow)	2-Aug-94	155.00	14.64	140.36
MW-01B (Shallow)	2-Sep-94	155.00	15.67	139.33
MW-01B (Shallow)	13-Oct-94	155.00	17.17	137.83
MW-01B (Shallow)	11-Nov-94	155.00	17.77	137.23
MW-01B (Shallow)	21-Dec-94	155.00	4.73	150.27
MW-01B (Shallow)	20-Jan-95	155.00	5.16	149.84
MW-01B (Shallow)	23-Feb-95	155.00	5.70	149.30
MW-01B (Shallow)	28-Mar-95	155.00	6.44	148.56
MW-01B (Shallow)	14-Apr-95	155.00	6.42	148.58
MW-01B (Shallow)	18-May-95	155.00	9.07	145.93
MW-01B (Shallow)	20-Jun-95	155.00	9.72	145.28
MW-01B (Shallow)	26-Jul-95	155.00	11.75	143.25
MW-01B (Shallow)	22-Aug-95	155.00	13.13	141.87
MW-01B (Shallow)	11-Sep-95	155.00	16.10	138.90
MW-01B (Shallow)	24-Oct-95	155.00	13.83	141.17
MW-01B (Shallow)	22-Nov-95	155.00	6.97	148.03
MW-01B (Shallow)	20-Dec-95	155.00	5.16	149.84
MW-01B (Shallow)	11-Jan-96	155.00	5.22	149.78
MW-01B (Shallow)	16-Feb-96	155.00	6.22	148.78
MW-01B (Shallow)	30-Mar-96	155.00	8.00	147.00
MW-01B (Shallow)	9-Apr-96	155.00	8.49	146.51
MW-01B (Shallow)	28-May-96	155.00	6.85	148.15
MW-01B (Shallow)	28-Jun-96	155.00	9.83	145.17
MW-01B (Shallow)	30-Jul-96	155.00	12.51	142.49
MW-01B (Shallow)	29-Aug-96	155.00	12.18	142.82
MW-01B (Shallow)	30-Sep-96	155.00	11.02	143.98
MW-01B (Shallow)	31-Oct-96	155.00	7.04	147.96
MW-01B (Shallow)	12-Dec-96	155.00	5.31	149.69
MW-01B (Shallow)	22-Jan-97	155.00	5.01	149.99
MW-01B (Shallow)	31-Mar-97	155.00	6.73	148.27
MW-01B (Shallow)	19-May-97	155.00	9.16	145.84
MW-01B (Shallow)	9-Sep-97	155.00	11.53	143.47
MW-01B (Shallow)	18-Dec-97	155.00	4.96	150.04
MW-01B (Shallow)	17-Mar-98	155.00	5.98	149.02
MW-01B (Shallow)	8-Jun-98	155.00	8.10	146.90
MW-01B (Shallow)	18-Aug-98	155.00	10.71	144.29
MW-01B (Shallow)	5-Nov-98	155.00	11.97	143.03
MW-01B (Shallow)	22-Mar-99	155.00	5.13	149.87
MW-01B (Shallow)	7-Sep-99	155.00	14.43	140.57
MW-01B (Shallow)	9-Dec-99	155.00	NR	---
MW-01B (Shallow)	7-Feb-00	155.00	6.00	149.00
MW-01B (Shallow)	29-May-00	155.00	8.50	146.50
MW-01B (Shallow)	21-Aug-00	155.00	NR	---
MW-01B (Shallow)	6-Nov-00	155.00	NR	---

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-01B (Shallow)	29-Jan-01	155.00	9.09	145.91
MW-01B (Shallow)	23-Apr-01	155.00	8.61	146.39
MW-01B (Shallow)	27-Aug-01	155.00	NR	---
MW-01B (Shallow)	5-Nov-01	155.00	NR	---
MW-01B (Shallow)	7-Feb-02	155.00	5.08	149.92
MW-01B (Shallow)	8-Apr-02	155.00	7.43	147.57
MW-01B (Shallow)	22-Jul-02	155.00	NR	---
MW-01B (Shallow)	7-Oct-02	155.00	NR	---
MW-01B (Shallow)	24-Feb-03	155.00	5.75	149.25
MW-01B (Shallow)	12-May-03	155.00	7.33	147.67
MW-01B (Shallow)	18-Aug-03	155.00	NR	---
MW-01B (Shallow)	17-Nov-03	155.00	20.62	134.38
MW-01B (Shallow)	19-Apr-04	155.00	7.54	147.46
MW-01B (Shallow)	8-Nov-04	155.00	17.53	137.47
MW-01B (Shallow)	23-May-05	155.00	7.57	147.43
MW-01B (Shallow)	24-Oct-05	155.00	22.25	132.75
MW-01B (Shallow)	8-May-06	155.00	9.24	145.76
MW-01B (Shallow)	16-Oct-06	155.00	23.22	131.78
MW-01B (Shallow)	7-May-07	155.00	8.10	146.90
MW-01B (Shallow)	5-Nov-07	155.00	19.03	135.97
MW-01B (Shallow)	19-May-08	155.00	8.49	146.51
MW-01B (Shallow)	10-Nov-08	155.00	17.43	137.57
MW-01B (Shallow)	4-May-09	155.00	6.90	148.10
MW-01B (Shallow)	16-Nov-09	155.00	9.70	145.30
MW-01B (Shallow)	19-Apr-10	155.00	6.55	148.45
MW-01B (Shallow)	5-Oct-10	155.00	18.01	136.99
MW-01B (Shallow)	12-Apr-11	155.00	5.16	149.84
MW-01B (Shallow)	1-Nov-11	155.00	13.34	141.66
MW-01B (Shallow)	30-Apr-12	155.00	7.09	147.91
MW-01B (Shallow)	12-Nov-12	155.00	10.14	144.86
MW-01B (Shallow)	8-Apr-13	155.00	6.54	148.46
MW-01B (Shallow)	18-Nov-13	155.00	9.81	145.19
MW-01B (Shallow)	28-Apr-14	155.00	5.51	149.49
MW-01B (Shallow)	17-Nov-14	155.00	7.70	147.30
MW-10A (Shallow)	4-Dec-93	153.21	16.35	136.86
MW-10A (Shallow)	5-Jan-94	153.21	4.08	149.13
MW-10A (Shallow)	22-Feb-94	153.21	3.96	149.25
MW-10A (Shallow)	25-Mar-94	153.21	4.62	148.59
MW-10A (Shallow)	26-Apr-94	153.21	6.22	146.99
MW-10A (Shallow)	26-May-94	153.21	8.31	144.90
MW-10A (Shallow)	1-Jul-94	153.21	15.49	137.72
MW-10A (Shallow)	2-Aug-94	153.21	19.44	133.77
MW-10A (Shallow)	2-Sep-94	153.21	20.72	132.49
MW-10A (Shallow)	13-Oct-94	153.21	21.71	131.50
MW-10A (Shallow)	11-Nov-94	153.21	14.42	138.79
MW-10A (Shallow)	21-Dec-94	153.21	4.82	148.39
MW-10A (Shallow)	20-Jan-95	153.21	4.65	148.56
MW-10A (Shallow)	23-Feb-95	153.21	4.88	148.33
MW-10A (Shallow)	28-Mar-95	153.21	5.41	147.80

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-10A (Shallow)	14-Apr-95	153.21	5.60	147.61
MW-10A (Shallow)	18-May-95	153.21	8.05	145.16
MW-10A (Shallow)	20-Jun-95	153.21	9.54	143.67
MW-10A (Shallow)	26-Jul-95	153.21	14.69	138.52
MW-10A (Shallow)	22-Aug-95	153.21	17.20	136.01
MW-10A (Shallow)	11-Sep-95	153.21	18.32	134.89
MW-10A (Shallow)	24-Oct-95	153.21	17.85	135.36
MW-10A (Shallow)	22-Nov-95	153.21	7.00	146.21
MW-10A (Shallow)	20-Dec-95	153.21	4.39	148.82
MW-10A (Shallow)	11-Jan-96	153.21	4.46	148.75
MW-10A (Shallow)	16-Feb-96	153.21	5.16	148.05
MW-10A (Shallow)	30-Mar-96	153.21	6.24	146.97
MW-10A (Shallow)	9-Apr-96	153.21	6.49	146.72
MW-10A (Shallow)	28-May-96	153.21	5.66	147.55
MW-10A (Shallow)	28-Jun-96	153.21	9.63	143.58
MW-10A (Shallow)	30-Jul-96	153.21	15.73	137.48
MW-10A (Shallow)	29-Aug-96	153.21	18.35	134.86
MW-10A (Shallow)	30-Sep-96	153.21	10.01	143.20
MW-10A (Shallow)	31-Oct-96	153.21	17.97	135.24
MW-10A (Shallow)	12-Dec-96	153.21	4.56	148.65
MW-10A (Shallow)	22-Jan-97	153.21	4.55	148.66
MW-10A (Shallow)	31-Mar-97	153.21	5.67	147.54
MW-10A (Shallow)	19-May-97	153.21	6.74	146.47
MW-10A (Shallow)	9-Sep-97	153.21	15.49	137.72
MW-10A (Shallow)	18-Dec-97	153.21	3.93	149.28
MW-10A (Shallow)	17-Mar-98	153.21	5.00	148.21
MW-10A (Shallow)	8-Jun-98	153.21	6.20	147.01
MW-10A (Shallow)	18-Aug-98	153.21	11.35	141.86
MW-10A (Shallow)	5-Nov-98	153.21	14.03	139.18
MW-10A (Shallow)	22-Mar-99	153.21	5.29	147.92
MW-10A (Shallow)	7-Sep-99	153.21	18.22	134.99
MW-10A (Shallow)	9-Dec-99	153.21	NR	---
MW-10A (Shallow)	7-Feb-00	153.21	5.00	148.21
MW-10A (Shallow)	29-May-00	153.21	6.70	146.51
MW-10A (Shallow)	21-Aug-00	153.21	17.19	136.02
MW-10A (Shallow)	6-Nov-00	153.21	19.82	133.39
MW-10A (Shallow)	29-Jan-01	153.21	8.34	144.87
MW-10A (Shallow)	23-Apr-01	153.21	7.26	145.95
MW-10A (Shallow)	27-Aug-01	153.21	13.70	139.51
MW-10A (Shallow)	5-Nov-01	153.21	19.78	133.43
MW-10A (Shallow)	7-Feb-02	153.21	4.62	148.59
MW-10A (Shallow)	8-Apr-02	153.21	5.98	147.23
MW-10A (Shallow)	22-Jul-02	153.21	15.39	137.82
MW-10A (Shallow)	7-Oct-02	153.21	21.01	132.20
MW-10A (Shallow)	24-Feb-03	153.21	5.00	148.21
MW-10A (Shallow)	12-May-03	153.21	6.02	147.19
MW-10A (Shallow)	18-Aug-03	153.21	18.81	134.40
MW-10A (Shallow)	17-Nov-03	153.21	27.01	126.20
MW-10A (Shallow)	19-Apr-04	153.21	5.97	147.24

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-10A (Shallow)	8-Nov-04	153.21	19.61	133.60
MW-10A (Shallow)	23-May-05	153.21	5.70	147.51
MW-10A (Shallow)	24-Oct-05	153.21	20.74	132.47
MW-10A (Shallow)	8-May-06	153.21	7.44	145.77
MW-10A (Shallow)	16-Oct-06	153.21	22.55	130.66
MW-10A (Shallow)	7-May-07	153.21	6.21	147.00
MW-10A (Shallow)	5-Nov-07	153.21	20.39	132.82
MW-10A (Shallow)	19-May-08	153.21	7.15	146.06
MW-10A (Shallow)	10-Nov-08	153.21	19.75	133.46
MW-10A (Shallow)	4-May-09	153.21	5.51	147.70
MW-10A (Shallow)	16-Nov-09	153.21	12.95	140.26
MW-10A (Shallow)	19-Apr-10	153.21	4.81	148.40
MW-10A (Shallow)	4-Oct-10	153.21	19.05	134.16
MW-10A (Shallow)	12-Apr-11	153.21	3.94	149.27
MW-10A (Shallow)	1-Nov-11	153.21	19.07	134.14
MW-10A (Shallow)	30-Apr-12	153.21	4.84	148.37
MW-10A (Shallow)	12-Nov-12	153.21	17.95	135.26
MW-10A (Shallow)	8-Apr-13	153.21	4.65	148.56
MW-10A (Shallow)	18-Nov-13	153.21	17.96	135.25
MW-10A (Shallow)	28-Apr-14	153.21	4.38	148.83
MW-10A (Shallow)	17-Nov-14	153.21	14.95	138.26
MW-10B (Deep)	4-Dec-93	152.87	23.61	129.26
MW-10B (Deep)	5-Jan-94	152.87	18.59	134.28
MW-10B (Deep)	22-Feb-94	152.87	12.53	140.34
MW-10B (Deep)	25-Mar-94	152.87	6.55	146.32
MW-10B (Deep)	26-Apr-94	152.87	17.44	135.43
MW-10B (Deep)	26-May-94	152.87	20.31	132.56
MW-10B (Deep)	1-Jul-94	152.87	21.99	130.88
MW-10B (Deep)	2-Aug-94	152.87	25.65	127.22
MW-10B (Deep)	2-Sep-94	152.87	25.20	127.67
MW-10B (Deep)	13-Oct-94	152.87	25.83	127.04
MW-10B (Deep)	11-Nov-94	152.87	22.60	130.27
MW-10B (Deep)	21-Dec-94	152.87	18.13	134.74
MW-10B (Deep)	20-Jan-95	152.87	17.11	135.76
MW-10B (Deep)	23-Feb-95	152.87	16.71	136.16
MW-10B (Deep)	28-Mar-95	152.87	17.06	135.81
MW-10B (Deep)	14-Apr-95	152.87	17.44	135.43
MW-10B (Deep)	18-May-95	152.87	18.64	134.23
MW-10B (Deep)	20-Jun-95	152.87	19.00	133.87
MW-10B (Deep)	26-Jul-95	152.87	22.52	130.35
MW-10B (Deep)	22-Aug-95	152.87	23.88	128.99
MW-10B (Deep)	11-Sep-95	152.87	23.74	129.13
MW-10B (Deep)	24-Oct-95	152.87	23.23	129.64
MW-10B (Deep)	22-Nov-95	152.87	20.78	132.09
MW-10B (Deep)	20-Dec-95	152.87	16.44	136.43
MW-10B (Deep)	11-Jan-96	152.87	16.25	136.62
MW-10B (Deep)	16-Feb-96	152.87	15.57	137.30
MW-10B (Deep)	30-Mar-96	152.87	17.07	135.80
MW-10B (Deep)	9-Apr-96	152.87	19.30	133.57

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-10B (Deep)	28-May-96	152.87	17.15	135.72
MW-10B (Deep)	28-Jun-96	152.87	19.86	133.01
MW-10B (Deep)	30-Jul-96	152.87	22.85	130.02
MW-10B (Deep)	29-Aug-96	152.87	24.53	128.34
MW-10B (Deep)	30-Sep-96	152.87	22.39	130.48
MW-10B (Deep)	31-Oct-96	152.87	23.31	129.56
MW-10B (Deep)	12-Dec-96	152.87	16.38	136.49
MW-10B (Deep)	22-Jan-97	152.87	16.15	136.72
MW-10B (Deep)	31-Mar-97	152.87	16.17	136.70
MW-10B (Deep)	19-May-97	152.87	19.86	133.01
MW-10B (Deep)	9-Sep-97	152.87	22.91	129.96
MW-10B (Deep)	18-Dec-97	152.87	16.94	135.93
MW-10B (Deep)	17-Mar-98	152.87	15.75	137.12
MW-10B (Deep)	8-Jun-98	152.87	19.47	133.40
MW-10B (Deep)	18-Aug-98	152.87	22.70	130.17
MW-10B (Deep)	5-Nov-98	152.87	22.89	129.98
MW-10B (Deep)	22-Mar-99	152.87	14.86	138.01
MW-10B (Deep)	7-Sep-99	152.87	25.29	127.58
MW-10B (Deep)	9-Dec-99	152.87	19.41	133.46
MW-10B (Deep)	7-Feb-00	152.87	15.87	137.00
MW-10B (Deep)	29-May-00	152.87	19.08	133.79
MW-10B (Deep)	21-Aug-00	152.87	24.45	128.42
MW-10B (Deep)	6-Nov-00	152.87	23.13	129.74
MW-10B (Deep)	29-Jan-01	152.87	18.78	134.09
MW-10B (Deep)	23-Apr-01	152.87	18.50	134.37
MW-10B (Deep)	27-Aug-01	152.87	23.88	128.99
MW-10B (Deep)	5-Nov-01	152.87	25.06	127.81
MW-10B (Deep)	7-Feb-02	152.87	16.15	136.72
MW-10B (Deep)	8-Apr-02	152.87	18.32	134.55
MW-10B (Deep)	22-Jul-02	152.87	26.14	126.73
MW-10B (Deep)	7-Oct-02	152.87	26.75	126.12
MW-10B (Deep)	24-Feb-03	152.87	17.52	135.35
MW-10B (Deep)	12-May-03	152.87	19.45	133.42
MW-10B (Deep)	18-Aug-03	152.87	29.72	123.15
MW-10B (Deep)	17-Nov-03	152.87	22.86	130.01
MW-10B (Deep)	19-Apr-04	152.87	21.34	131.53
MW-10B (Deep)	8-Nov-04	152.87	24.13	128.74
MW-10B (Deep)	23-May-05	152.87	20.86	132.01
MW-10B (Deep)	24-Oct-05	152.87	26.07	126.80
MW-10B (Deep)	8-May-06	152.87	24.46	128.41
MW-10B (Deep)	16-Oct-06	152.87	26.44	126.43
MW-10B (Deep)	7-May-07	152.87	19.64	133.23
MW-10B (Deep)	5-Nov-07	152.87	24.89	127.98
MW-10B (Deep)	19-May-08	152.87	30.87	122.00
MW-10B (Deep)	10-Nov-08	152.87	34.44	118.43
MW-10B (Deep)	4-May-09	152.87	19.43	133.44
MW-10B (Deep)	16-Nov-09	152.87	23.95	128.92
MW-10B (Deep)	19-Apr-10	152.87	20.14	132.73
MW-10B (Deep)	4-Oct-10	152.87	24.70	128.17

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-10B (Deep)	12-Apr-11	152.87	16.88	135.99
MW-10B (Deep)	1-Nov-11	152.87	25.77	127.10
MW-10B (Deep)	30-Apr-12	152.87	17.50	135.37
MW-10B (Deep)	12-Nov-12	152.87	27.25	125.62
MW-10B (Deep)	8-Apr-13	152.87	17.57	135.30
MW-10B (Deep)	18-Nov-13	152.87	21.99	130.88
MW-10B (Deep)	28-Apr-14	152.87	17.71	135.16
MW-10B (Deep)	17-Nov-14	152.87	30.34	122.53
MW-18A (Shallow)	6-Nov-00	148.77	17.05	131.72
MW-18A (Shallow)	29-Jan-01	148.77	12.87	135.90
MW-18A (Shallow)	23-Apr-01	148.77	13.59	135.18
MW-18A (Shallow)	27-Aug-01	148.77	18.59	130.18
MW-18A (Shallow)	5-Nov-01	148.77	17.73	131.04
MW-18A (Shallow)	7-Feb-02	148.77	7.01	141.76
MW-18A (Shallow)	8-Apr-02	148.77	12.13	136.64
MW-18A (Shallow)	22-Jul-02	148.77	17.12	131.65
MW-18A (Shallow)	7-Oct-02	148.77	21.25	127.52
MW-18A (Shallow)	24-Feb-03	148.77	8.80	139.97
MW-18A (Shallow)	12-May-03	148.77	12.54	136.23
MW-18A (Shallow)	18-Aug-03	148.77	19.52	129.25
MW-18A (Shallow)	17-Nov-03	148.77	17.31	131.46
MW-18A (Shallow)	19-Apr-04	148.77	12.56	136.21
MW-18A (Shallow)	8-Nov-04	148.77	16.15	132.62
MW-18A (Shallow)	23-May-05	148.77	12.93	135.84
MW-18A (Shallow)	24-Oct-05	148.77	19.29	129.48
MW-18A (Shallow)	8-May-06	148.77	13.75	135.02
MW-18A (Shallow)	16-Oct-06	148.77	21.40	127.37
MW-18A (Shallow)	7-May-07	148.77	13.00	135.77
MW-18A (Shallow)	5-Nov-07	148.77	17.58	131.19
MW-18A (Shallow)	19-May-08	148.77	13.86	134.91
MW-18A (Shallow)	10-Nov-08	148.77	17.20	131.57
MW-18A (Shallow)	4-May-09	148.77	12.18	136.59
MW-18A (Shallow)	16-Nov-09	148.77	12.16	136.61
MW-18A (Shallow)	19-Apr-10	148.77	10.27	138.50
MW-18A (Shallow)	4-Oct-10	148.77	18.76	130.01
MW-18A (Shallow)	12-Apr-11	148.77	7.24	141.53
MW-18A (Shallow)	1-Nov-11	148.77	18.95	129.82
MW-18A (Shallow)	30-Apr-12	148.77	11.41	137.36
MW-18A (Shallow)	12-Nov-12	148.77	13.61	135.16
MW-18A (Shallow)	8-Apr-13	148.77	8.31	140.46
MW-18A (Shallow)	18-Nov-13	148.77	15.00	133.77
MW-18A (Shallow)	28-Apr-14	148.77	7.55	141.22
MW-18A (Shallow)	17-Nov-14	148.77	14.62	134.15
MW-18B (Deep)	6-Nov-00	148.57	20.67	127.90
MW-18B (Deep)	29-Jan-01	148.57	16.01	132.56
MW-18B (Deep)	23-Apr-01	148.57	15.91	132.66
MW-18B (Deep)	27-Aug-01	148.57	21.37	127.20
MW-18B (Deep)	5-Nov-01	148.57	22.13	126.44

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-18B (Deep)	7-Feb-02	148.57	13.15	135.42
MW-18B (Deep)	8-Apr-02	148.57	14.33	134.24
MW-18B (Deep)	22-Jul-02	148.57	24.26	124.31
MW-18B (Deep)	7-Oct-02	148.57	24.75	123.82
MW-18B (Deep)	24-Feb-03	148.57	14.29	134.28
MW-18B (Deep)	12-May-03	148.57	16.19	132.38
MW-18B (Deep)	18-Aug-03	148.57	24.93	123.64
MW-18B (Deep)	17-Nov-03	148.57	23.42	125.15
MW-18B (Deep)	19-Apr-04	148.57	16.86	131.71
MW-18B (Deep)	8-Nov-04	148.57	21.12	127.45
MW-18B (Deep)	23-May-05	148.57	19.10	129.47
MW-18B (Deep)	24-Oct-05	148.57	23.03	125.54
MW-18B (Deep)	8-May-06	148.57	17.99	130.58
MW-18B (Deep)	16-Oct-06	148.57	23.53	125.04
MW-18B (Deep)	7-May-07	148.57	15.95	132.62
MW-18B (Deep)	5-Nov-07	148.57	21.15	127.42
MW-18B (Deep)	19-May-08	148.57	25.31	123.26
MW-18B (Deep)	10-Nov-08	148.57	30.83	117.74
MW-18B (Deep)	4-May-09	148.57	15.83	132.74
MW-18B (Deep)	16-Nov-09	148.57	20.50	128.07
MW-18B (Deep)	19-Apr-10	148.57	14.47	134.10
MW-18B (Deep)	4-Oct-10	148.57	21.15	127.42
MW-18B (Deep)	12-Apr-11	148.57	13.30	135.27
MW-18B (Deep)	1-Nov-11	148.57	22.48	126.09
MW-18B (Deep)	30-Apr-12	148.57	13.75	134.82
MW-18B (Deep)	12-Nov-12	148.57	22.20	126.37
MW-18B (Deep)	8-Apr-13	148.57	14.40	134.17
MW-18B (Deep)	18-Nov-13	148.57	18.67	129.90
MW-18B (Deep)	28-Apr-14	148.57	14.27	134.30
MW-18B (Deep)	17-Nov-14	148.57	21.77	126.80
MW-20A (Shallow)	6-Nov-00	129.92	7.00	122.92
MW-20A (Shallow)	29-Jan-01	129.92	3.85	126.07
MW-20A (Shallow)	23-Apr-01	129.92	3.93	125.99
MW-20A (Shallow)	27-Aug-01	129.92	4.93	124.99
MW-20A (Shallow)	5-Nov-01	129.92	6.18	123.74
MW-20A (Shallow)	7-Feb-02	129.92	2.84	127.08
MW-20A (Shallow)	8-Apr-02	129.92	3.31	126.61
MW-20A (Shallow)	22-Jul-02	129.92	6.53	123.39
MW-20A (Shallow)	7-Oct-02	129.92	9.71	120.21
MW-20A (Shallow)	24-Feb-03	129.92	3.54	126.38
MW-20A (Shallow)	12-May-03	129.92	3.66	126.26
MW-20A (Shallow)	18-Aug-03	129.92	8.75	121.17
MW-20A (Shallow)	17-Nov-03	129.92	8.86	121.06
MW-20A (Shallow)	19-Apr-04	129.92	4.38	125.54
MW-20A (Shallow)	8-Nov-04	129.92	6.67	123.25
MW-20A (Shallow)	23-May-05	129.92	4.04	125.88
MW-20A (Shallow)	24-Oct-05	129.92	6.73	123.19
MW-20A (Shallow)	8-May-06	129.92	4.59	125.33
MW-20A (Shallow)	16-Oct-06	129.92	9.14	120.78

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-20A (Shallow)	7-May-07	129.92	4.49	125.43
MW-20A (Shallow)	5-Nov-07	129.92	5.19	124.73
MW-20A (Shallow)	19-May-08	129.92	4.99	124.93
MW-20A (Shallow)	10-Nov-08	129.92	5.67	124.25
MW-20A (Shallow)	4-May-09	129.92	3.47	126.45
MW-20A (Shallow)	16-Nov-09	129.92	3.88	126.04
MW-20A (Shallow)	19-Apr-10	129.92	3.25	126.67
MW-20A (Shallow)	4-Oct-10	129.92	6.44	123.48
MW-20A (Shallow)	12-Apr-11	129.92	2.67	127.25
MW-20A (Shallow)	1-Nov-11	129.92	6.40	123.52
MW-20A (Shallow)	30-Apr-12	129.92	3.09	126.83
MW-20A (Shallow)	12-Nov-12	129.92	5.85	124.07
MW-20A (Shallow)	8-Apr-13	129.92	3.27	126.65
MW-20A (Shallow)	18-Nov-13	129.92	6.11	123.81
MW-20A (Shallow)	28-Apr-14	129.92	3.11	126.81
MW-20A (Shallow)	17-Nov-14	129.92	5.35	124.57
MW-20B (Deep)	6-Nov-00	129.72	8.80	120.92
MW-20B (Deep)	29-Jan-01	129.72	5.26	124.46
MW-20B (Deep)	23-Apr-01	129.72	5.44	124.28
MW-20B (Deep)	27-Aug-01	129.72	8.93	120.79
MW-20B (Deep)	5-Nov-01	129.72	9.45	120.27
MW-20B (Deep)	7-Feb-02	129.72	1.62	128.10
MW-20B (Deep)	8-Apr-02	129.72	2.96	126.76
MW-20B (Deep)	22-Jul-02	129.72	9.49	120.23
MW-20B (Deep)	7-Oct-02	129.72	11.19	118.53
MW-20B (Deep)	24-Feb-03	129.72	2.78	126.94
MW-20B (Deep)	12-May-03	129.72	4.20	125.52
MW-20B (Deep)	18-Aug-03	129.72	12.08	117.64
MW-20B (Deep)	17-Nov-03	129.72	11.01	118.71
MW-20B (Deep)	19-Apr-04	129.72	5.57	124.15
MW-20B (Deep)	8-Nov-04	129.72	8.59	121.13
MW-20B (Deep)	23-May-05	129.72	4.55	125.17
MW-20B (Deep)	24-Oct-05	129.72	9.60	120.12
MW-20B (Deep)	8-May-06	129.72	6.10	123.62
MW-20B (Deep)	16-Oct-06	129.72	10.73	118.99
MW-20B (Deep)	7-May-07	129.72	4.75	124.97
MW-20B (Deep)	5-Nov-07	129.72	8.54	121.18
MW-20B (Deep)	19-May-08	129.72	9.24	120.48
MW-20B (Deep)	10-Nov-08	129.72	13.09	116.63
MW-20B (Deep)	4-May-09	129.72	4.44	125.28
MW-20B (Deep)	16-Nov-09	129.72	20.74	108.98
MW-20B (Deep)	19-Apr-10	129.72	3.07	126.65
MW-20B (Deep)	4-Oct-10	129.72	8.45	121.27
MW-20B (Deep)	12-Apr-11	129.72	1.71	128.01
MW-20B (Deep)	1-Nov-11	129.72	8.99	120.73
MW-20B (Deep)	30-Apr-12	129.72	2.55	127.17
MW-20B (Deep)	12-Nov-12	129.72	9.53	120.19
MW-20B (Deep)	8-Apr-13	129.72	3.22	126.50
MW-20B (Deep)	18-Nov-13	129.72	6.57	123.15

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
MW-20B (Deep)	28-Apr-14	129.72	2.77	126.95
MW-20B (Deep)	17-Nov-14	129.72	9.44	120.28
P-04A (Shallow)	4-Dec-93	141.15	16.67	124.48
P-04A (Shallow)	5-Jan-94	141.15	15.13	126.02
P-04A (Shallow)	22-Feb-94	141.15	15.33	125.82
P-04A (Shallow)	25-Mar-94	141.15	15.42	125.73
P-04A (Shallow)	26-Apr-94	141.15	16.22	124.93
P-04A (Shallow)	26-May-94	141.15	17.23	123.92
P-04A (Shallow)	1-Jul-94	141.15	18.07	123.08
P-04A (Shallow)	2-Aug-94	141.15	19.26	121.89
P-04A (Shallow)	2-Sep-94	141.15	19.67	121.48
P-04A (Shallow)	11-Nov-94	141.15	13.18	127.97
P-04A (Shallow)	21-Dec-94	141.15	12.79	128.36
P-04A (Shallow)	20-Jan-95	141.15	12.11	129.04
P-04A (Shallow)	23-Feb-95	141.15	13.64	127.51
P-04A (Shallow)	28-Mar-95	141.15	13.93	127.22
P-04A (Shallow)	14-Apr-95	141.15	13.91	127.24
P-04A (Shallow)	18-May-95	141.15	15.18	125.97
P-04A (Shallow)	20-Jun-95	141.15	15.23	125.92
P-04A (Shallow)	26-Jul-95	141.15	16.92	124.23
P-04A (Shallow)	22-Aug-95	141.15	17.87	123.28
P-04A (Shallow)	11-Sep-95	141.15	18.35	122.80
P-04A (Shallow)	24-Oct-95	141.15	15.37	125.78
P-04A (Shallow)	22-Nov-95	141.15	14.39	126.76
P-04A (Shallow)	20-Dec-95	141.15	13.01	128.14
P-04A (Shallow)	11-Jan-96	141.15	13.44	127.71
P-04A (Shallow)	16-Feb-96	141.15	13.33	127.82
P-04A (Shallow)	30-Mar-96	141.15	15.18	125.97
P-04A (Shallow)	9-Apr-96	141.15	14.88	126.27
P-04A (Shallow)	28-May-96	141.15	14.50	126.65
P-04A (Shallow)	28-Jun-96	141.15	16.62	124.53
P-04A (Shallow)	30-Jul-96	141.15	17.65	123.50
P-04A (Shallow)	29-Aug-96	141.15	18.34	122.81
P-04A (Shallow)	30-Sep-96	141.15	17.18	123.97
P-04A (Shallow)	31-Oct-96	141.15	17.33	123.82
P-04A (Shallow)	12-Dec-96	141.15	13.57	127.58
P-04A (Shallow)	22-Jan-97	141.15	13.61	127.54
P-04A (Shallow)	31-Mar-97	141.15	14.32	126.83
P-04A (Shallow)	19-May-97	141.15	15.54	125.61
P-04A (Shallow)	9-Sep-97	141.15	17.21	123.94
P-04A (Shallow)	18-Dec-97	141.15	13.12	128.03
P-04A (Shallow)	17-Mar-98	141.15	13.35	127.80
P-04A (Shallow)	8-Jun-98	141.15	15.03	126.12
P-04A (Shallow)	18-Aug-98	141.15	NR	---
P-04A (Shallow)	5-Nov-98	141.15	15.82	125.33
P-04A (Shallow)	22-Mar-99	141.15	13.73	127.42
P-04A (Shallow)	7-Sep-99	141.15	19.37	121.78
P-04A (Shallow)	9-Dec-99	141.15	11.49	129.66
P-04A (Shallow)	7-Feb-00	141.15	13.51	127.64

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-04A (Shallow)	29-May-00	141.15	14.78	126.37
P-04A (Shallow)	21-Aug-00	141.15	17.53	123.62
P-04A (Shallow)	6-Nov-00	141.15	15.83	125.32
P-04A (Shallow)	29-Jan-01	141.15	14.55	126.60
P-04A (Shallow)	23-Apr-01	141.15	15.44	125.71
P-04A (Shallow)	27-Aug-01	141.15	17.42	123.73
P-04A (Shallow)	5-Nov-01	141.15	15.30	125.85
P-04A (Shallow)	7-Feb-02	141.15	12.82	128.33
P-04A (Shallow)	8-Apr-02	141.15	15.07	126.08
P-04A (Shallow)	22-Jul-02	141.15	17.27	123.88
P-04A (Shallow)	7-Oct-02	141.15	18.00	123.15
P-04A (Shallow)	24-Feb-03	141.15	12.72	128.43
P-04A (Shallow)	12-May-03	141.15	14.25	126.90
P-04A (Shallow)	18-Aug-03	141.15	17.87	123.28
P-04A (Shallow)	17-Nov-03	141.15	16.00	125.15
P-04A (Shallow)	19-Apr-04	141.15	13.86	127.29
P-04A (Shallow)	8-Nov-04	141.15	13.91	127.24
P-04A (Shallow)	23-May-05	141.15	14.24	126.91
P-04A (Shallow)	24-Oct-05	141.15	21.10	120.05
P-04A (Shallow)	8-May-06	141.15	15.85	125.30
P-04A (Shallow)	16-Oct-06	141.15	19.06	122.09
P-04A (Shallow)	7-May-07	141.15	14.85	126.30
P-04A (Shallow)	5-Nov-07	141.15	16.01	125.14
P-04A (Shallow)	19-May-08	141.15	15.90	125.25
P-04A (Shallow)	10-Nov-08	141.15	14.47	126.68
P-04A (Shallow)	4-May-09	141.15	12.79	128.36
P-04A (Shallow)	16-Nov-09	141.15	13.27	127.88
P-04A (Shallow)	19-Apr-10	141.15	13.52	127.63
P-04A (Shallow)	4-Oct-10	141.15	16.89	124.26
P-04A (Shallow)	12-Apr-11	141.15	14.32	126.83
P-04A (Shallow)	1-Nov-11	141.15	16.91	124.24
P-04A (Shallow)	30-Apr-12	141.15	14.56	126.59
P-04A (Shallow)	12-Nov-12	141.15	14.05	127.10
P-04A (Shallow)	8-Apr-13	141.15	12.65	128.50
P-04A (Shallow)	Decommissioned on June 25, 2013			
P-04B (Deep)	4-Dec-93	141.65	21.63	120.02
P-04B (Deep)	5-Jan-94	141.65	16.98	124.67
P-04B (Deep)	22-Feb-94	141.65	16.37	125.28
P-04B (Deep)	25-Mar-94	141.65	15.45	126.20
P-04B (Deep)	26-Apr-94	141.65	16.74	124.91
P-04B (Deep)	26-May-94	141.65	19.02	122.63
P-04B (Deep)	1-Jul-94	141.65	21.32	120.33
P-04B (Deep)	2-Aug-94	141.65	23.73	117.92
P-04B (Deep)	2-Sep-94	141.65	23.51	118.14
P-04B (Deep)	13-Oct-94	141.65	13.59	128.06
P-04B (Deep)	11-Nov-94	141.65	19.99	121.66
P-04B (Deep)	21-Dec-94	141.65	15.46	126.19
P-04B (Deep)	20-Jan-95	141.65	13.50	128.15
P-04B (Deep)	23-Feb-95	141.65	13.80	127.85

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-04B (Deep)	28-Mar-95	141.65	14.64	127.01
P-04B (Deep)	14-Apr-95	141.65	15.84	125.81
P-04B (Deep)	18-May-95	141.65	17.63	124.02
P-04B (Deep)	20-Jun-95	141.65	19.01	122.64
P-04B (Deep)	26-Jul-95	141.65	21.58	120.07
P-04B (Deep)	22-Aug-95	141.65	21.95	119.70
P-04B (Deep)	11-Sep-95	141.65	22.00	119.65
P-04B (Deep)	24-Oct-95	141.65	21.39	120.26
P-04B (Deep)	22-Nov-95	141.65	18.80	122.85
P-04B (Deep)	20-Dec-95	141.65	13.61	128.04
P-04B (Deep)	11-Jan-96	141.65	14.52	127.13
P-04B (Deep)	16-Feb-96	141.65	12.95	128.70
P-04B (Deep)	30-Mar-96	141.65	16.00	125.65
P-04B (Deep)	9-Apr-96	141.65	16.90	124.75
P-04B (Deep)	28-May-96	141.65	16.09	125.56
P-04B (Deep)	28-Jun-96	141.65	18.62	123.03
P-04B (Deep)	30-Jul-96	141.65	21.09	120.56
P-04B (Deep)	29-Aug-96	141.65	21.95	119.70
P-04B (Deep)	30-Sep-96	141.65	21.39	120.26
P-04B (Deep)	31-Oct-96	141.65	21.47	120.18
P-04B (Deep)	12-Dec-96	141.65	14.63	127.02
P-04B (Deep)	22-Jan-97	141.65	13.75	127.90
P-04B (Deep)	31-Mar-97	141.65	14.60	127.05
P-04B (Deep)	19-May-97	141.65	17.48	124.17
P-04B (Deep)	9-Sep-97	141.65	20.97	120.68
P-04B (Deep)	18-Dec-97	141.65	15.42	126.23
P-04B (Deep)	17-Mar-98	141.65	14.17	127.48
P-04B (Deep)	8-Jun-98	141.65	16.95	124.70
P-04B (Deep)	18-Aug-98	141.65	21.02	120.63
P-04B (Deep)	5-Nov-98	141.65	20.61	121.04
P-04B (Deep)	22-Mar-99	141.65	13.27	128.38
P-04B (Deep)	7-Sep-99	141.65	22.32	119.33
P-04B (Deep)	9-Dec-99	141.65	16.01	125.64
P-04B (Deep)	7-Feb-00	141.65	13.86	127.79
P-04B (Deep)	29-May-00	141.65	17.16	124.49
P-04B (Deep)	21-Aug-00	141.65	22.25	119.40
P-04B (Deep)	6-Nov-00	141.65	21.21	120.44
P-04B (Deep)	29-Jan-01	141.65	17.77	123.88
P-04B (Deep)	23-Apr-01	141.65	17.80	123.85
P-04B (Deep)	27-Aug-01	141.65	21.37	120.28
P-04B (Deep)	5-Nov-01	141.65	21.85	119.80
P-04B (Deep)	7-Feb-02	141.65	13.97	127.68
P-04B (Deep)	8-Apr-02	141.65	15.38	126.27
P-04B (Deep)	22-Jul-02	141.65	21.75	119.90
P-04B (Deep)	7-Oct-02	141.65	23.45	118.20
P-04B (Deep)	24-Feb-03	141.65	15.19	126.46
P-04B (Deep)	12-May-03	141.65	16.63	125.02
P-04B (Deep)	18-Aug-03	141.65	24.37	117.28
P-04B (Deep)	17-Nov-03	141.65	23.34	118.31

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-04B (Deep)	19-Apr-04	141.65	18.02	123.63
P-04B (Deep)	8-Nov-04	141.65	21.02	120.63
P-04B (Deep)	23-May-05	141.65	17.29	124.36
P-04B (Deep)	24-Oct-05	141.65	22.00	119.65
P-04B (Deep)	8-May-06	141.65	18.69	122.96
P-04B (Deep)	16-Oct-06	141.65	23.09	118.56
P-04B (Deep)	7-May-07	141.65	17.29	124.36
P-04B (Deep)	5-Nov-07	141.65	20.48	121.17
P-04B (Deep)	19-May-08	141.65	21.60	120.05
P-04B (Deep)	10-Nov-08	141.65	25.34	116.31
P-04B (Deep)	4-May-09	141.65	16.94	124.71
P-04B (Deep)	16-Nov-09	141.65	20.26	121.39
P-04B (Deep)	19-Apr-10	141.65	15.51	126.14
P-04B (Deep)	4-Oct-10	141.65	20.85	120.80
P-04B (Deep)	12-Apr-11	141.65	14.20	127.45
P-04B (Deep)	1-Nov-11	141.65	21.41	120.24
P-04B (Deep)	30-Apr-12	141.65	15.02	126.63
P-04B (Deep)	12-Nov-12	141.65	22.05	119.60
P-04B (Deep)	8-Apr-13	141.65	15.85	125.80
P-04B (Deep)	Decommissioned on June 25, 2013			
P-05A	8-May-06	140.70	7.83	132.87
P-05A	16-Oct-06	140.70	16.20	124.50
P-05A	7-May-07	140.70	6.61	134.09
P-05A	5-Nov-07	140.70	12.01	128.69
P-05A	19-May-08	140.70	7.57	133.13
P-05A	10-Nov-08	140.70	8.04	132.66
P-05A	4-May-09	140.70	5.29	135.41
P-05A	16-Nov-09	140.70	4.41	136.29
P-05A	19-Apr-10	140.70	4.27	136.43
P-05A	4-Oct-10	140.70	14.29	126.41
P-05A	12-Apr-11	140.70	3.61	137.09
P-05A	1-Nov-11	140.70	13.91	126.79
P-05A	30-Apr-12	140.70	4.20	136.50
P-05A	12-Nov-12	140.70	15.54	125.16
P-05A	8-Apr-13	140.74	3.67	137.07
P-05A	18-Nov-13	140.74	18.11	122.63
P-05A	28-Apr-14	140.74	3.49	137.25
P-05A	17-Nov-14	140.74	15.28	125.46
P-06A	8-May-06	131.60	5.83	125.77
P-06A	16-Oct-06	131.60	11.12	120.48
P-06A	7-May-07	131.60	5.59	126.01
P-06A	5-Nov-07	131.60	7.86	123.74
P-06A	19-May-08	131.60	6.13	125.47
P-06A	10-Nov-08	131.60	9.56	122.04
P-06A	4-May-09	131.60	4.51	127.09
P-06A	16-Nov-09	131.60	8.91	122.69
P-06A	19-Apr-10	131.60	4.08	127.52

Table 1
Proposed Module 11 Area Groundwater Elevations
Riverbend Landfill

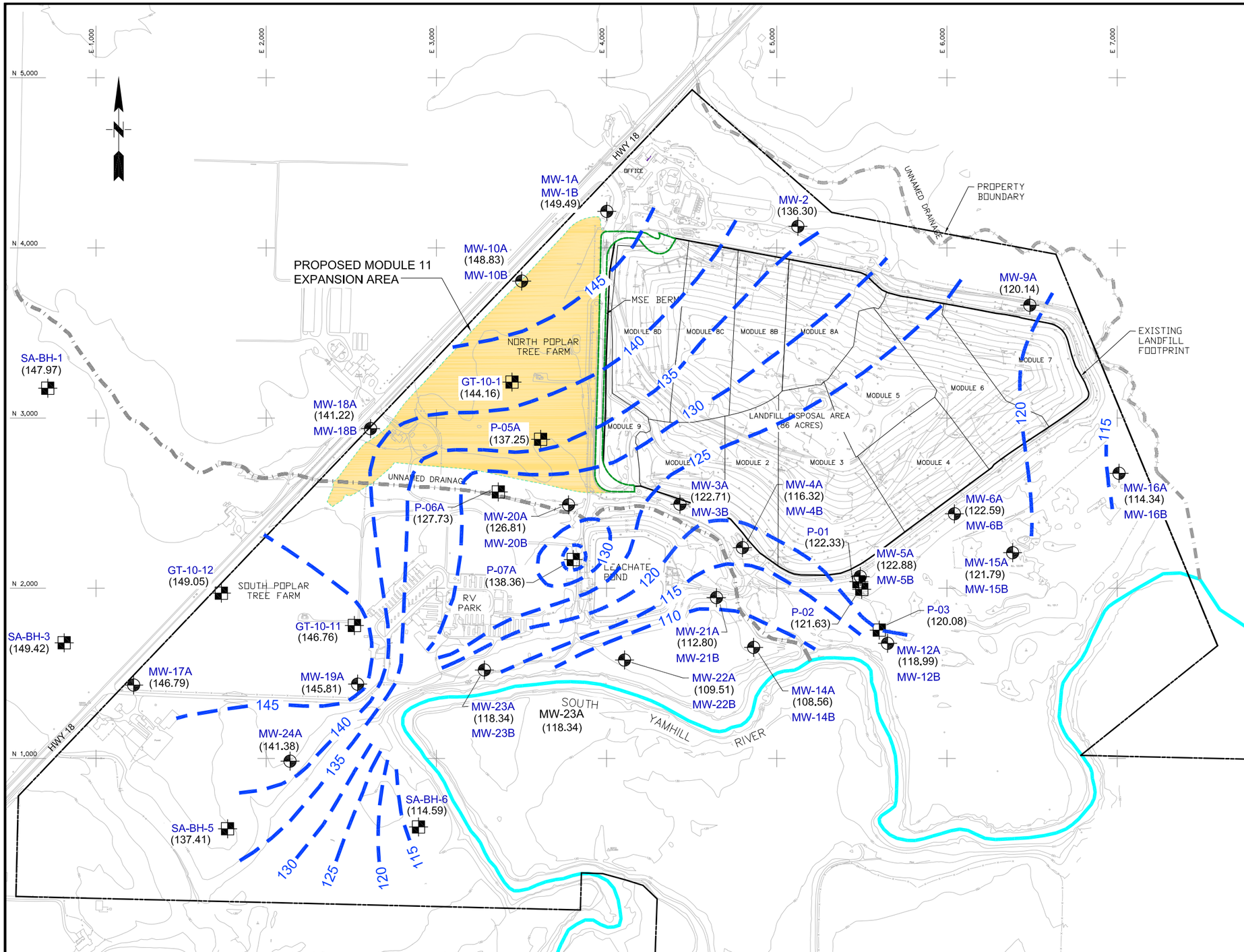
Monitoring Location	Measure Date	Reference Elevation [a] (ft.)	Depth to Water (ft.)	Ground Water Elevation (ft.)
P-06A	4-Oct-10	131.60	8.62	122.98
P-06A	12-Apr-11	131.60	3.61	127.99
P-06A	1-Nov-11	131.60	9.52	122.08
P-06A	30-Apr-12	131.60	4.15	127.45
P-06A	12-Nov-12	131.60	8.03	123.57
P-06A	8-Apr-13	131.58	4.09	127.49
P-06A	18-Nov-13	131.58	5.95	125.63
P-06A	28-Apr-14	131.58	3.85	127.73
P-06A	17-Nov-14	131.58	5.87	125.71
GT10-1	4-Oct-10	145.56	15.46	130.10
GT10-1	12-Apr-11	145.56	1.55	144.01
GT10-1	1-Nov-11	145.56	15.85	129.71
GT10-1	30-Apr-12	145.56	2.02	143.54
GT10-1	12-Nov-12	145.56	18.45	127.11
GT10-1	8-Apr-13	145.56	1.76	143.80
GT10-1	18-Nov-13	145.56	17.32	128.24
GT10-1	28-Apr-14	145.56	1.40	144.16
GT10-1	17-Nov-14	145.56	14.51	131.05

NOTE:

NR = no reading; --- = null value.

[a] All site monitoring wells and piezometers were resurveyed in July 2013. All reference elevations remained the same except for P-05A, P-06A, and P-07A.

Figures



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Tributary Stream
- Proposed Expansion Area
- Mechanically Stabilized Earthen (MSE) Berm

EXISTING MONITORING LOCATIONS

- MW-19A — Groundwater Monitoring Well
- P-05A — Piezometer
- (120.14) — Shallow Water - Bearing Zone Well Groundwater Elevation in Feet Above Mean Sea Level on April 28, 2014
- 145 — Potentiometric Surface Contours for Shallow Water - Bearing Zone (Feet Above Mean Sea Level)

SOURCE:

1) Existing contours based on aerial topography provided by Miller Creek Aerial Mapping, date of photograph March 22, 2014. Contours are based on NAVD 88.

2) Horizontal Datum: Assumed
Iron pipe at scale house = N4000.000 E4000.000
Iron pipe at maintenance building = N2825.685 E4000.000

NOTES:

1) Monitoring wells and piezometers with "A" designation are screened in the shallow (Silt-Clay) water-bearing zone, and monitoring wells and piezometers with "B" designation are screened in the deeper (Sand-Gravel) water-bearing zone.

2) Piezometers with "GT" and "SA-BH" designations are screened in the shallow (Silt-Clay) water-bearing zone.

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WASTE MANAGEMENT

0 600 1200
SCALE IN FEET

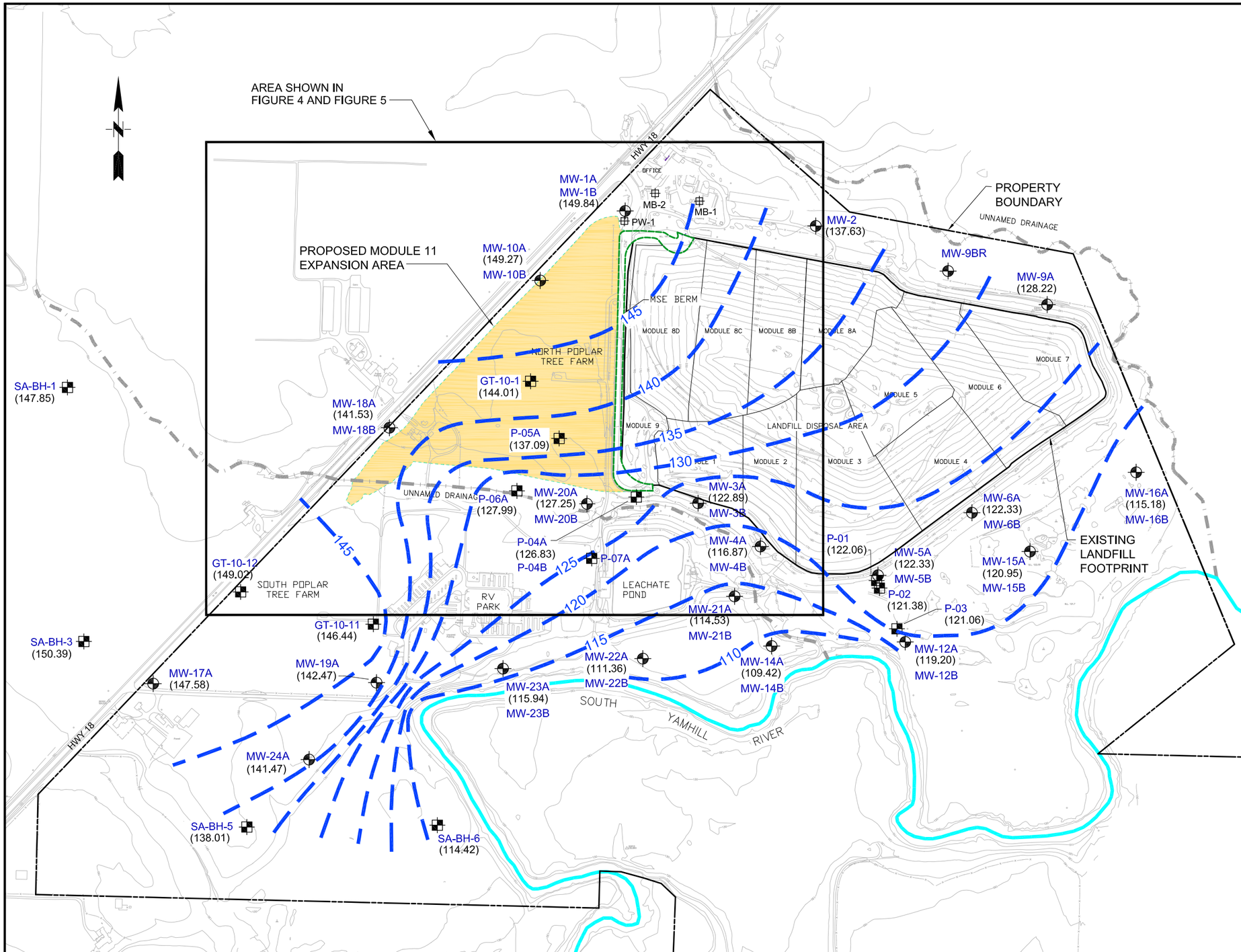
PROJECT NO. 04215015.00	DES BY D.L.
SCALE AS SHOWN	CHK BY L.C.
CAD FILE FIGURE 1	APP BY L.C.

SHALLOW WATER - BEARING ZONE
POTENTIOMETRIC SURFACE CONTOURS
(APRIL 28, 2014)

RIVERBEND LANDFILL
McMINNVILLE, OREGON

DATE APRIL 2015

FIGURE 1



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Unnamed Drainage
- Proposed Expansion Area
- Mechanically Stabilized Earthen (MSE) Berm

EXISTING MONITORING LOCATIONS

- MW-19A — Groundwater Monitoring Well
- P-05A — Piezometer
- MB-2 — On-Site Water Well
- (149.27) — Shallow Water - Bearing Zone Well Groundwater Elevation in Feet Above Mean Sea Level on April 12, 2011
- 145 — Potentiometric Surface Contours for Shallow Water - Bearing Zone (Feet Above Mean Sea Level)

SOURCE:

1) Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.

NOTES:

1) Monitoring wells and piezometers with "A" designation are screened in the shallow (Silt-Clay) water-bearing zone, and monitoring wells and piezometers with "B" designation are screened in the deeper (Sand-Gravel) water-bearing zone.

2) Piezometers with "GT" and "SA-BH" designations are screened in the shallow (Silt-Clay) water-bearing zone.

3) This figure shows the groundwater monitoring network as it existed in April 2011.

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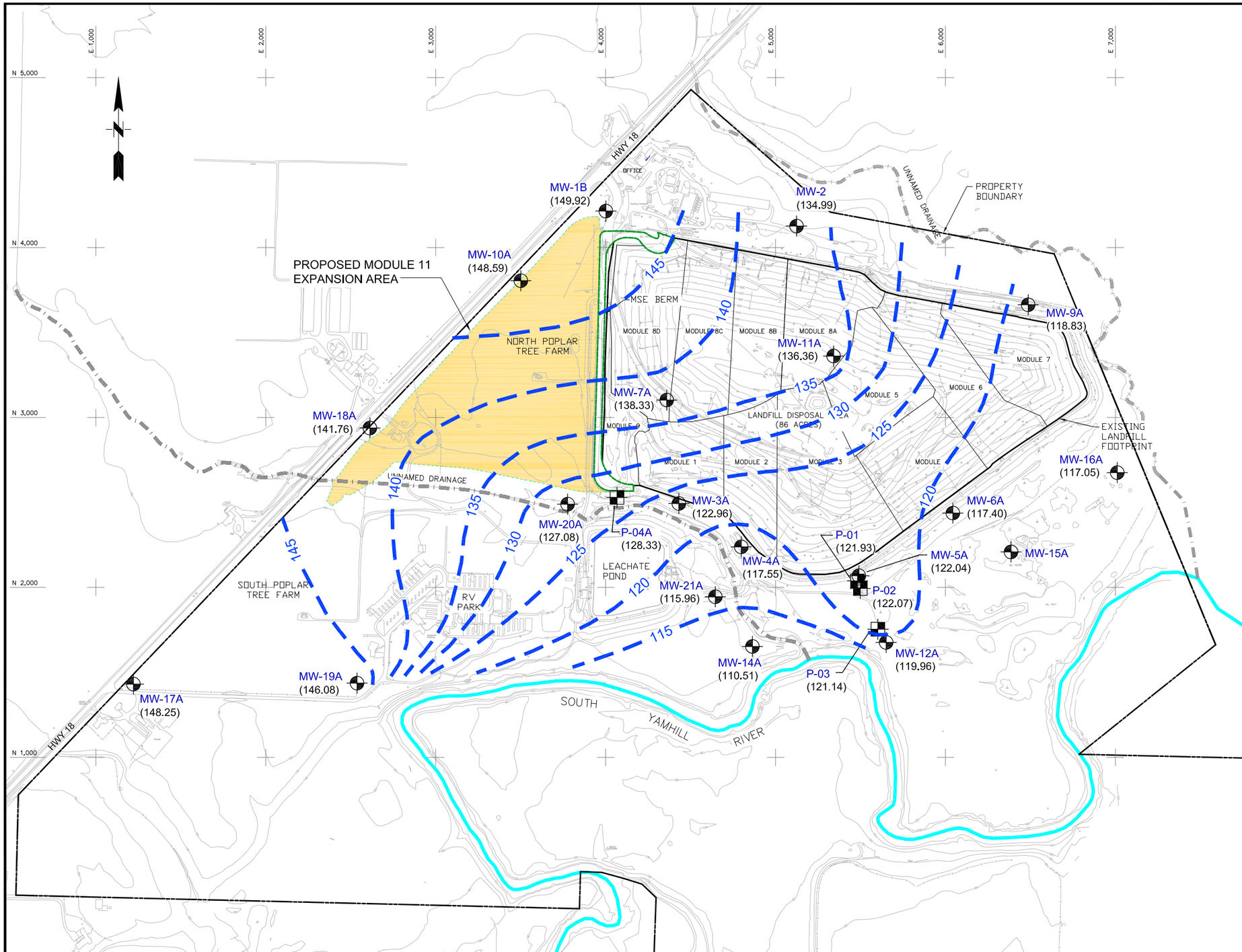
WASTE MANAGEMENT

0 600 1200
SCALE IN FEET

PROJECT NO. 04215015.00	DES BY D.L.	SHALLOW WATER - BEARING ZONE POTENTIOMETRIC SURFACE CONTOURS (APRIL 12, 2011) RIVERBEND LANDFILL McMINNVILLE, OREGON	DATE APRIL 2015
SCALE AS SHOWN	CHK BY L.C.		FIGURE 2
CAD FILE FIGURE 2	APP BY L.C.		



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Tributary Stream
- Proposed Expansion Area
- Mechanically Stabilized Earthen (MSE) Berm

EXISTING MONITORING LOCATIONS

- MW-9A — Groundwater Monitoring Well
- P-02 — Piezometer
- (149.92) — Shallow Water - Bearing Zone Well Groundwater Elevation in Feet Above Mean Sea Level on February 7, 2002
- 145 — Potentiometric Surface Contours for Shallow Water - Bearing Zone (Feet Above Mean Sea Level)

SOURCE:

1) Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.

2) This figure shows the groundwater monitoring network as it existed in February 2002.

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WASTE MANAGEMENT

0 600 1200
SCALE IN FEET

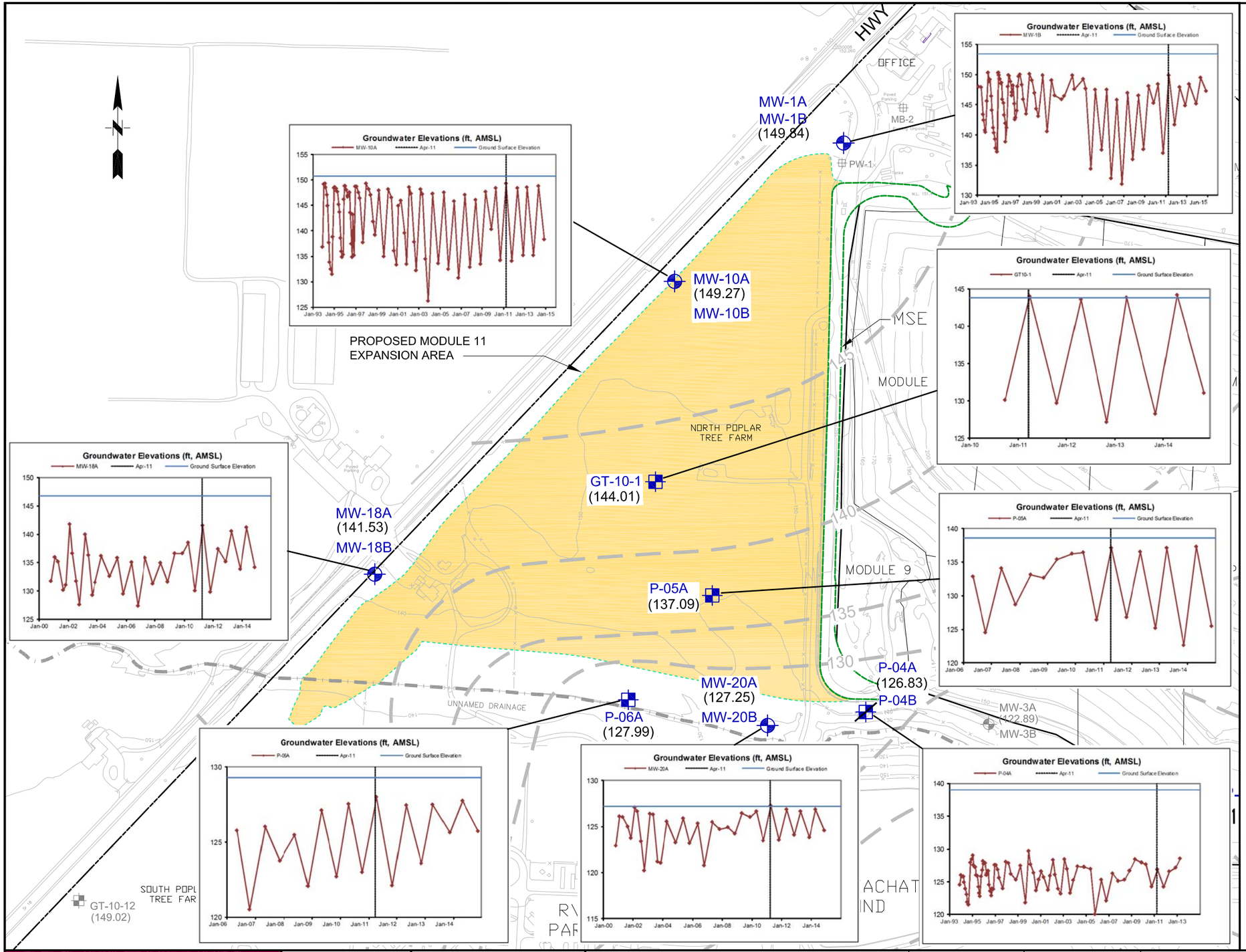
PROJECT NO. 04215015.00	DES BY D.L.
SCALE AS SHOWN	CHK BY L.C.
CAD FILE FIGURE 3	APP BY L.C.

SHALLOW WATER - BEARING ZONE POTENTIOMETRIC SURFACE CONTOURS (FEBRUARY 7, 2002)

RIVERBEND LANDFILL
McMINNVILLE, OREGON

DATE APRIL 2015

FIGURE 3



LEGEND:

- Topographic Contours (Surveyed)
- Topographic Contours (USGS)
- Property Boundary
- Flow Line - Yamhill River
- Flow Line - Unnamed Drainage
- Proposed Expansion Area
- Mechanically Stabilized Earthen (MSE) Berm

EXISTING MONITORING LOCATIONS

- MW-20A — Groundwater Monitoring Well
- P-05A — Piezometer
- MB-2 — On-Site Water Well
- P-04A — Decommissioned (Former) Piezometer
- (149.27) — Shallow Water - Bearing Zone Well Groundwater Elevation in Feet Above Mean Sea Level on April 12, 2011
- 145 — Potentiometric Surface Contours for Shallow Water - Bearing Zone on April 12, 2011 (Feet Above Mean Sea Level)

SOURCE:

1) Topographic base map prepared by Miller Creek Aerial Mapping, using photogrammetric survey methods, date of photograph March 22, 2014. Contours are based on NAVD 88.

NOTES:

1) Monitoring wells and piezometers with "A" designation are screened in the shallow (Silt-Clay) water-bearing zone, and monitoring wells and piezometers with "B" designation are screened in the deeper (Sand-Gravel) water-bearing zone.

2) Piezometers with "GT" and "SA-BH" designations are screened in the shallow (Silt-Clay) water-bearing zone. .

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WASTE MANAGEMENT

0 300 600
SCALE IN FEET

PROJECT NO.	DES BY	DATE
04215015.00	D.L.	APRIL 2015
SCALE: AS SHOWN	CHK BY: L.C.	FIGURE: 4
CAD FILE: FIGURE 4	APP BY: L.C.	

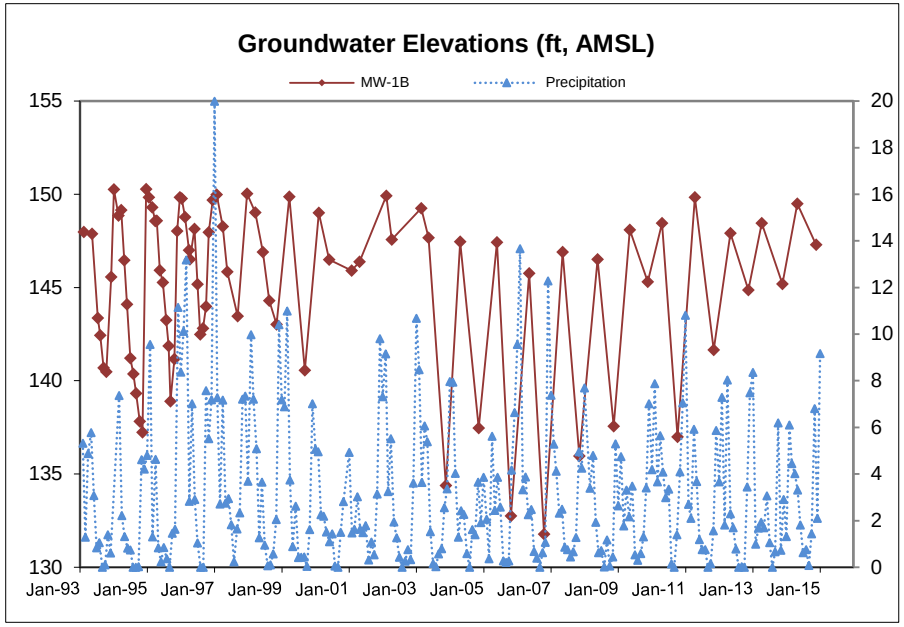
SHALLOW WATER - BEARING ZONE
GROUNDWATER ELEVATION HYDROGRAPHS

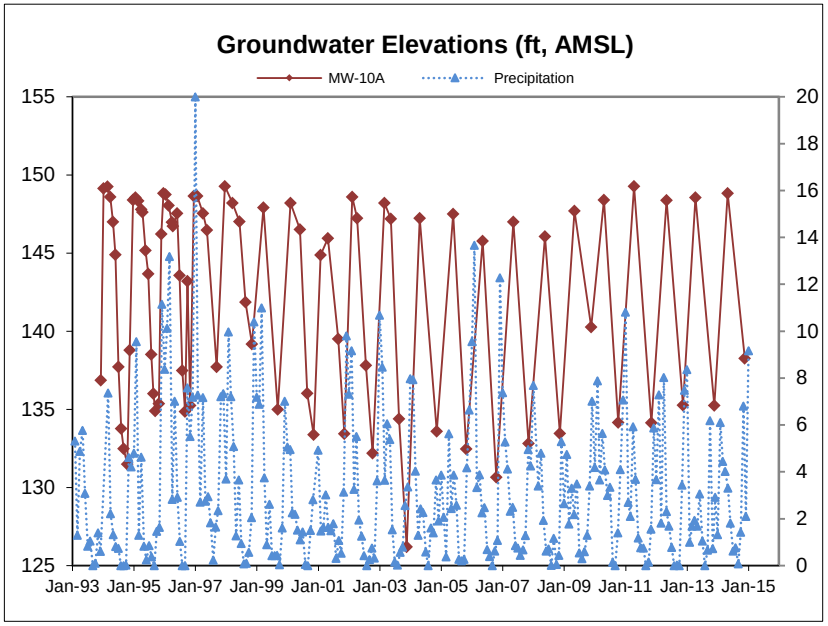
RIVERBEND LANDFILL
McMINNVILLE, OREGON

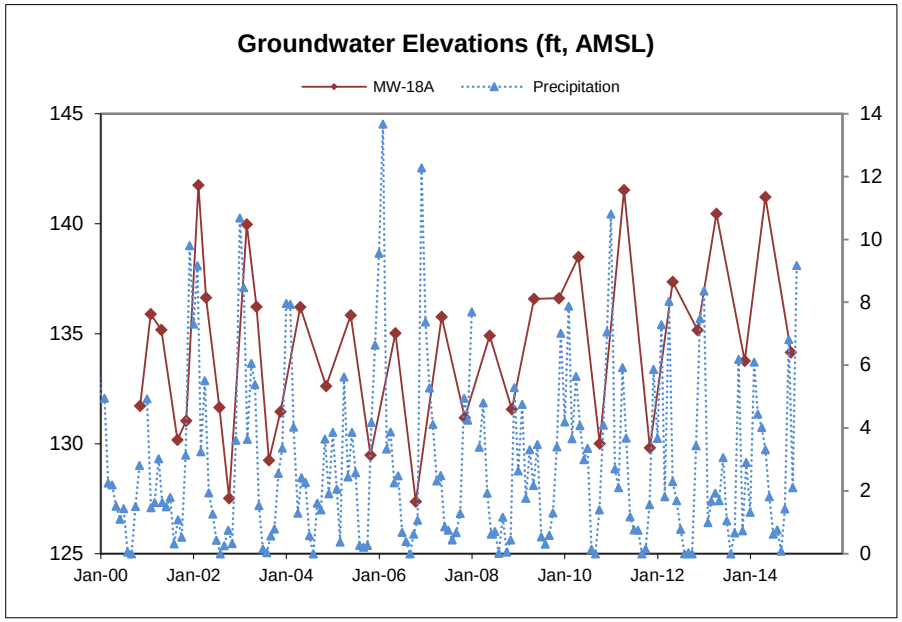
Attachment 1

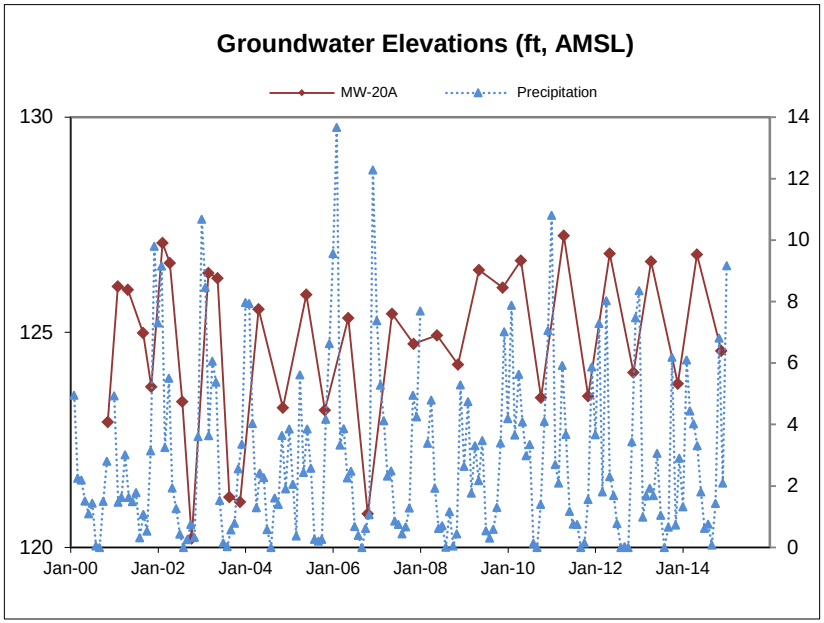
Groundwater Elevation Hydrographs

Attachment 1
Proposed Module 11 Area Groundwater Elevation Hydrographs With Precipitation
Riverbend Landfill



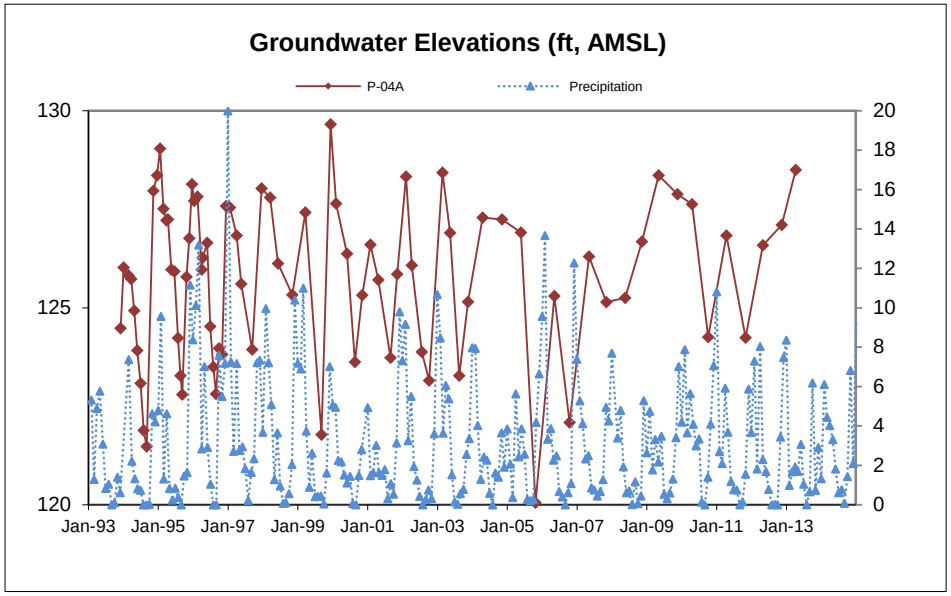


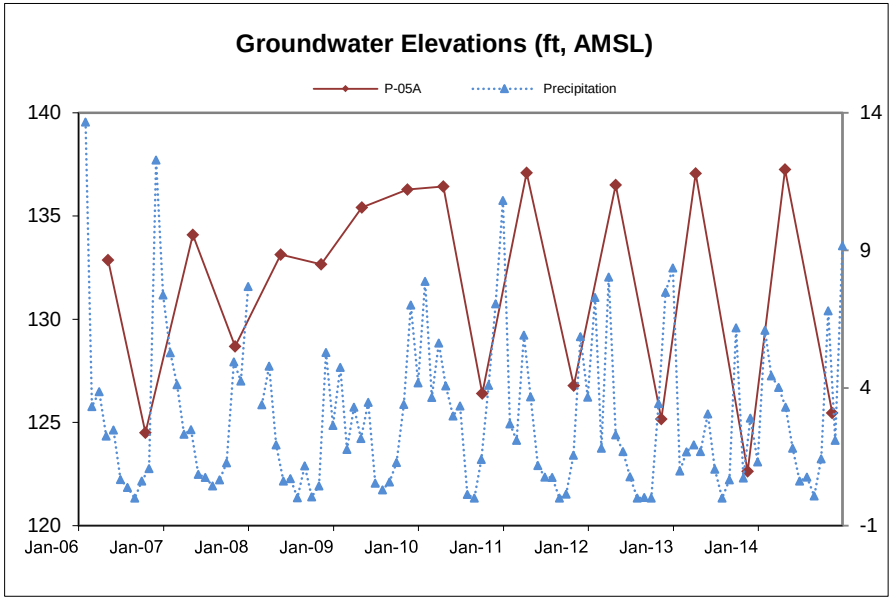


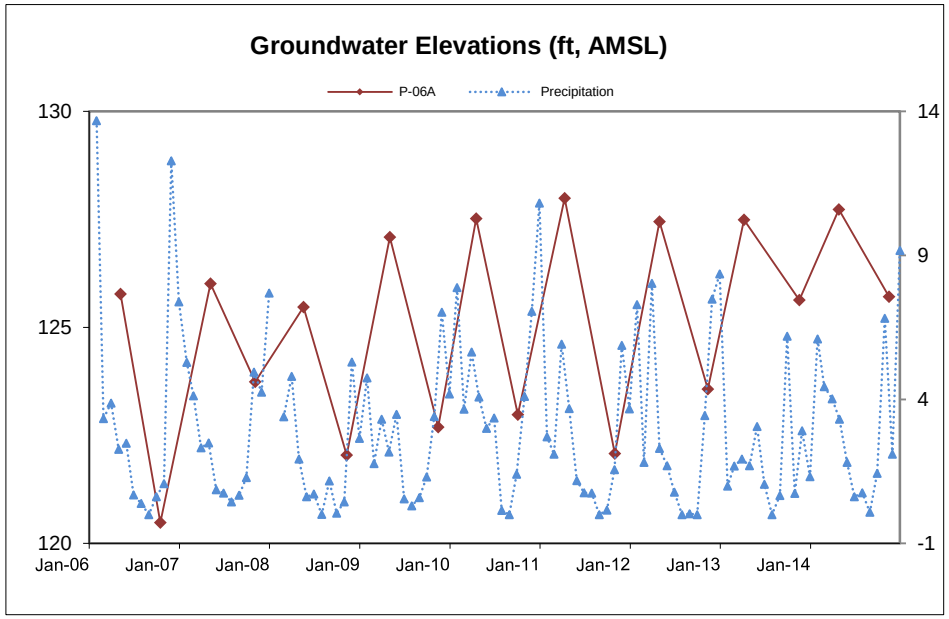


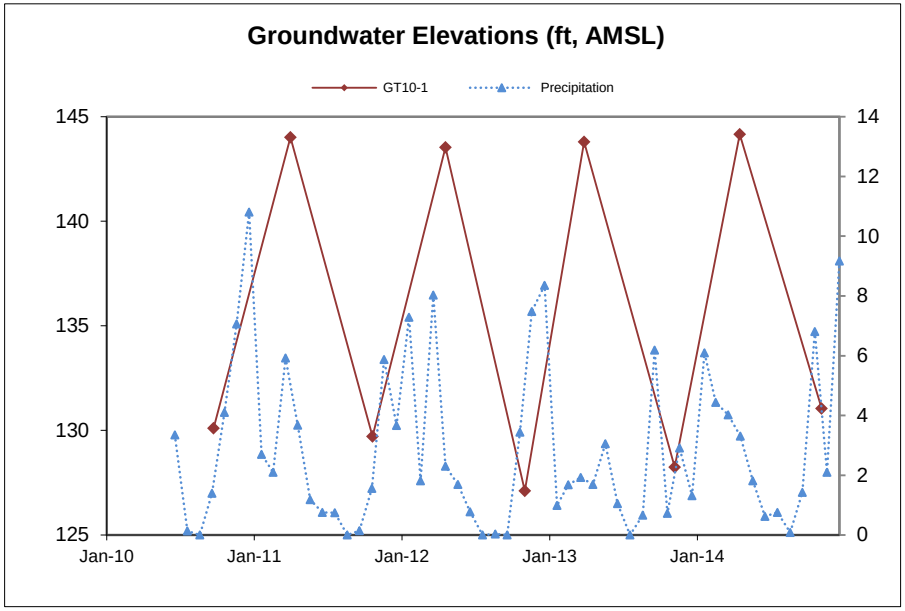
Notes:
Left axis, groundwater elevation in feet above mean sea level (local datum). Right axis, precipitation in inches.

Attachment 1
Proposed Module 11 Area Groundwater Elevation Hydrographs With Precipitation
Riverbend Landfill



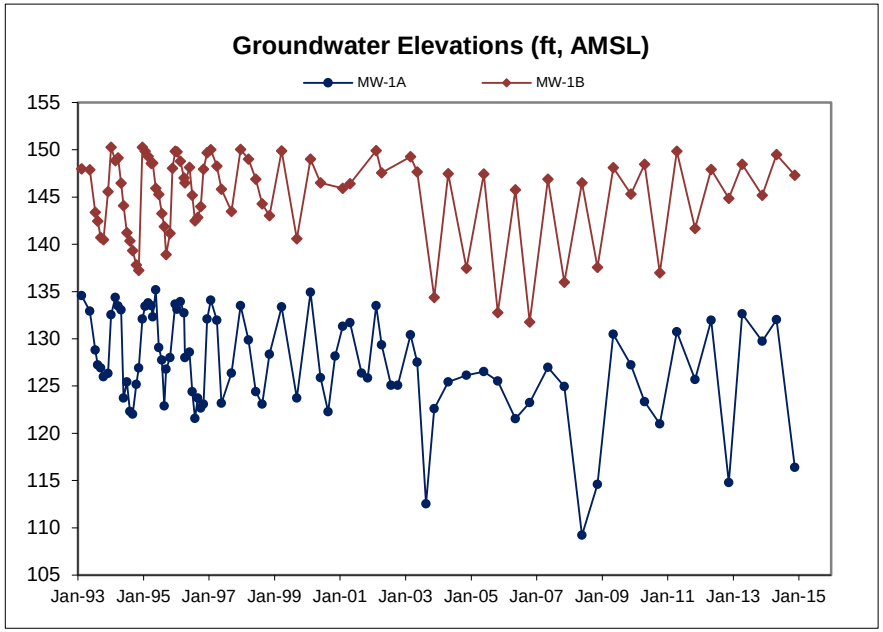


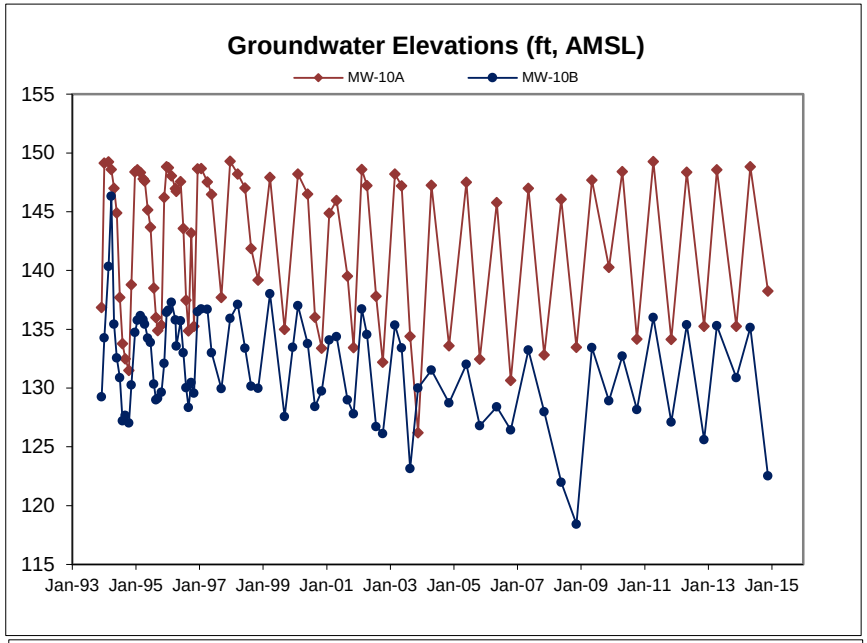


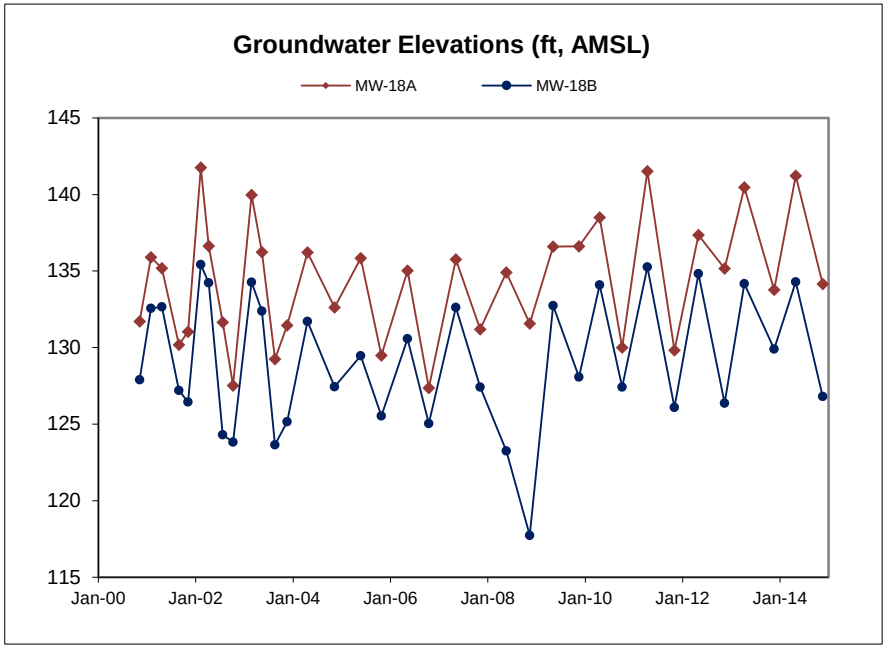


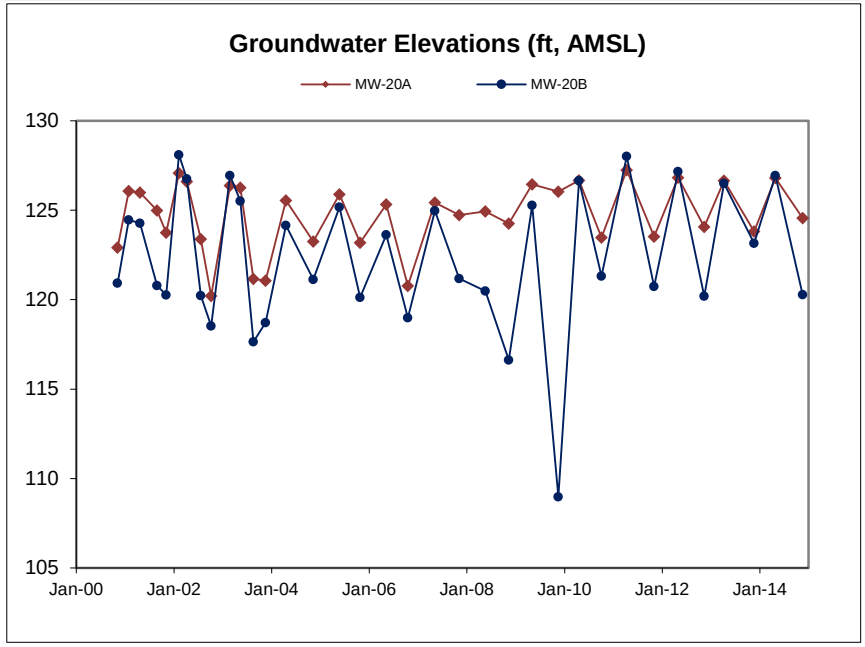
Notes:
Left axis, groundwater elevation in feet above mean sea level (local datum). Right axis, precipitation in inches.

Attachment 1
Proposed Module 11 Area Groundwater Elevation Hydrographs (Shallow and Deep Zones)
Riverbend Landfill



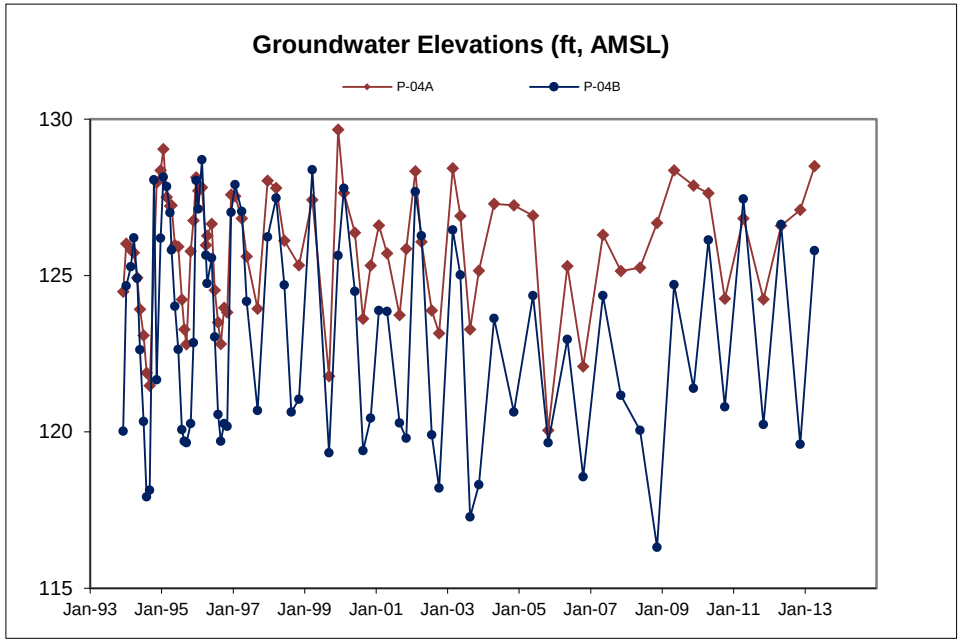






Notes: Groundwater elevation in feet above mean sea level (local datum) (ft, AMSL).

Attachment 1
Proposed Module 11 Area Groundwater Elevation Hydrographs (Shallow and Deep Zones)
Riverbend Landfill



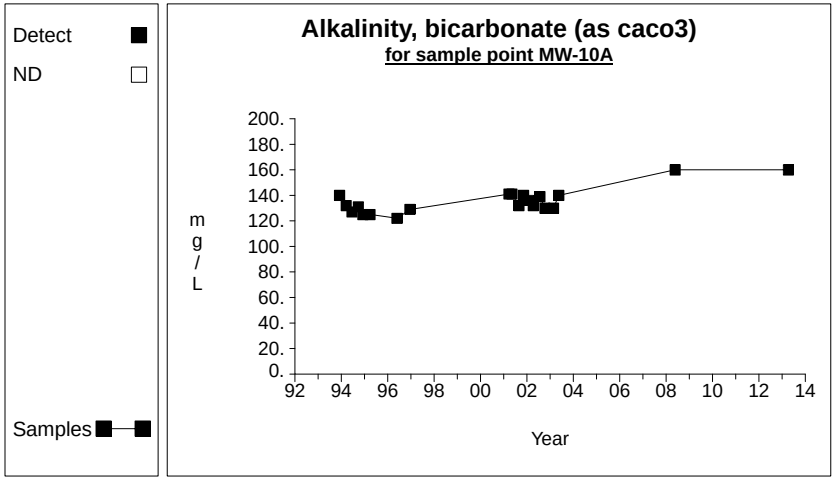
Notes: Groundwater elevation in feet above mean sea level (local datum) (ft, AMSL).

APPENDIX G

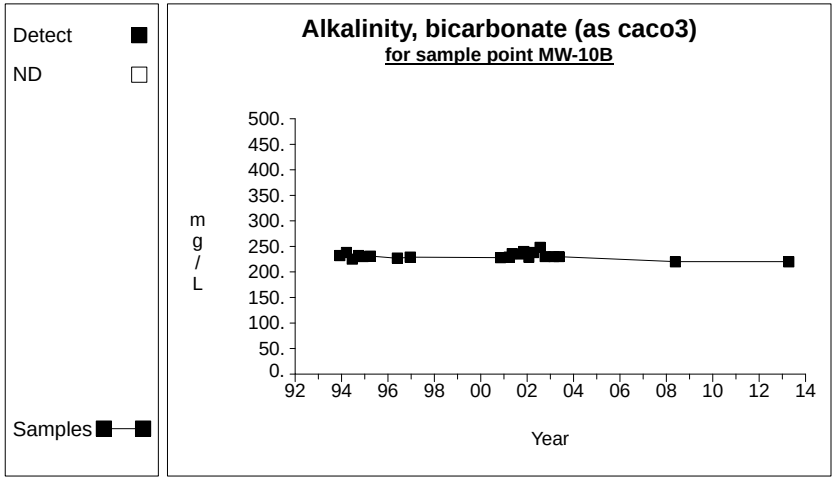
Groundwater Time-Concentration Graphs and Geochchemical Diagrams for Proposed Module 11 Area Monitoring Wells and Piezometers

Groundwater Time-Concentration Graphs

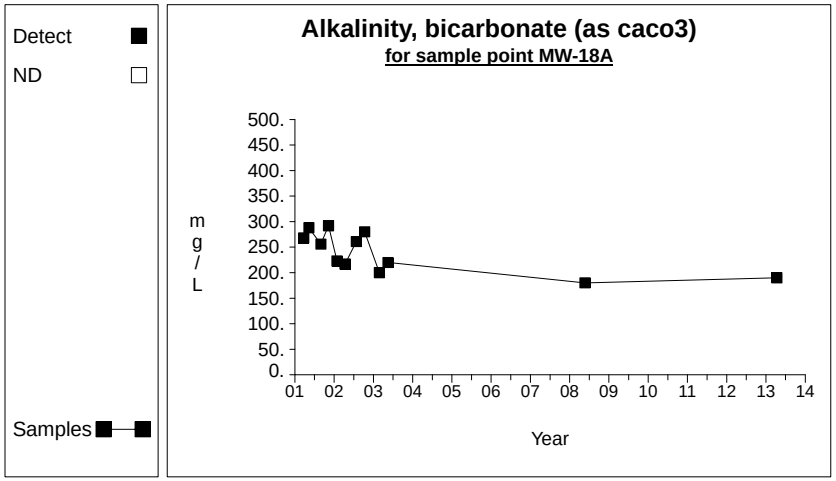
Time Series



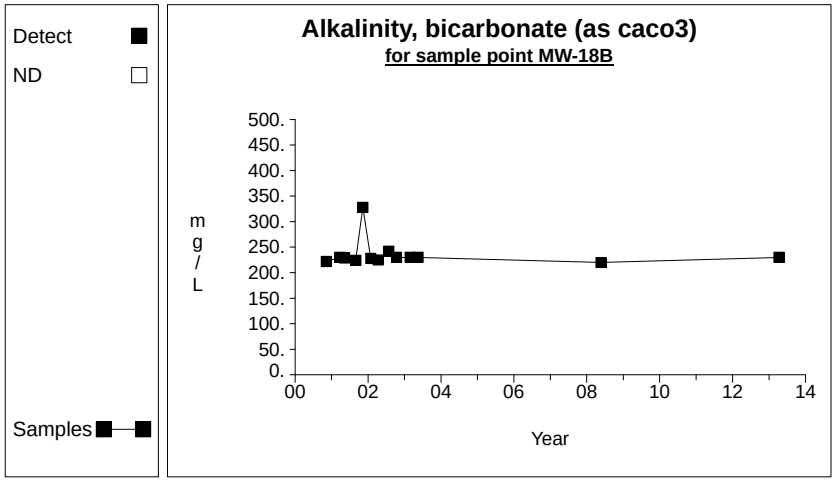
Graph 1



Graph 2

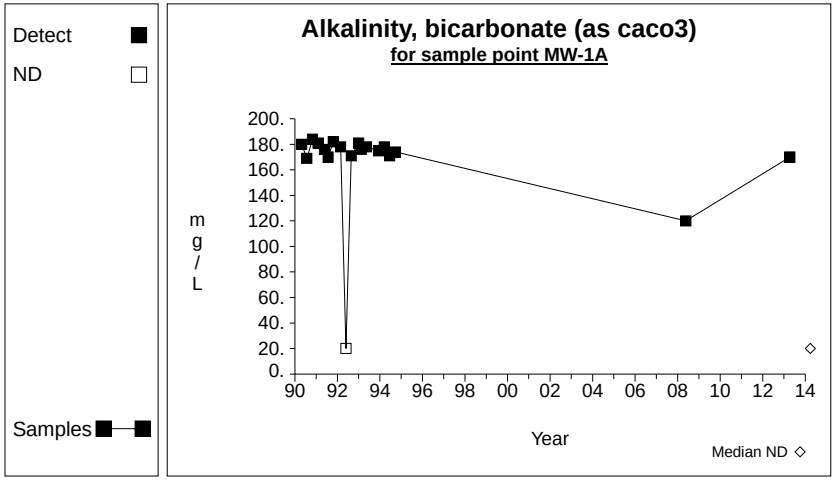


Graph 3

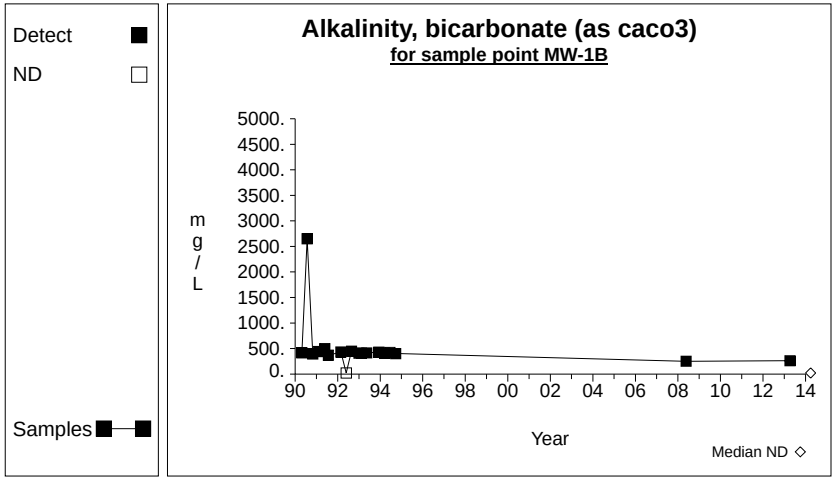


Graph 4

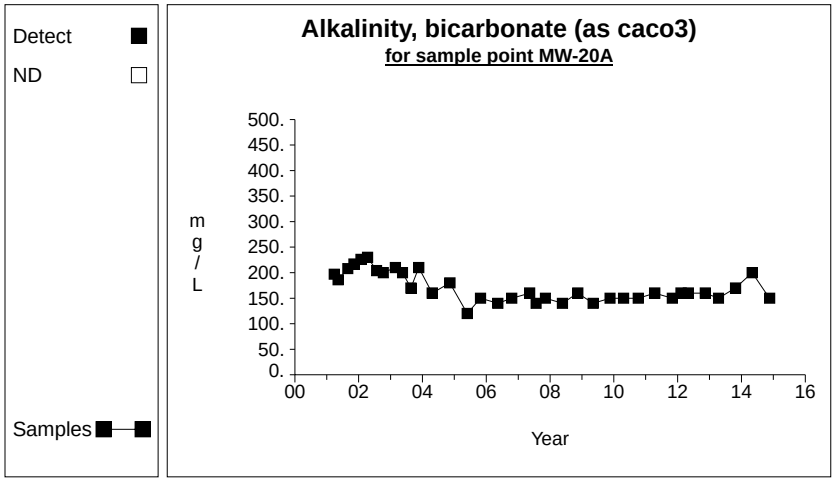
Time Series



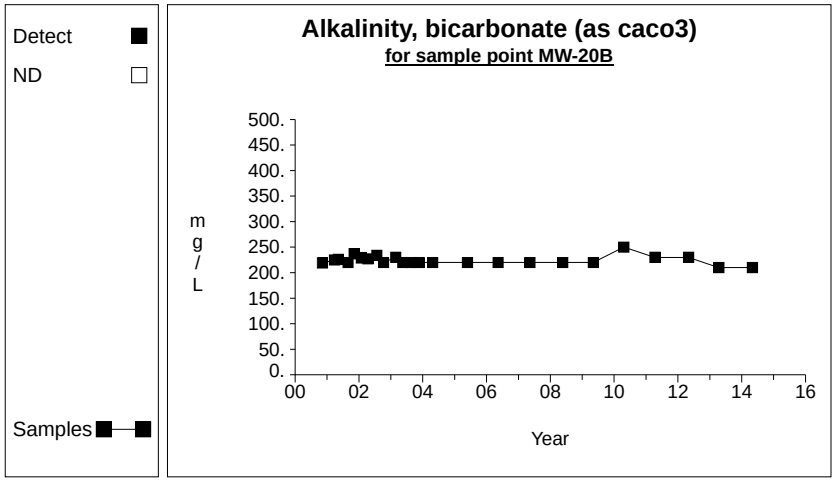
Graph 5



Graph 6

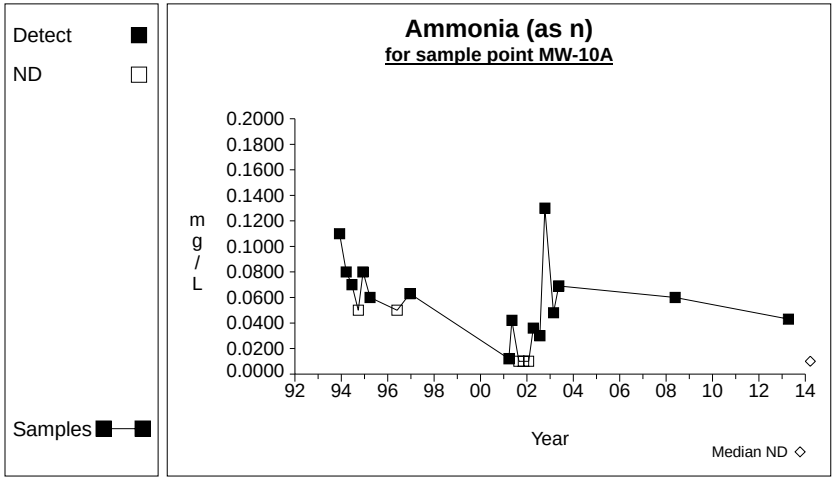


Graph 7

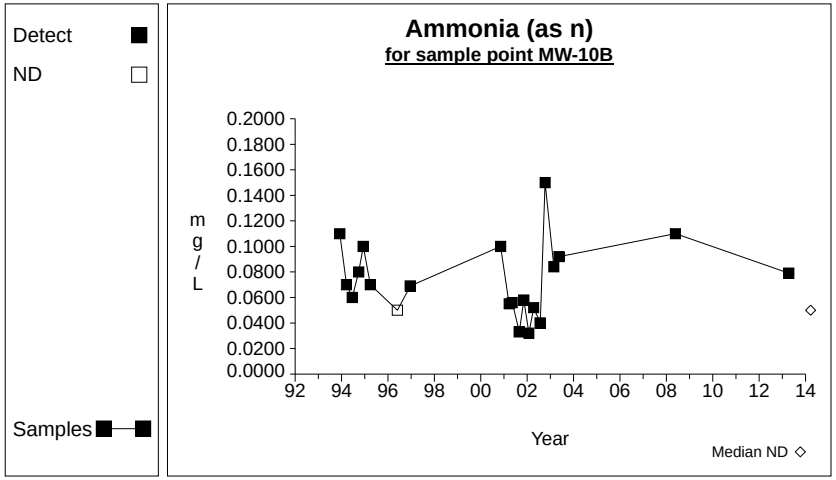


Graph 8

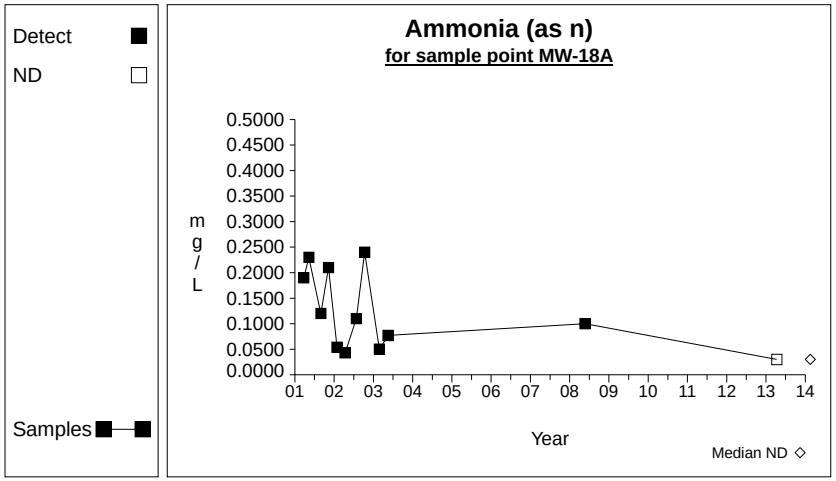
Time Series



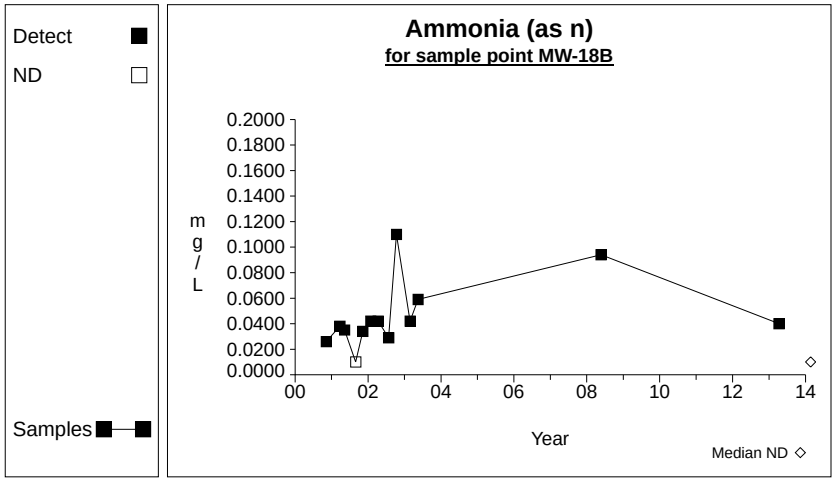
Graph 9



Graph 10

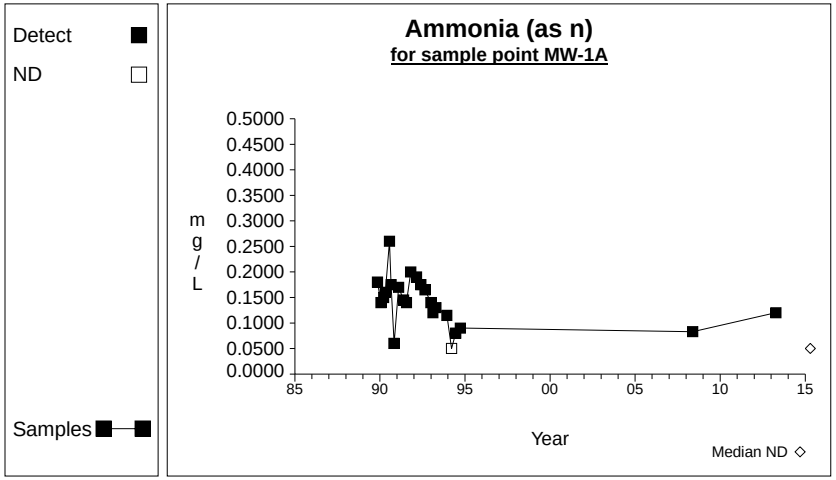


Graph 11

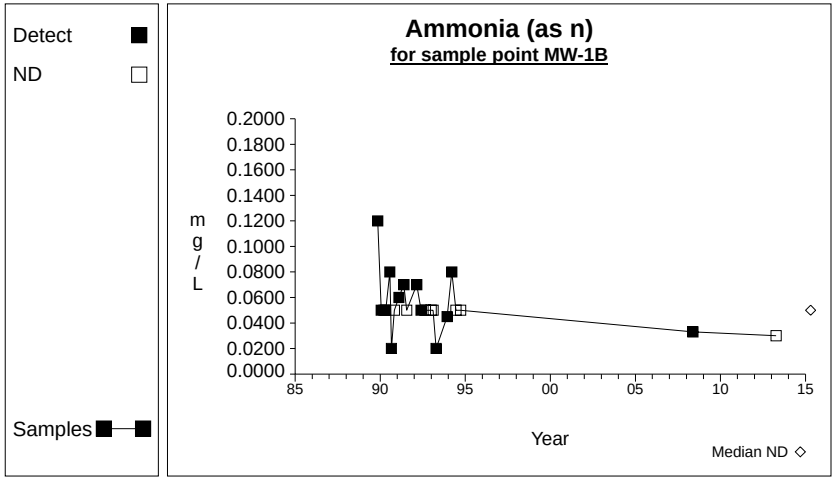


Graph 12

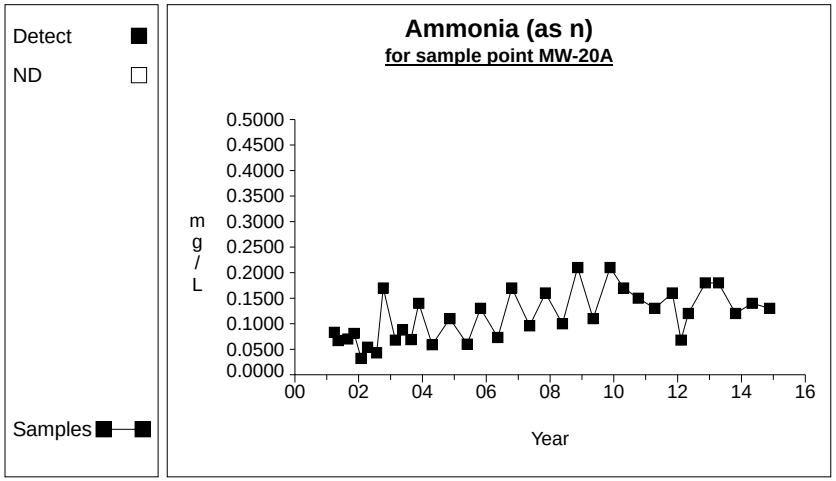
Time Series



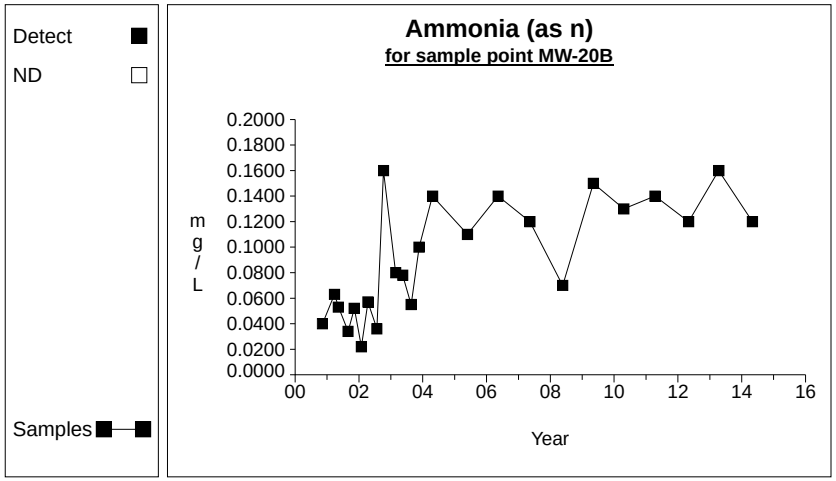
Graph 13



Graph 14

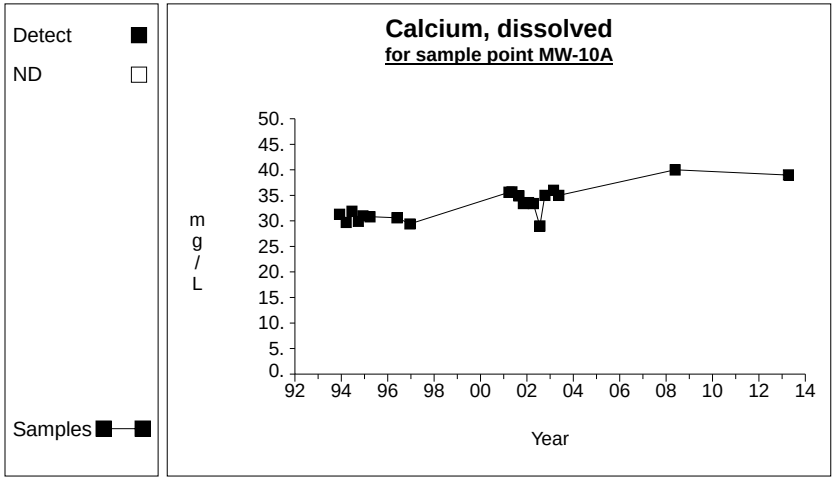


Graph 15

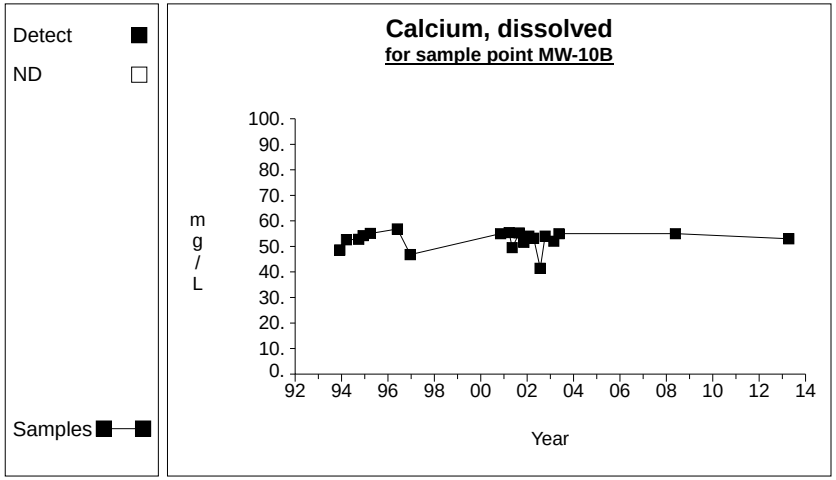


Graph 16

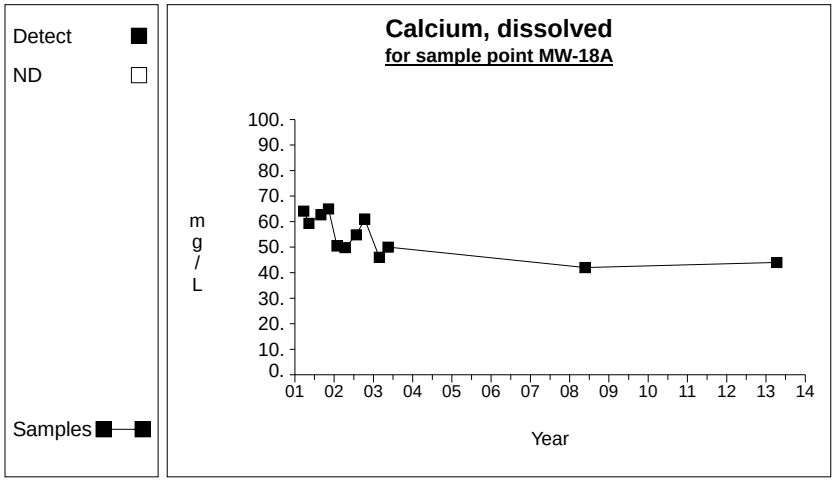
Time Series



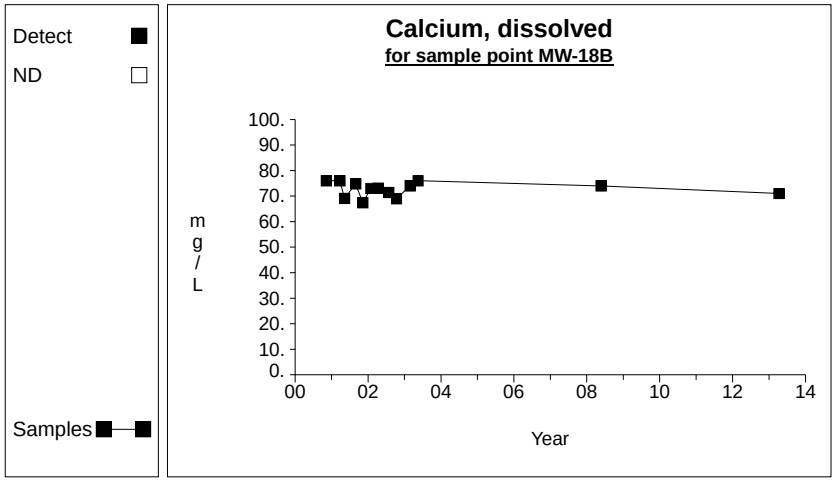
Graph 17



Graph 18

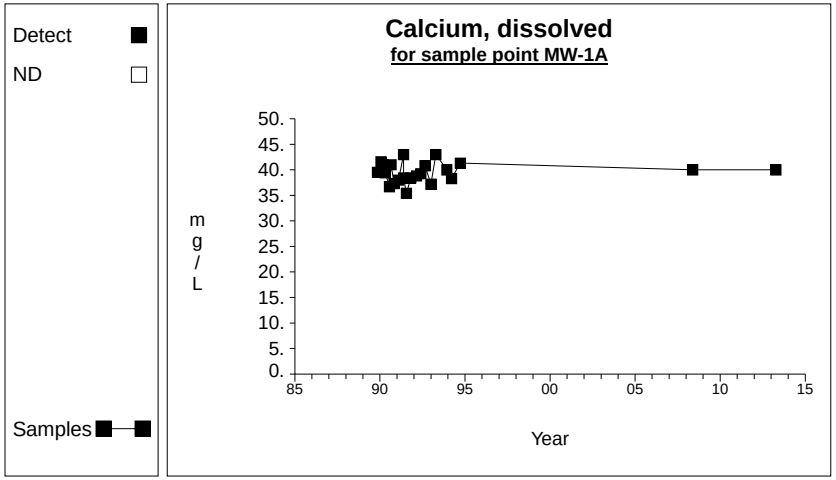


Graph 19

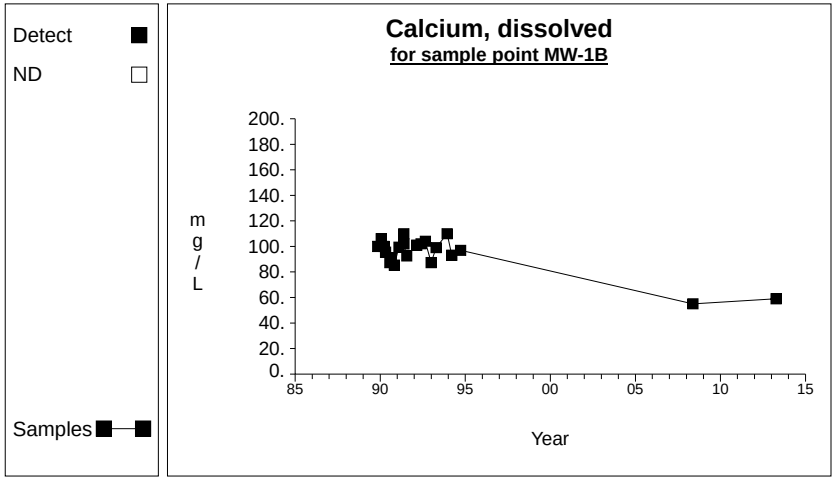


Graph 20

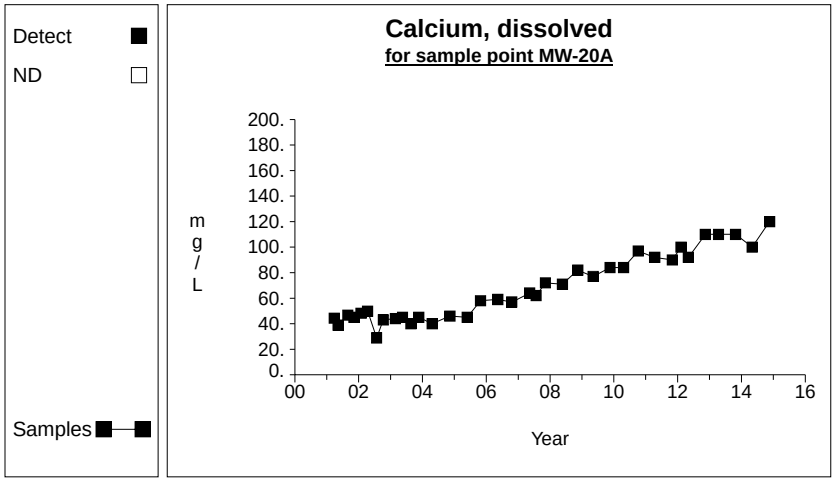
Time Series



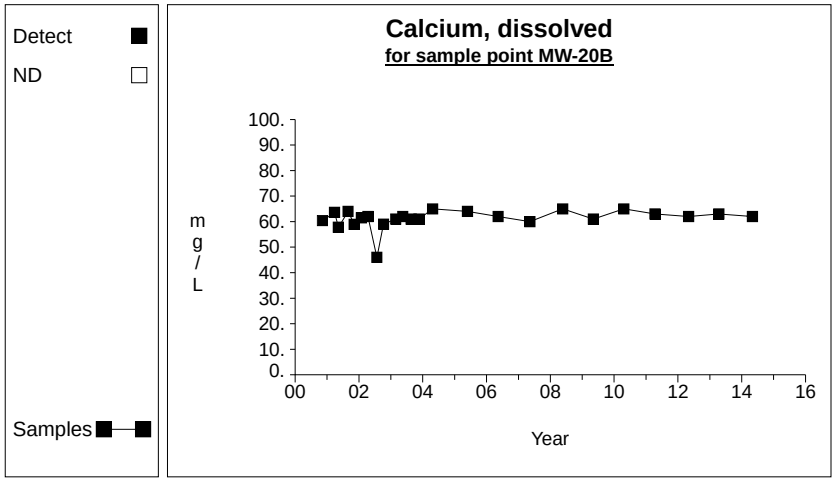
Graph 21



Graph 22

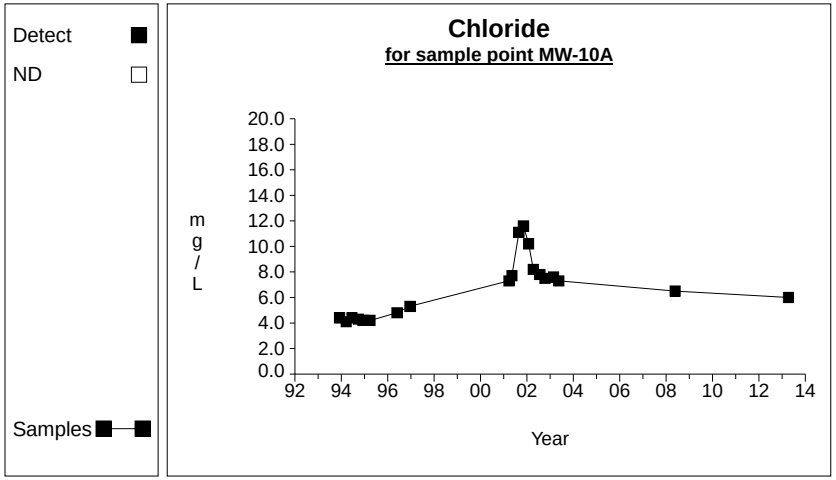


Graph 23

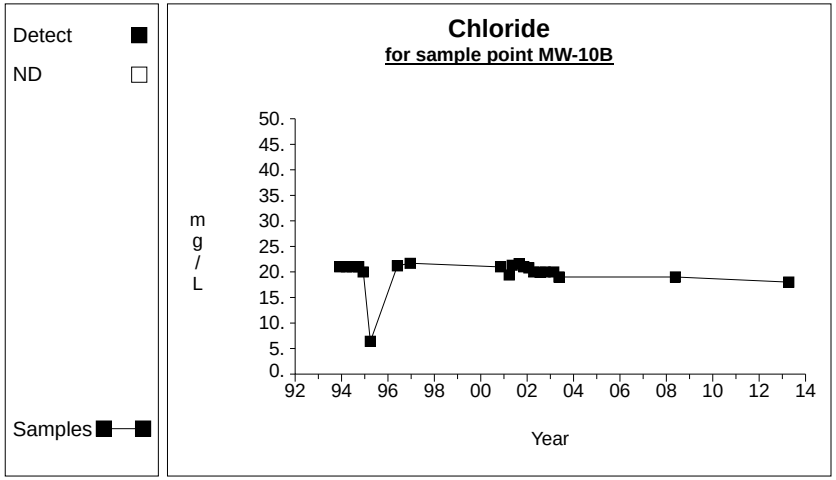


Graph 24

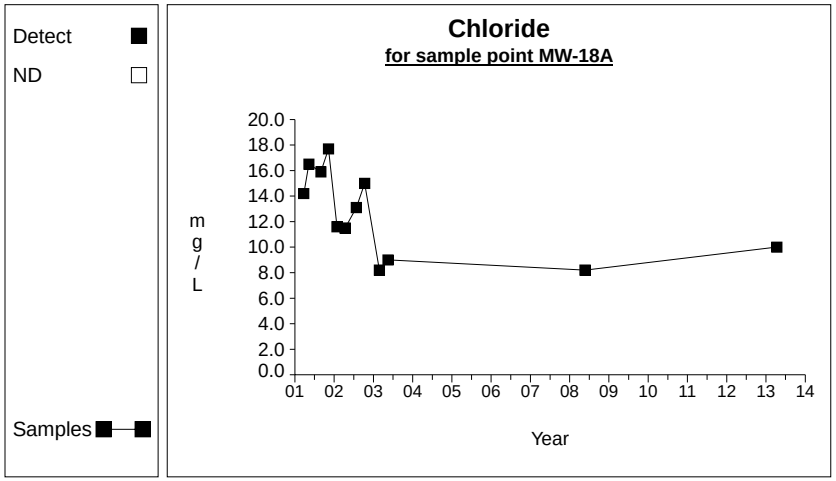
Time Series



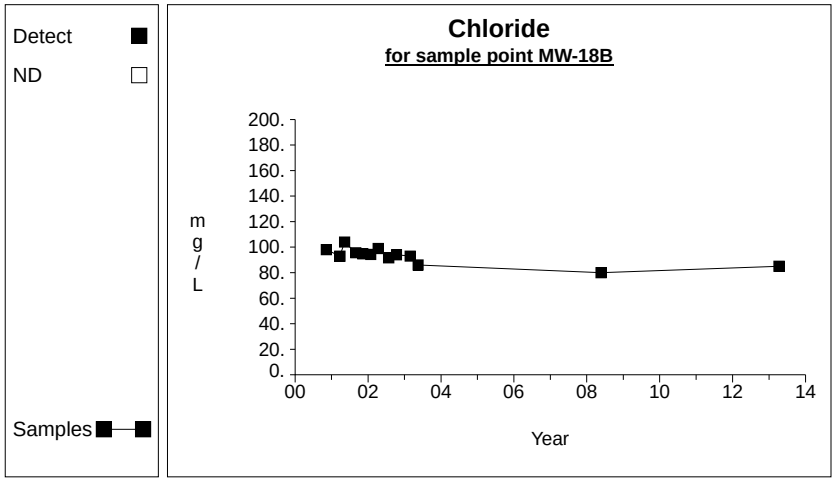
Graph 25



Graph 26

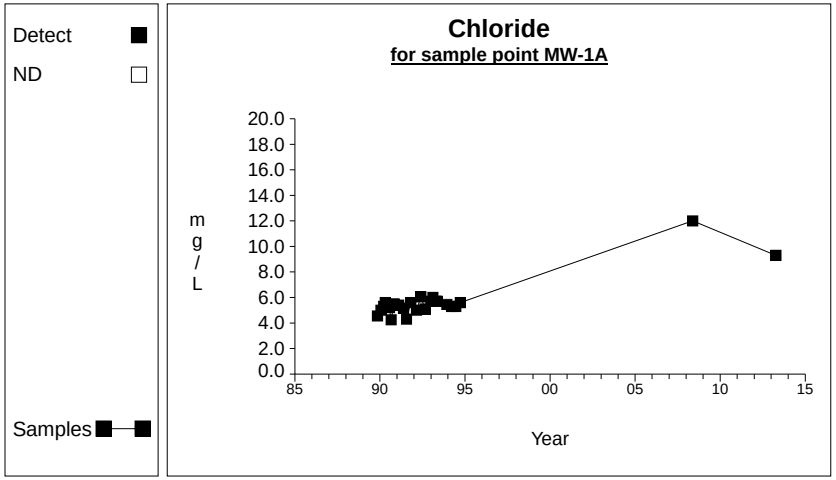


Graph 27

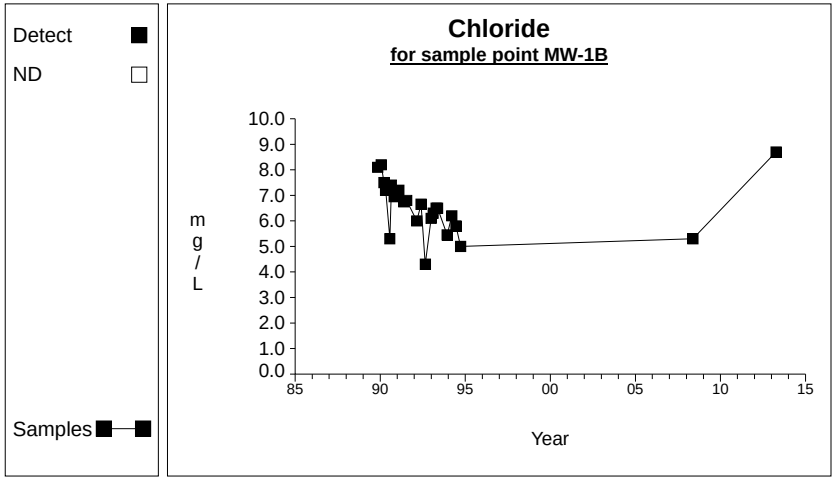


Graph 28

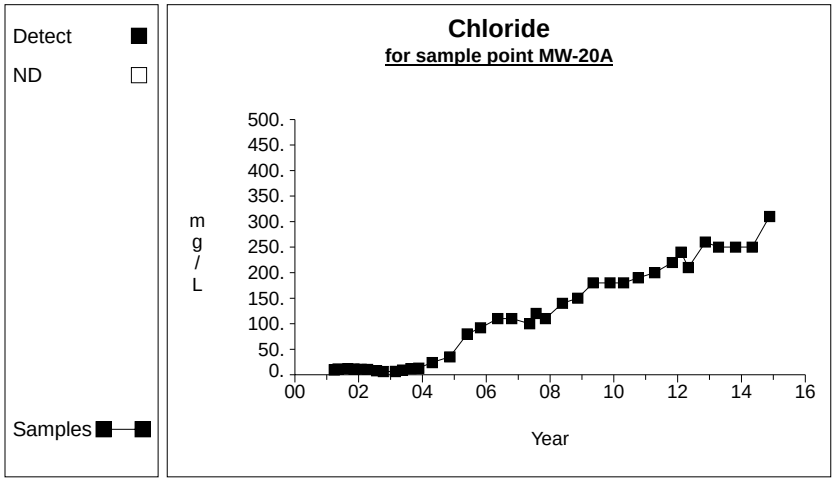
Time Series



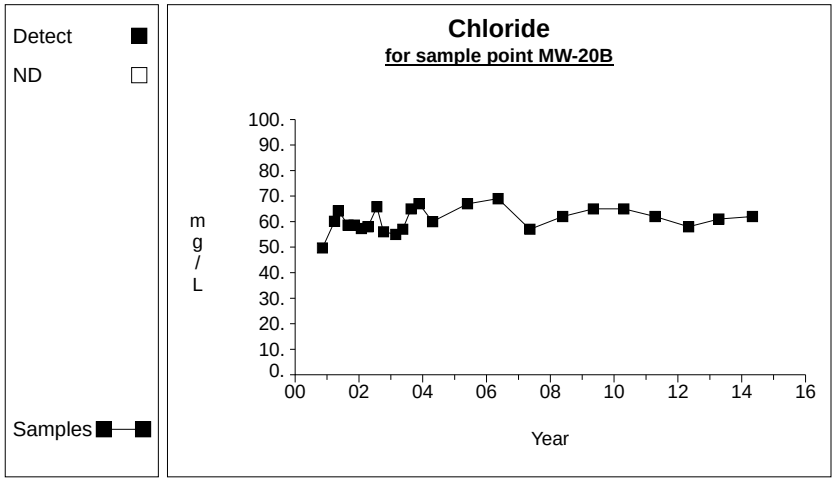
Graph 29



Graph 30

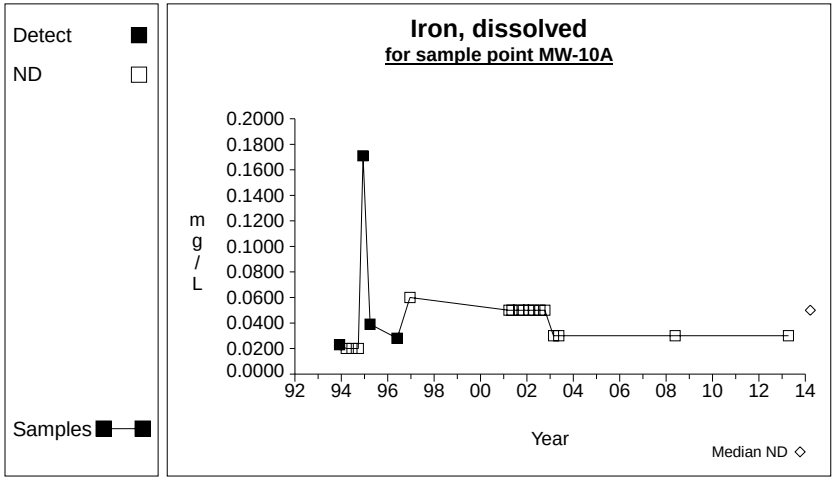


Graph 31



Graph 32

Time Series



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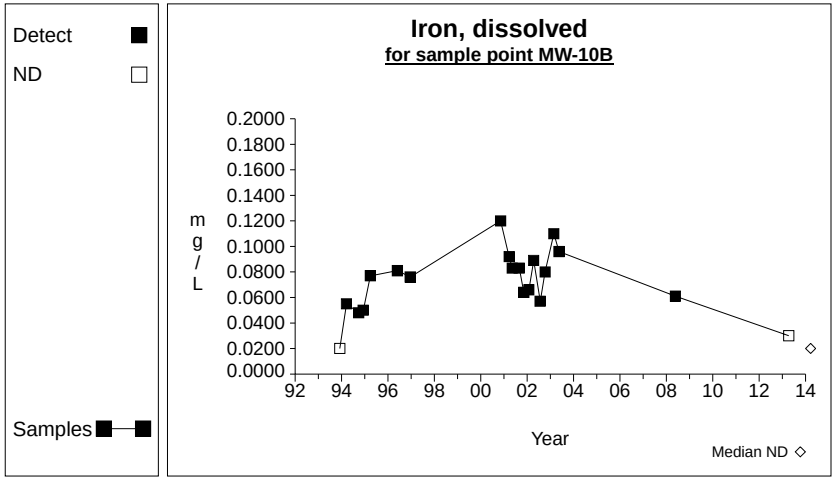
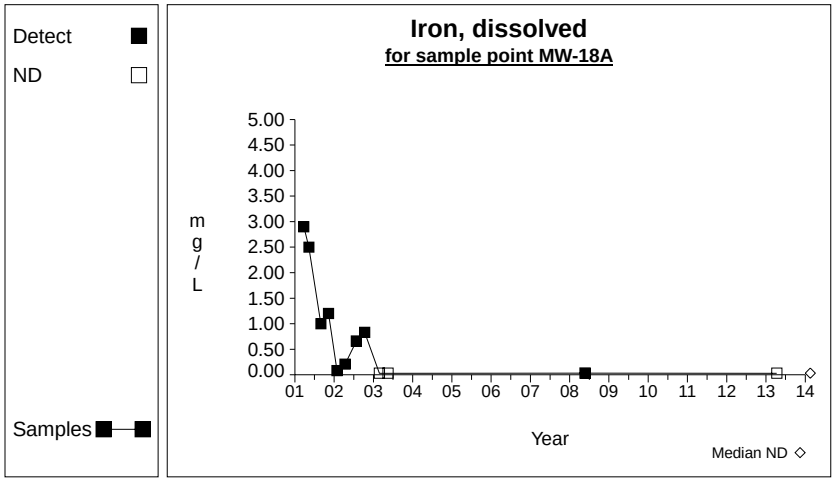
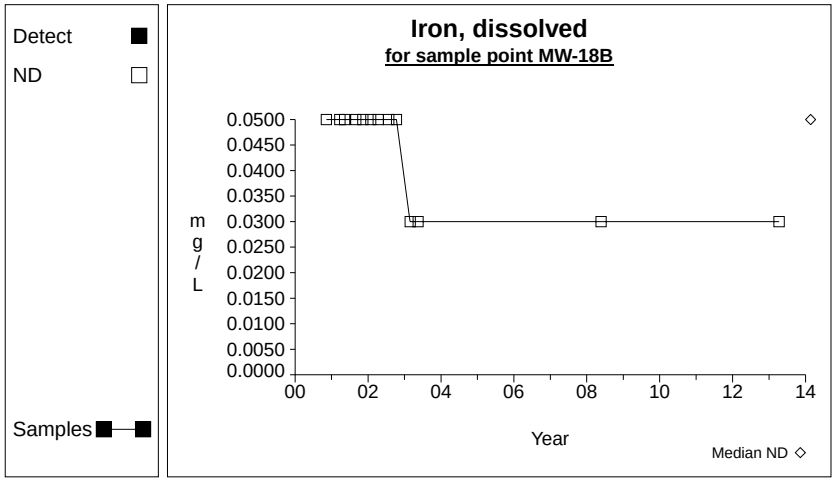


Graph 34

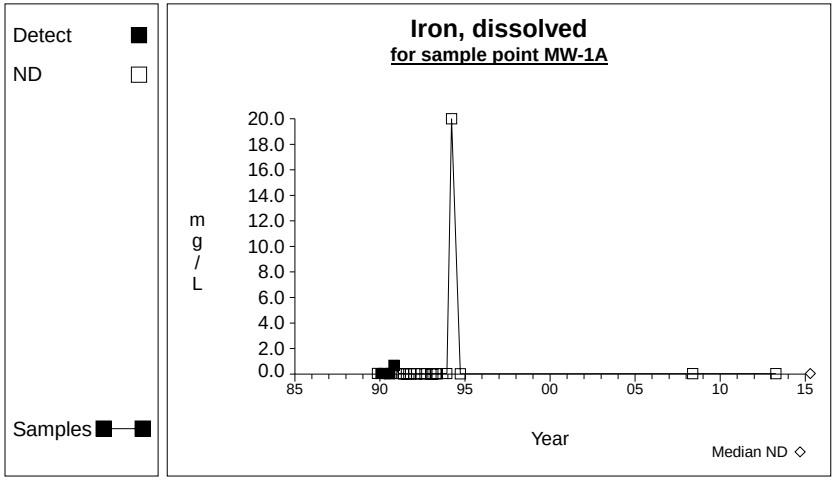


Graph 35



Graph 36

Time Series



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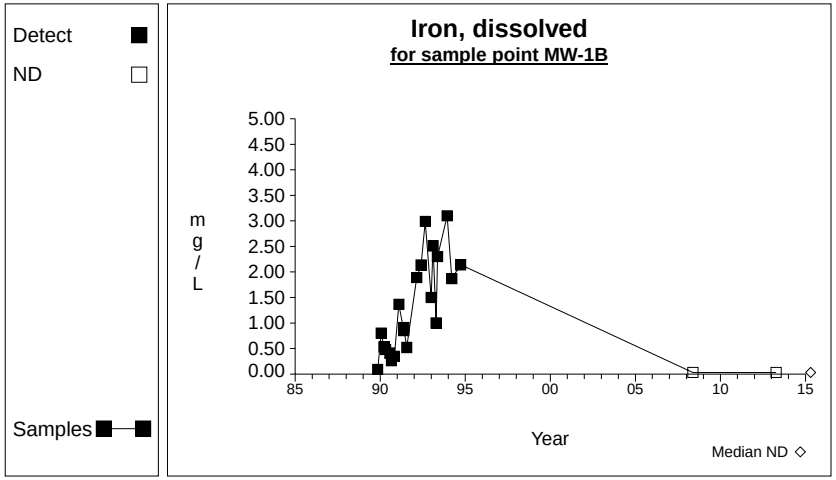

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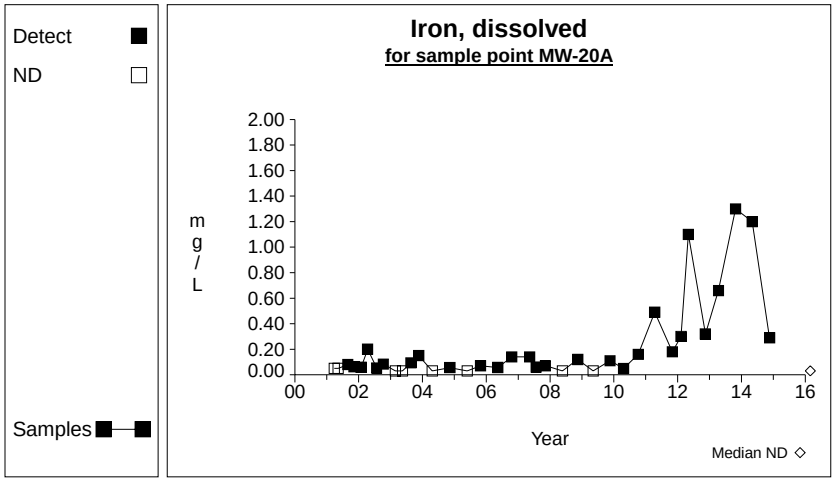

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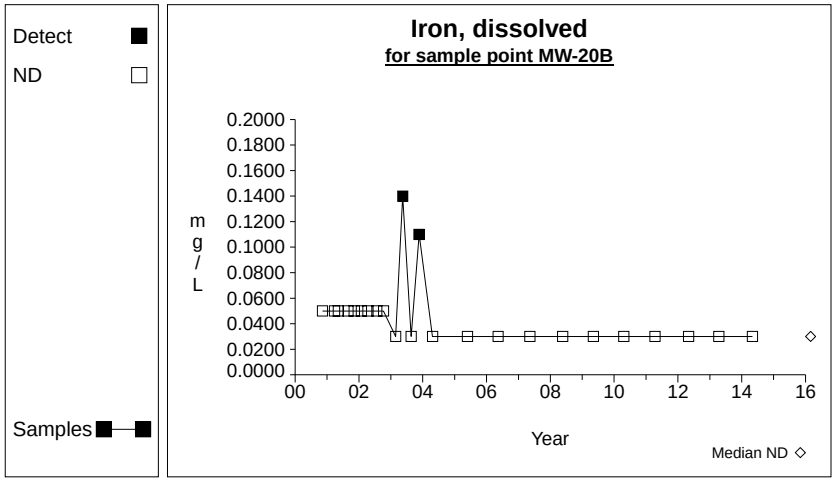
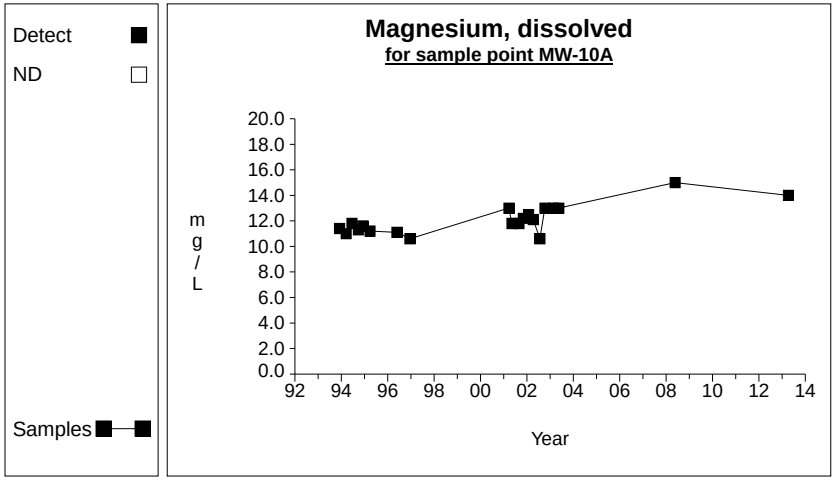


Graph 40

Time Series



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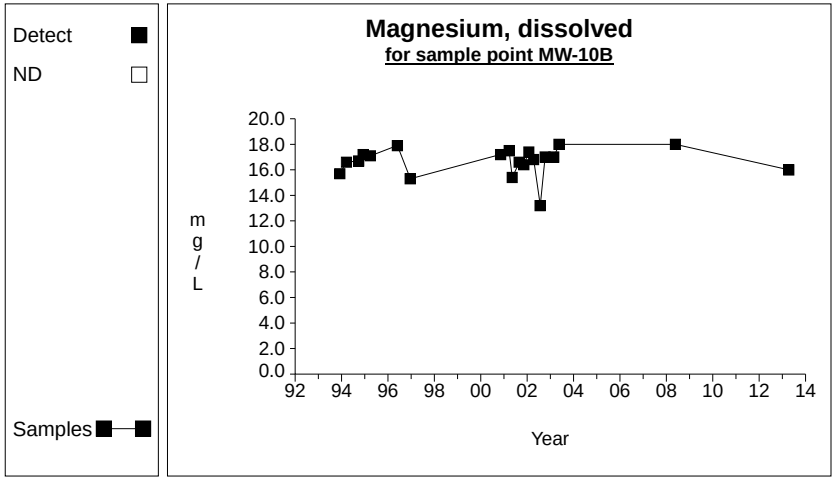

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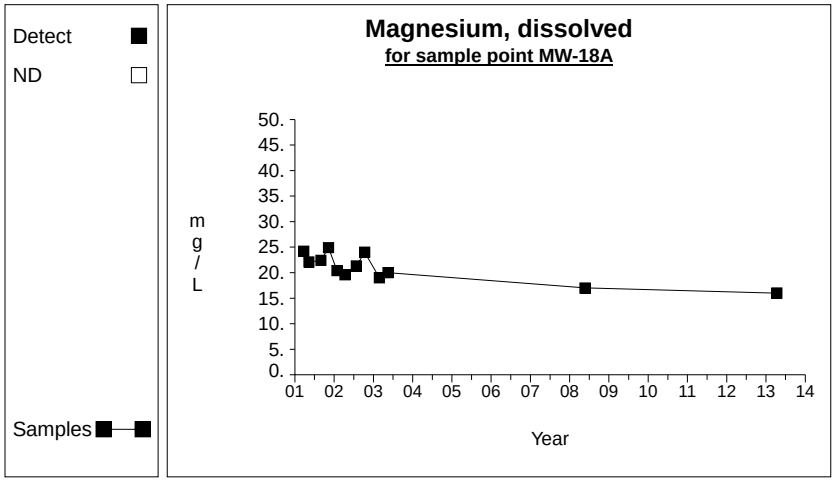

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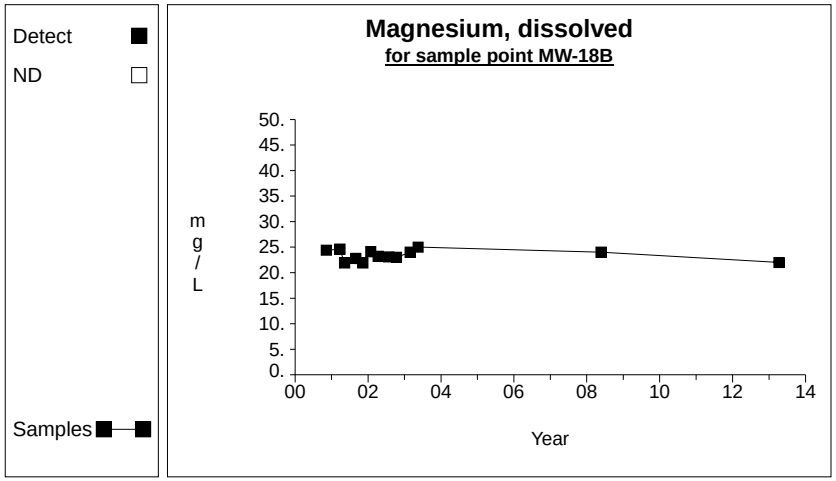
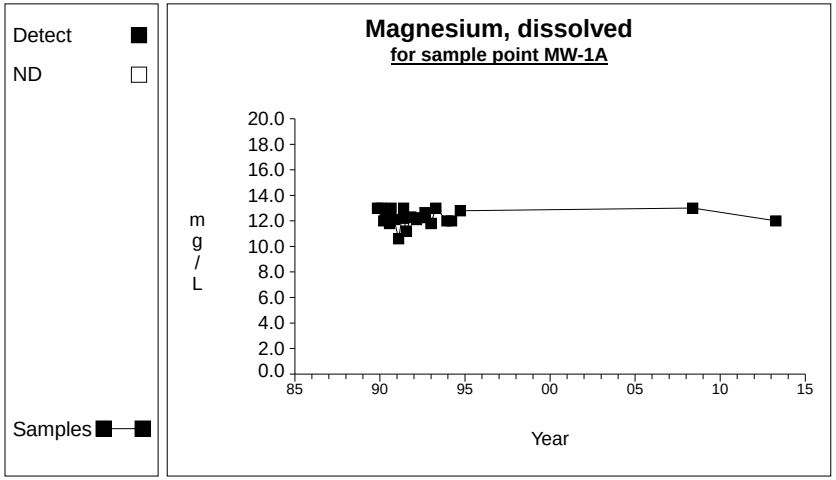
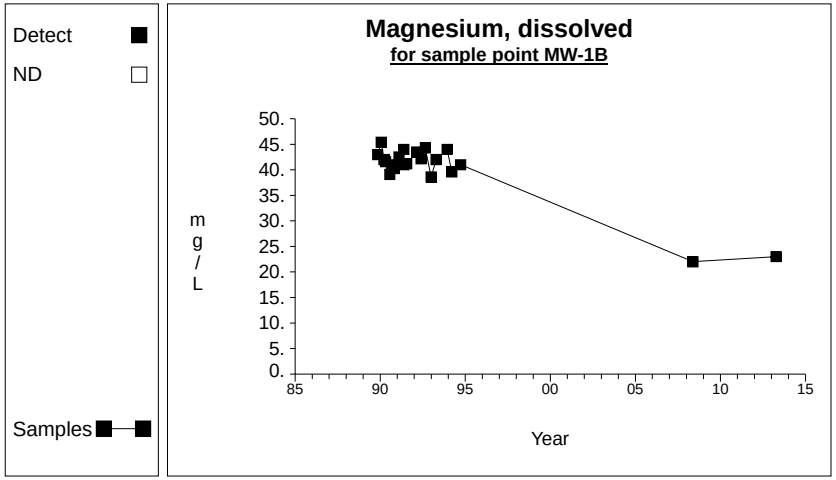


Graph 44

Time Series



Graph 45



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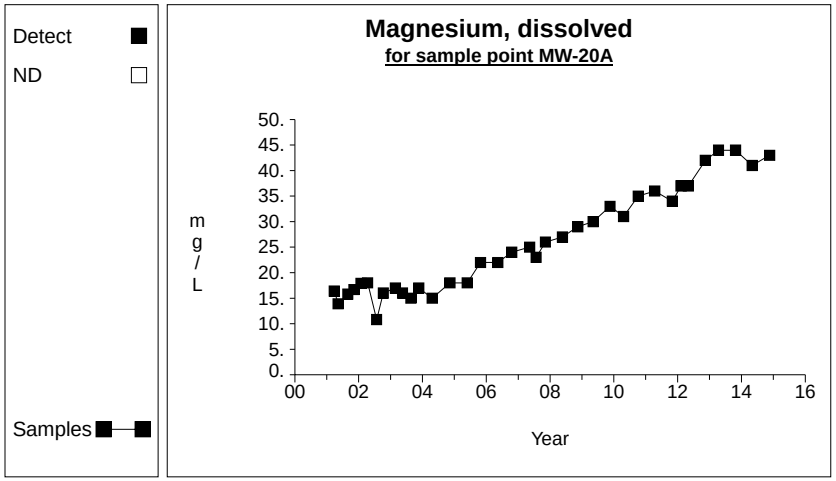
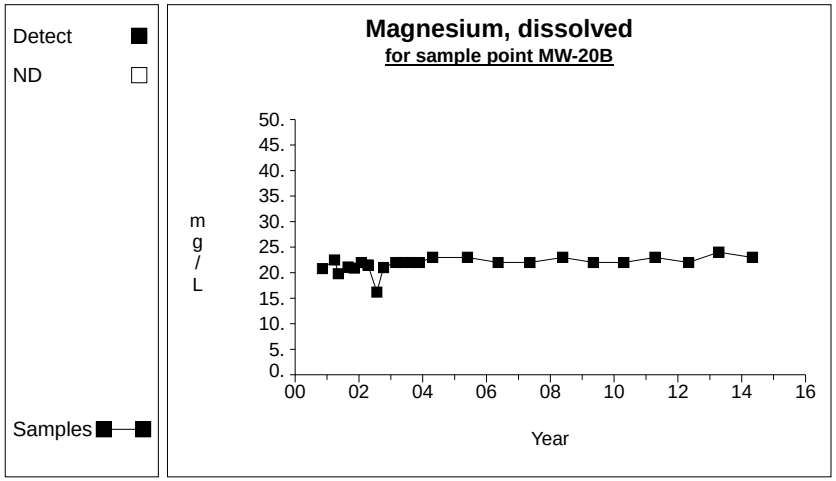
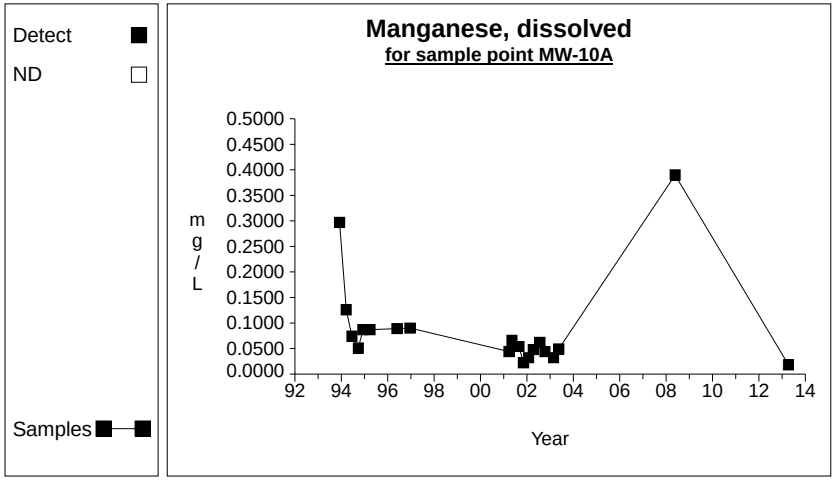


Graph 47

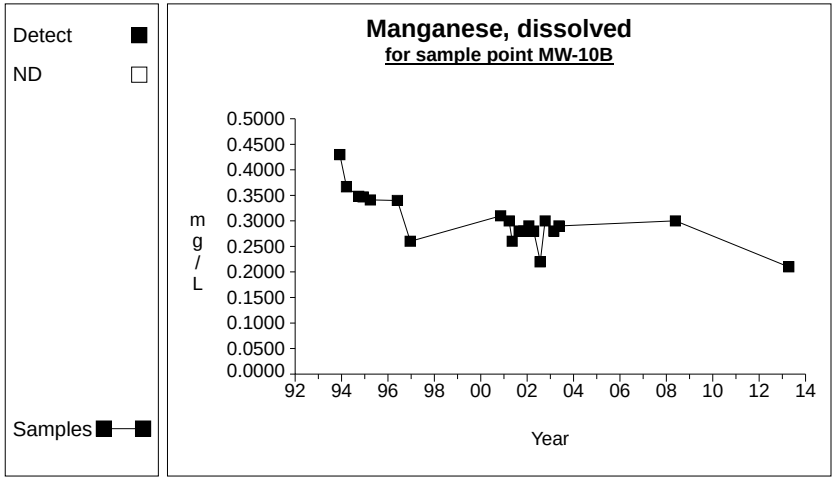


Graph 48

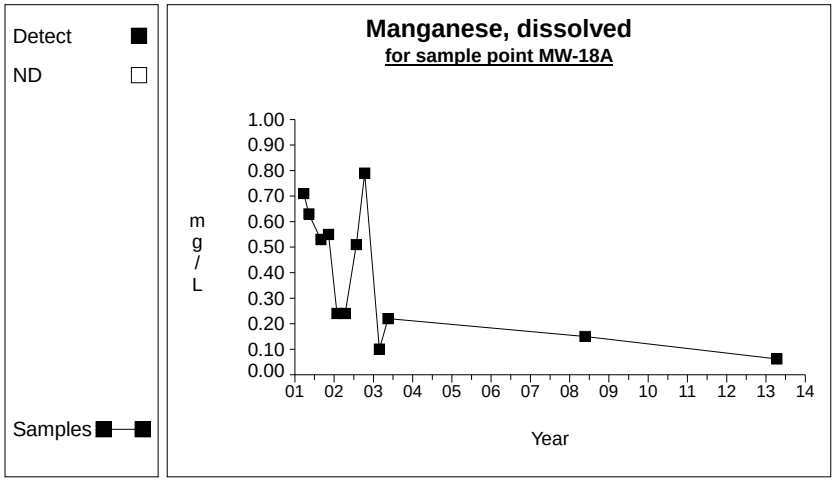
Time Series



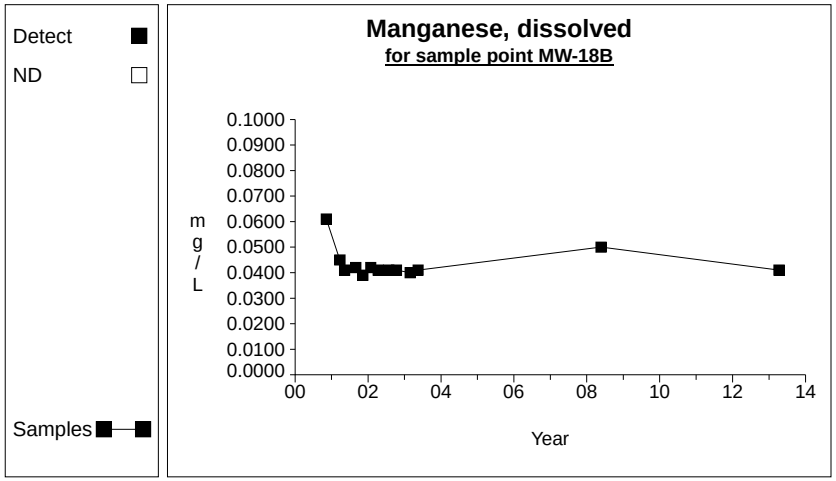
Graph 49



Graph 50

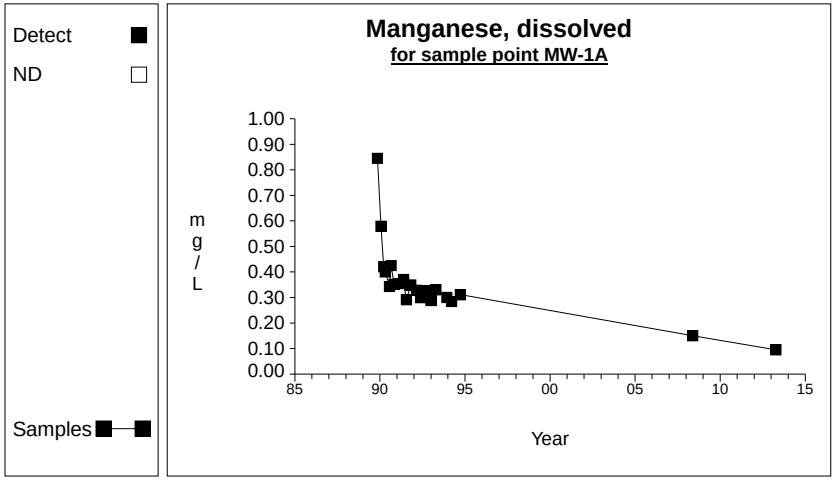


Graph 51

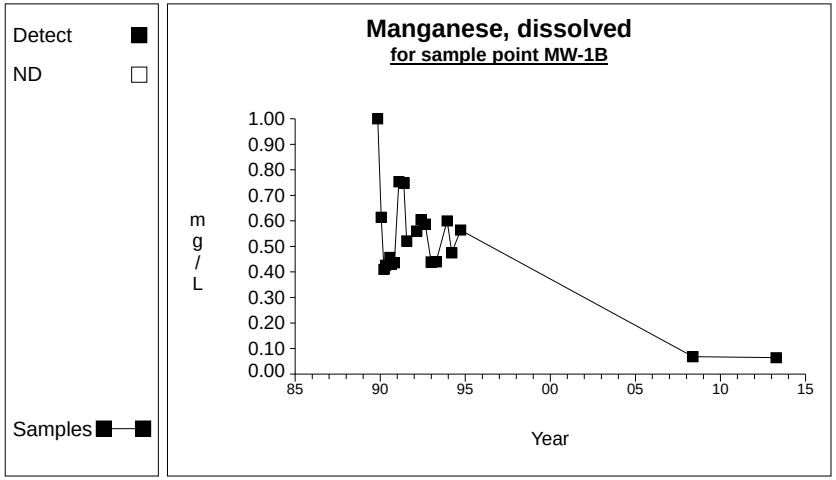


Graph 52

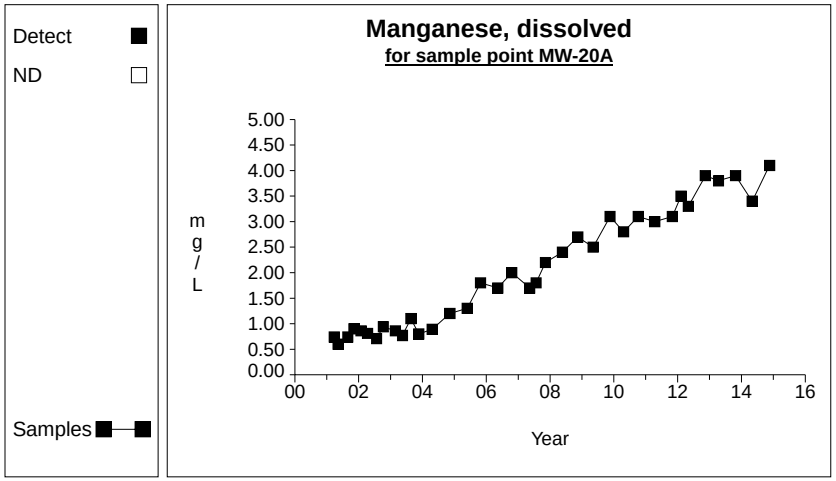
Time Series



Graph 53



Graph 54



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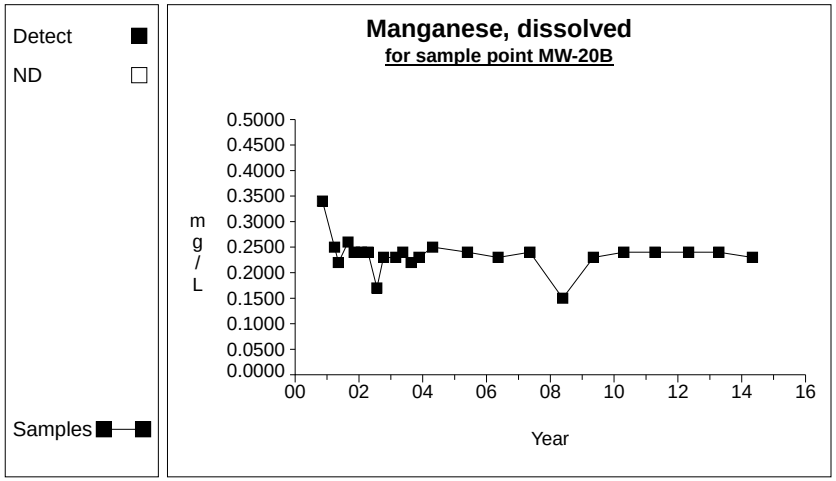
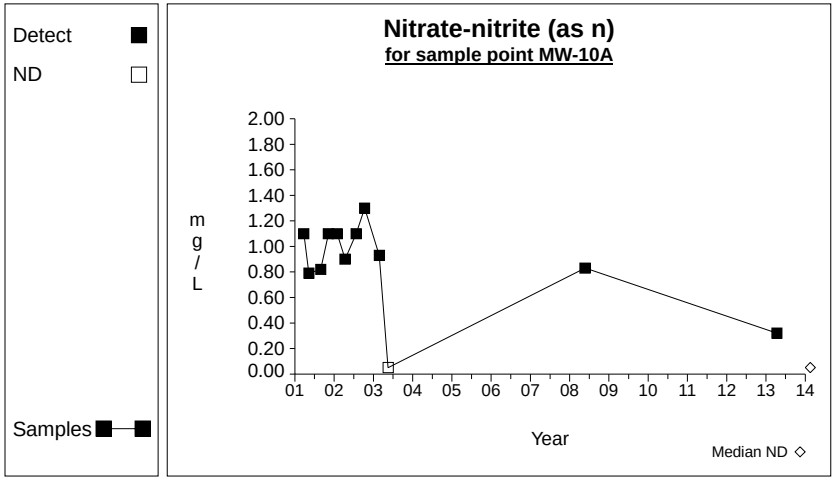
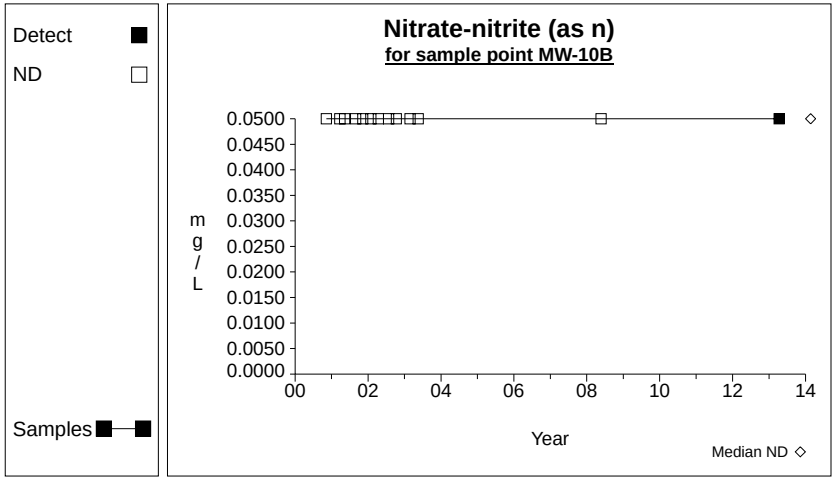


Graph 56

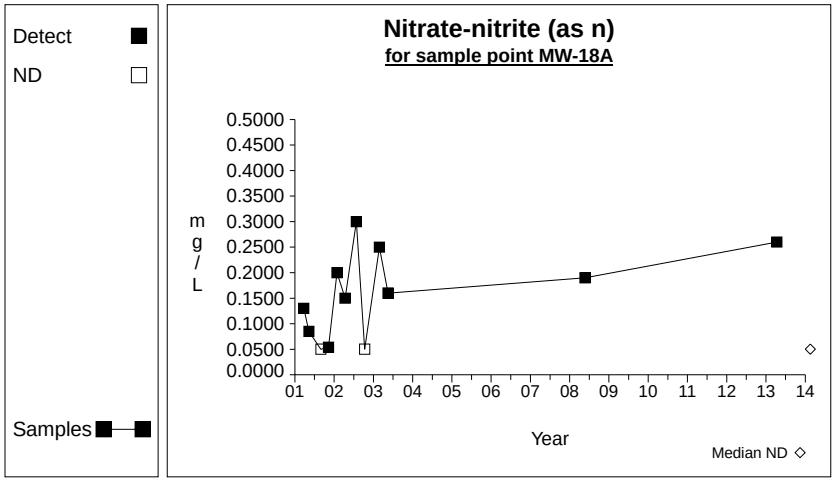
Time Series



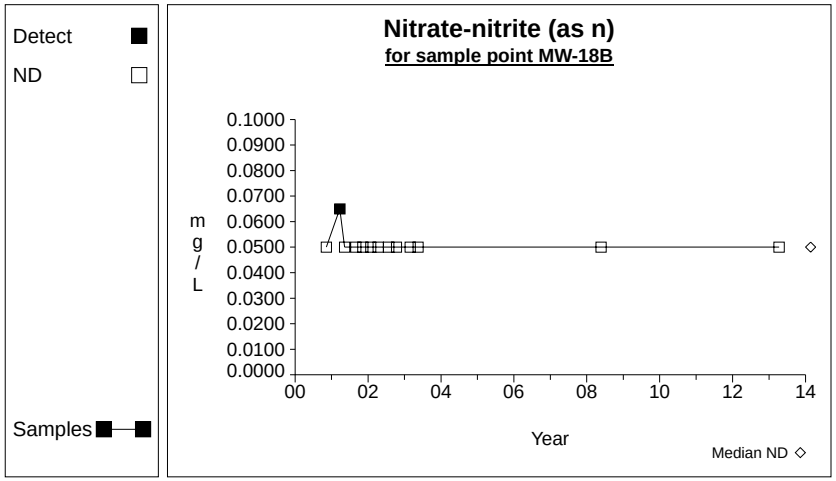
Graph 57



Graph 58

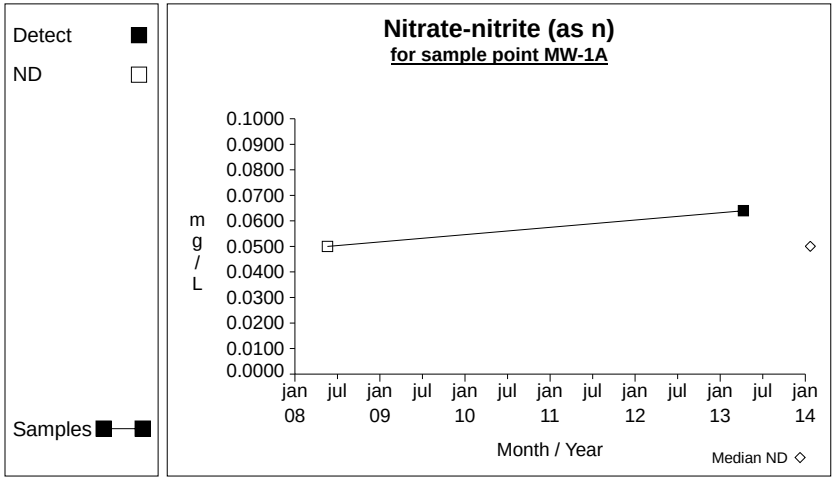


Graph 59

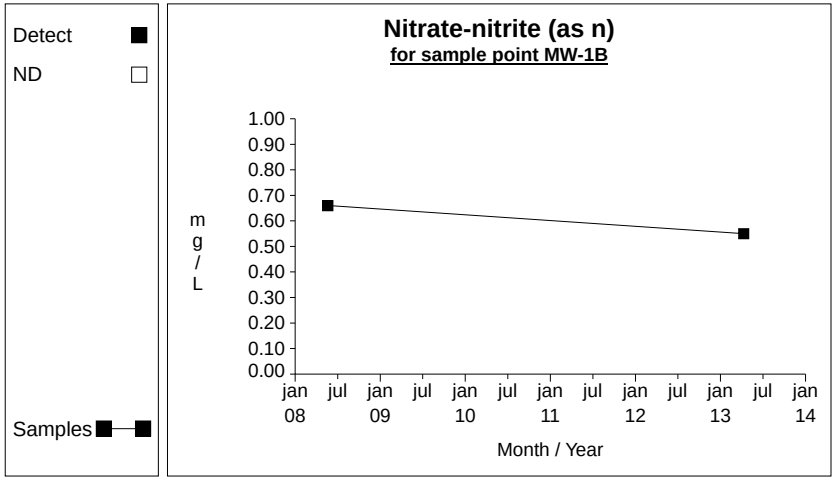


Graph 60

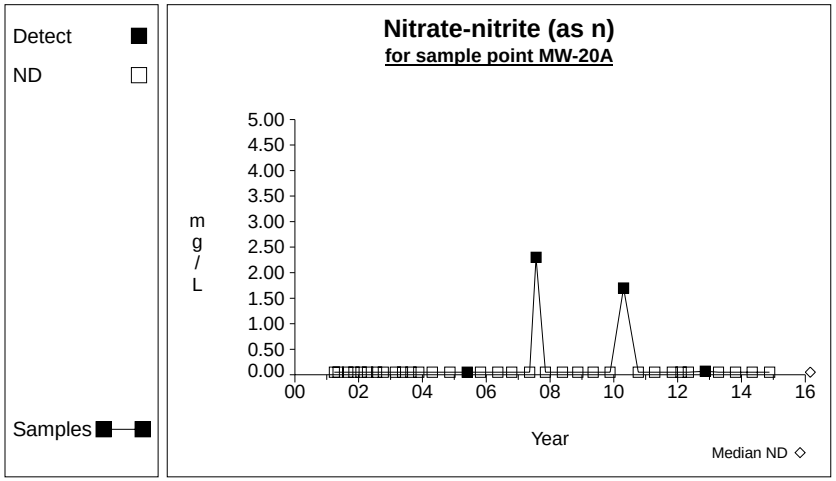
Time Series



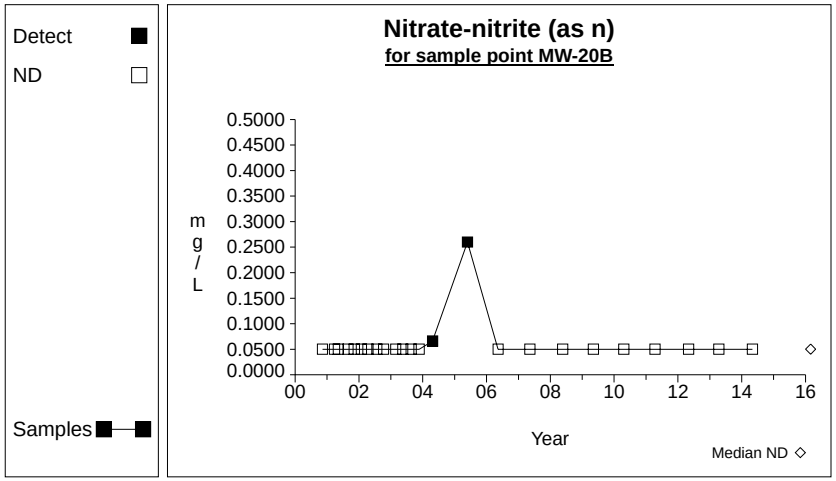
Graph 61



Graph 62

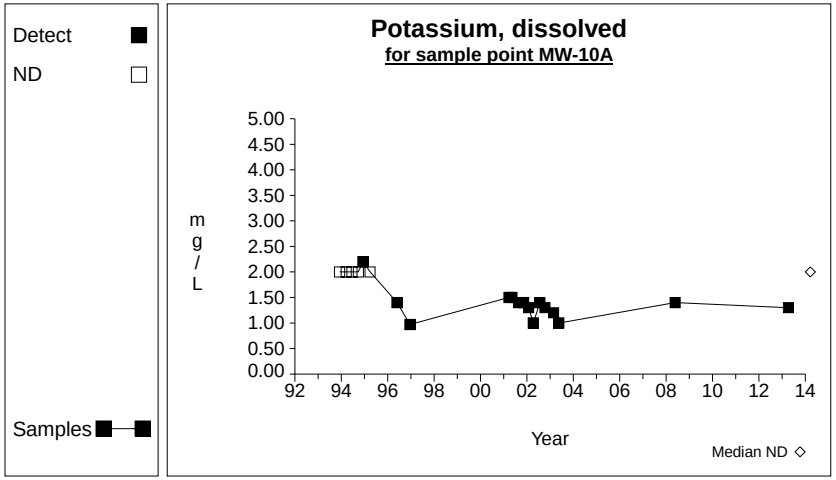


Graph 63

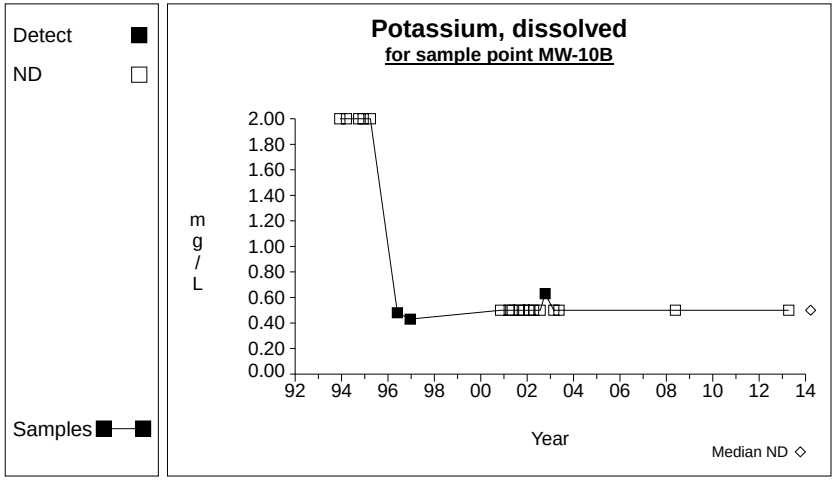


Graph 64

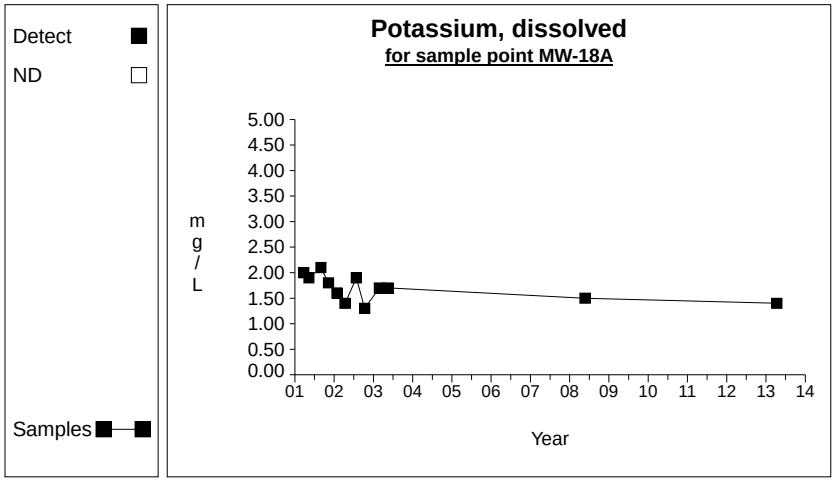
Time Series



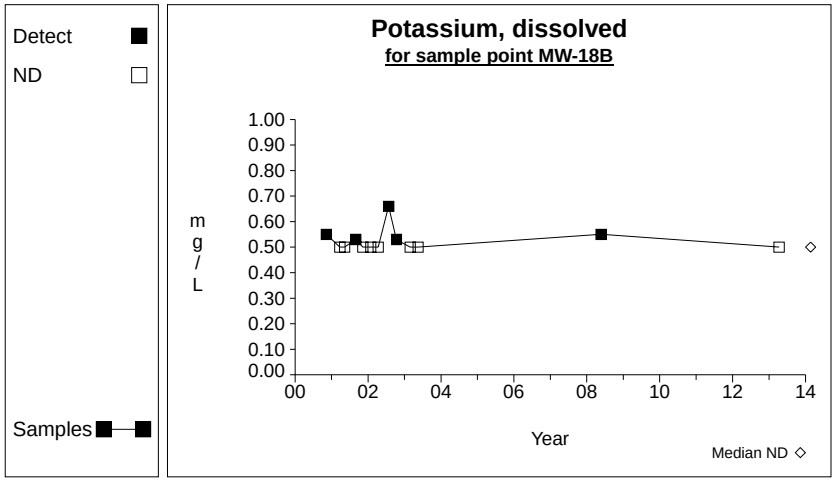
Graph 65



Graph 66

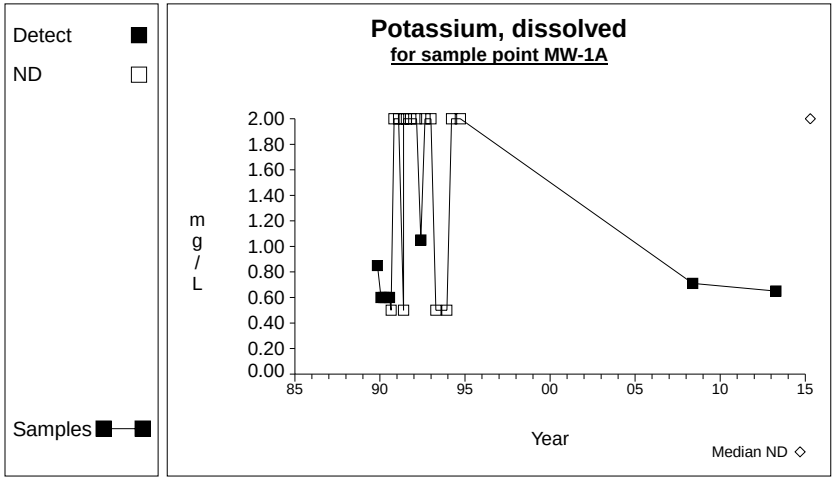


Graph 67

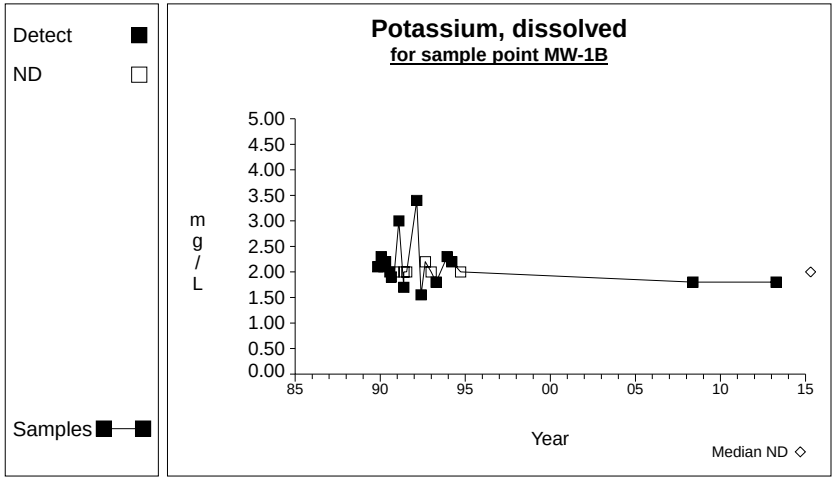


Graph 68

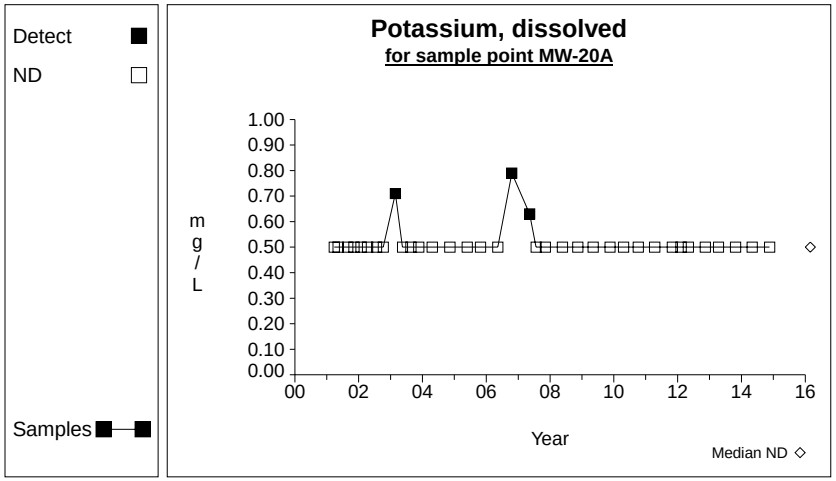
Time Series



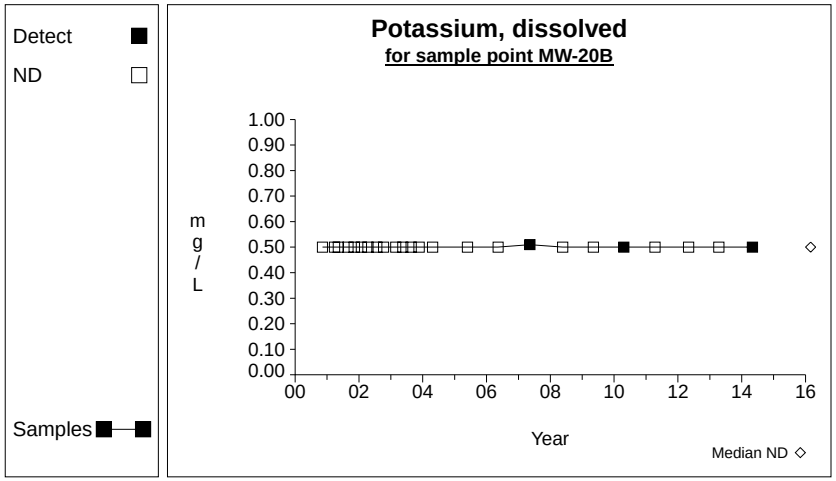
Graph 69



Graph 70

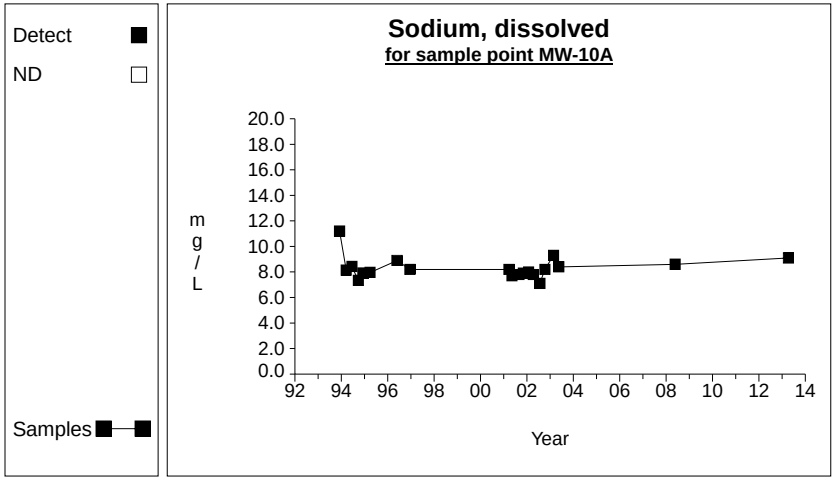


Graph 71

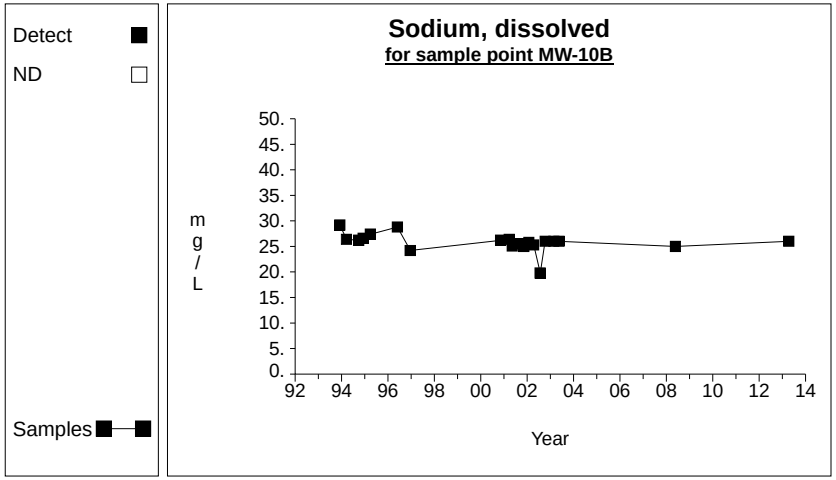


Graph 72

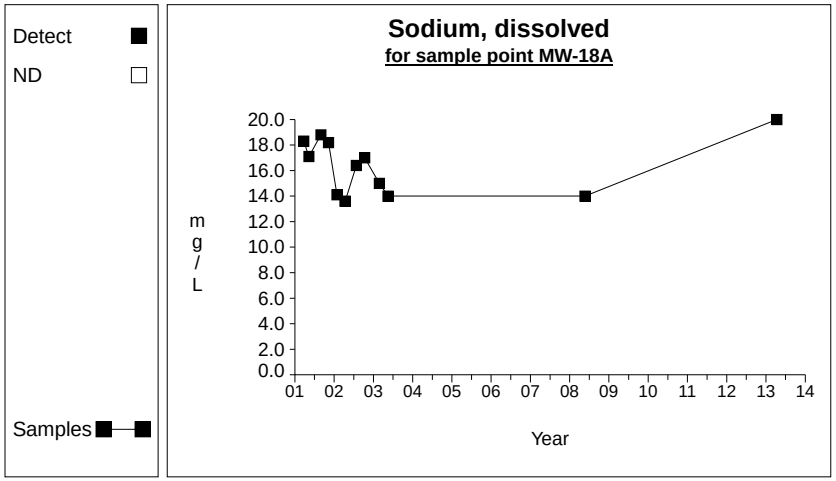
Time Series



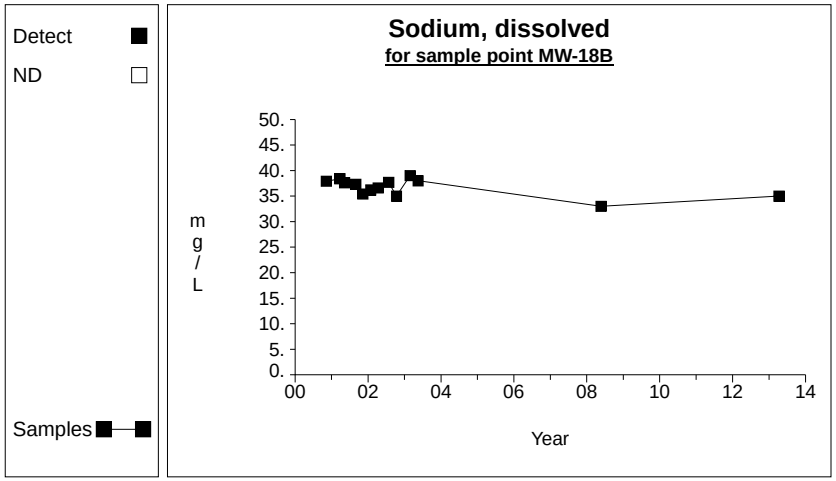
Graph 73



Graph 74

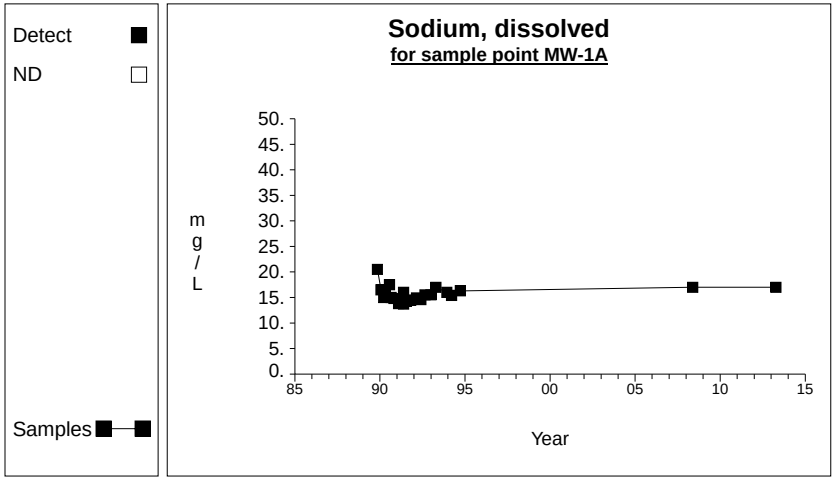


Graph 75

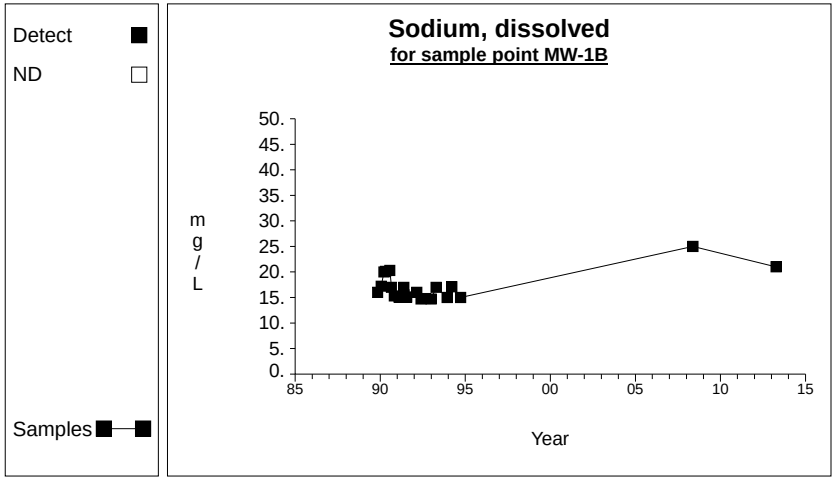


Graph 76

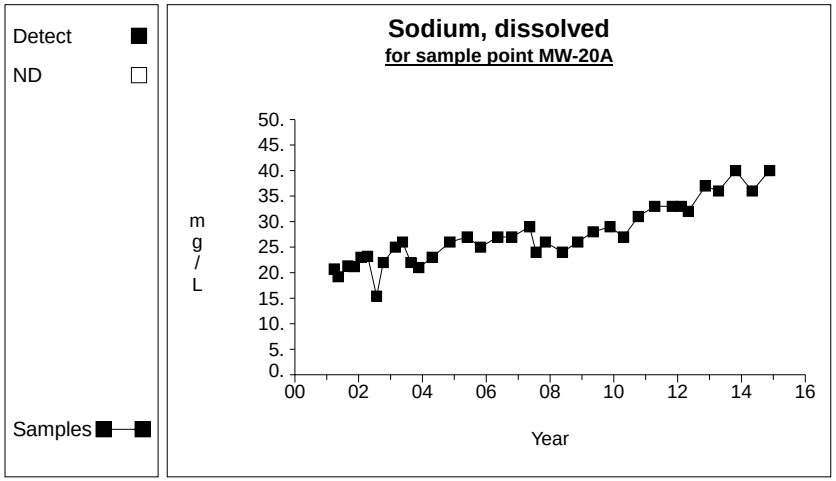
Time Series



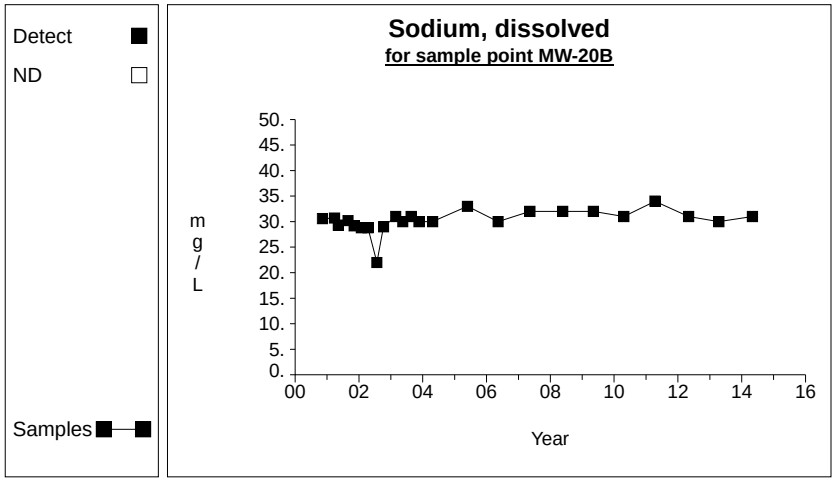
Graph 77



Graph 78

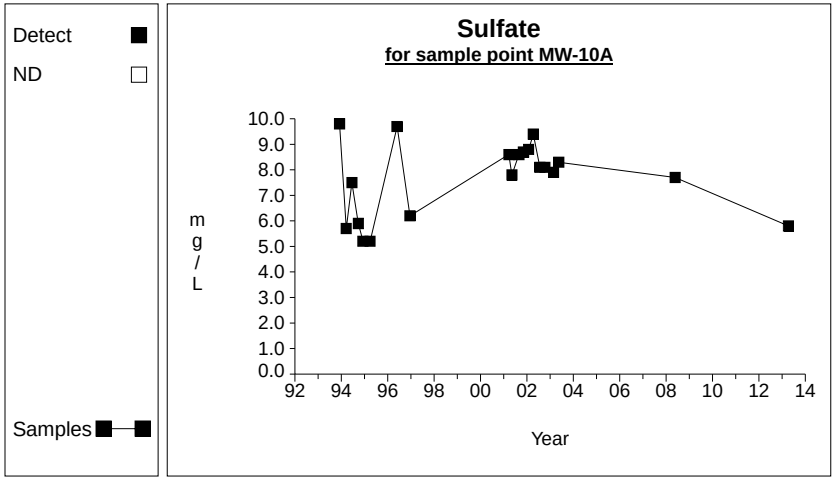


Graph 79

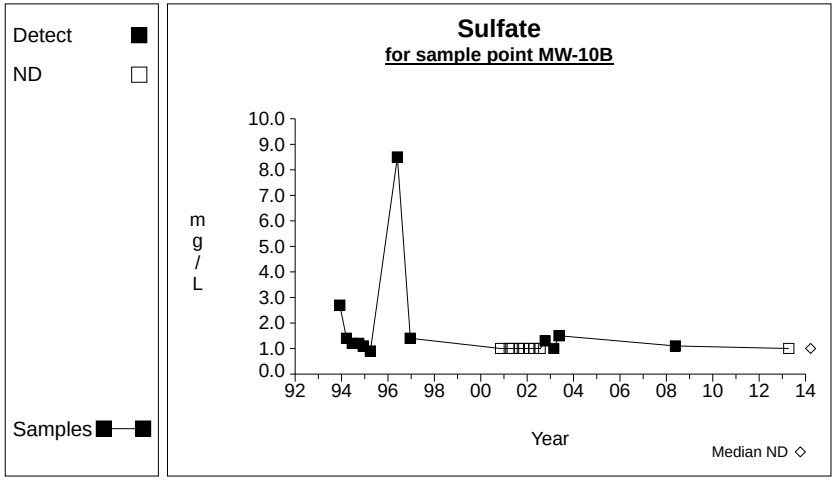


Graph 80

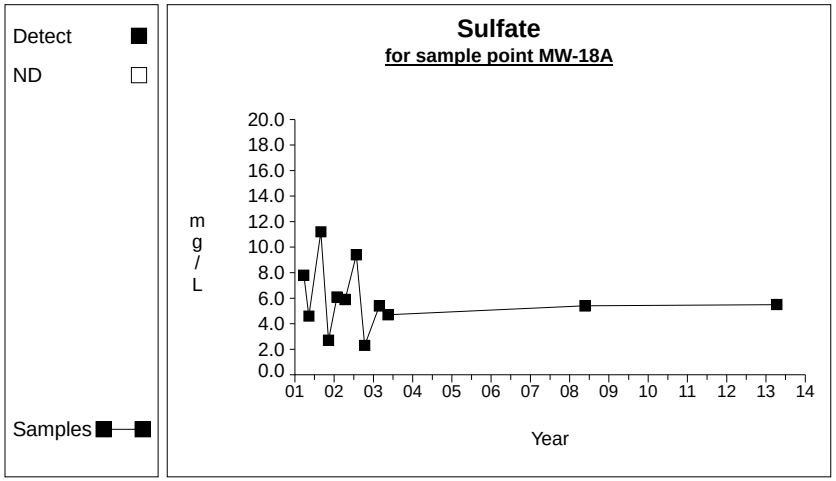
Time Series



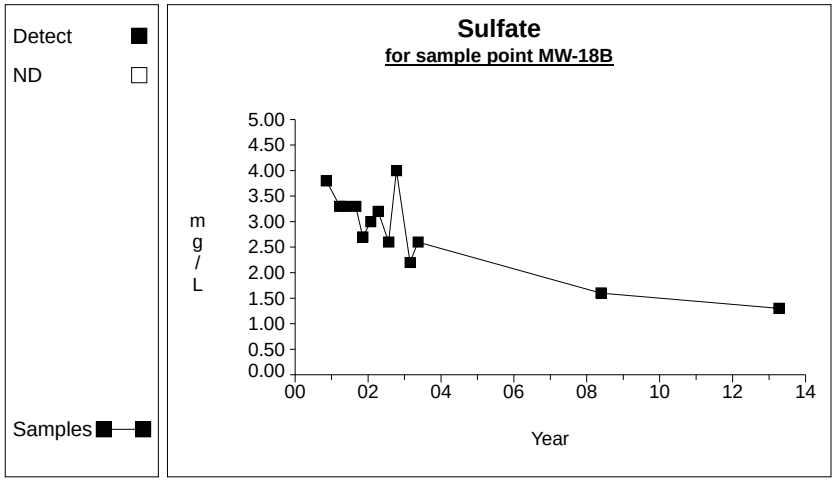
Graph 81



Graph 82

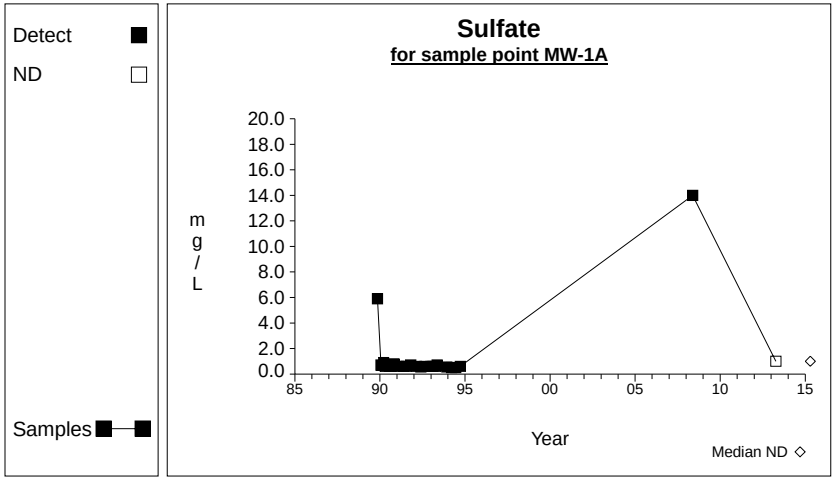


Graph 83

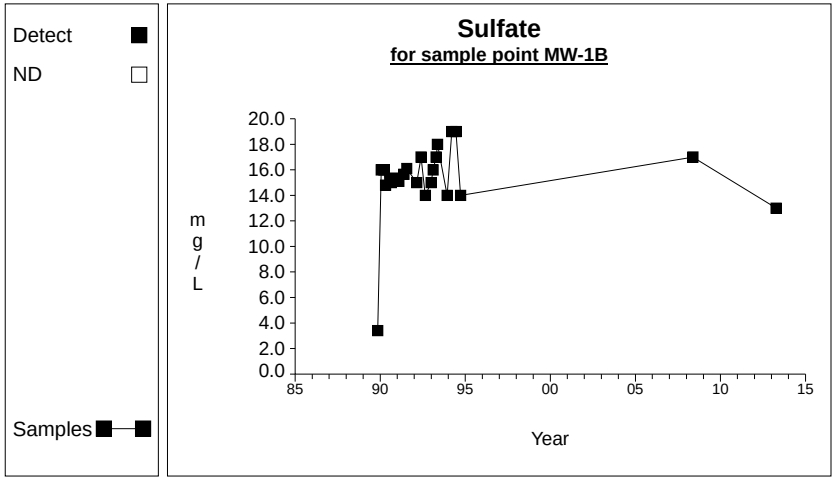


Graph 84

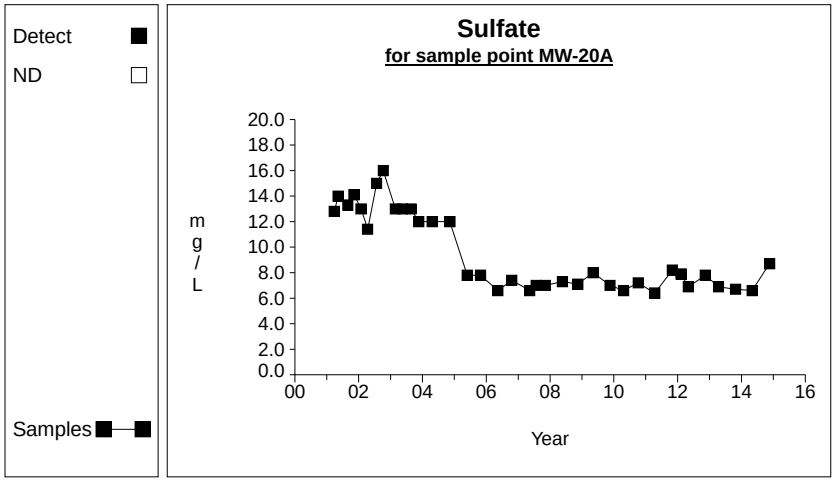
Time Series



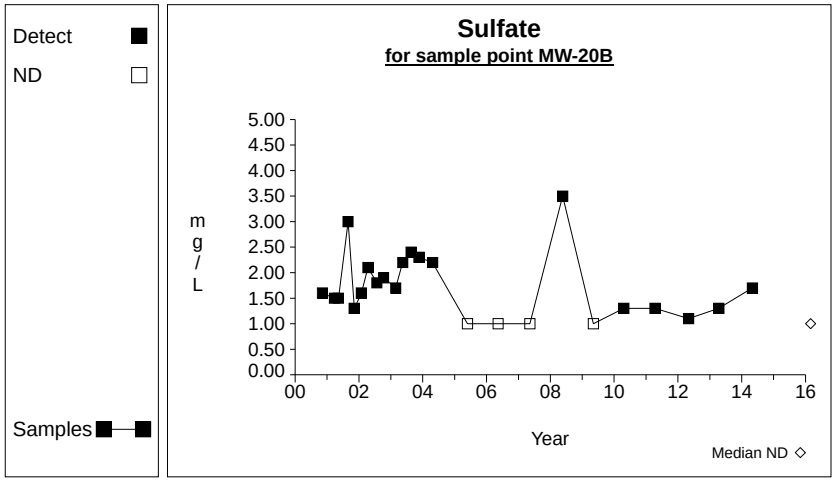
Graph 85



Graph 86

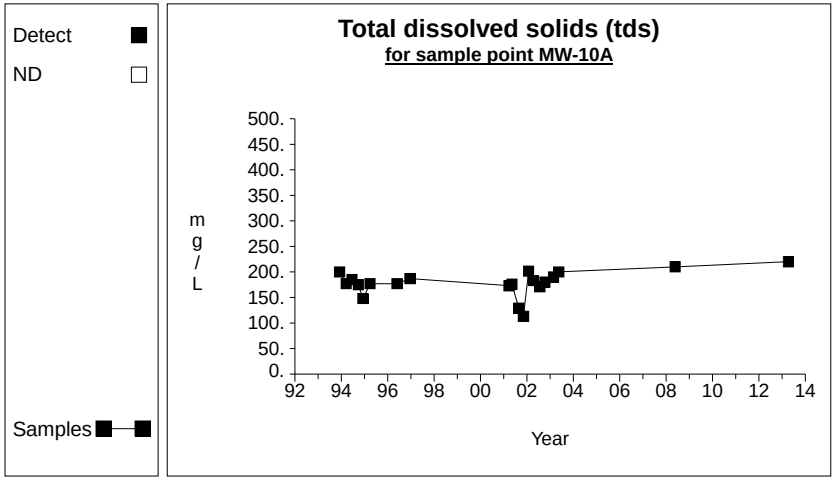


Graph 87

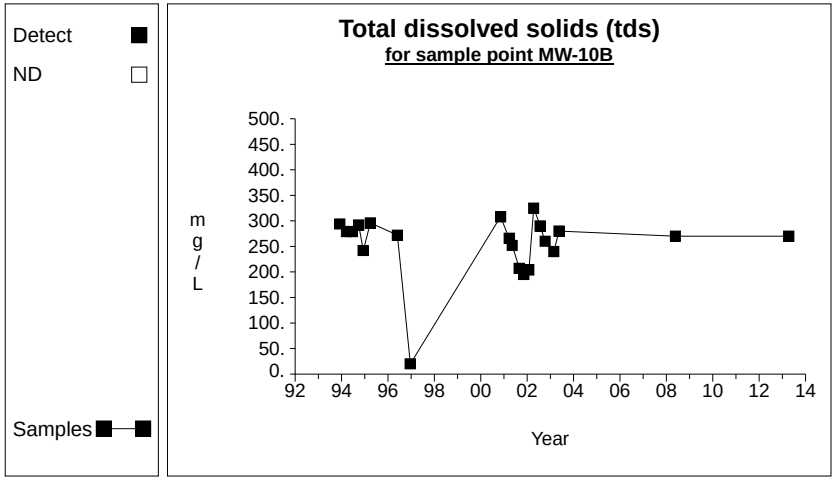


Graph 88

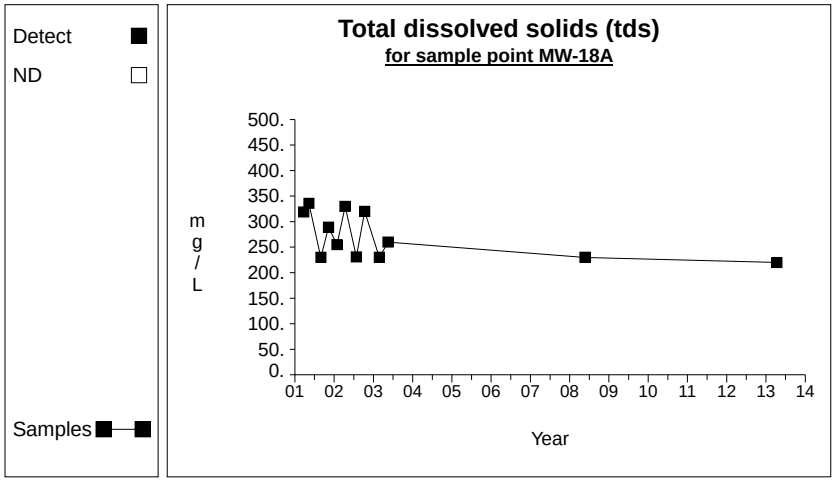
Time Series



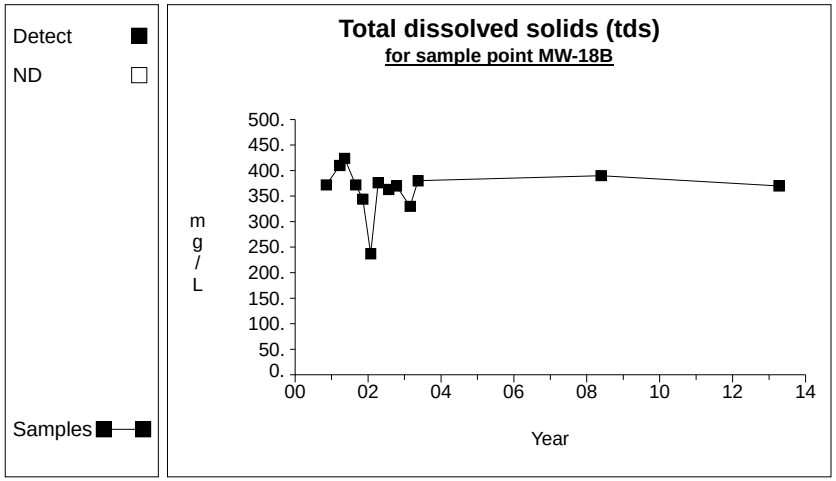
Graph 89



Graph 90

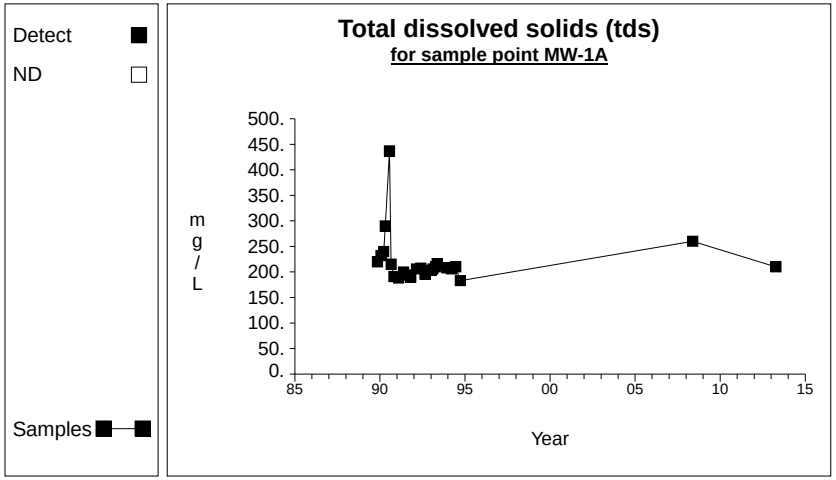


Graph 91

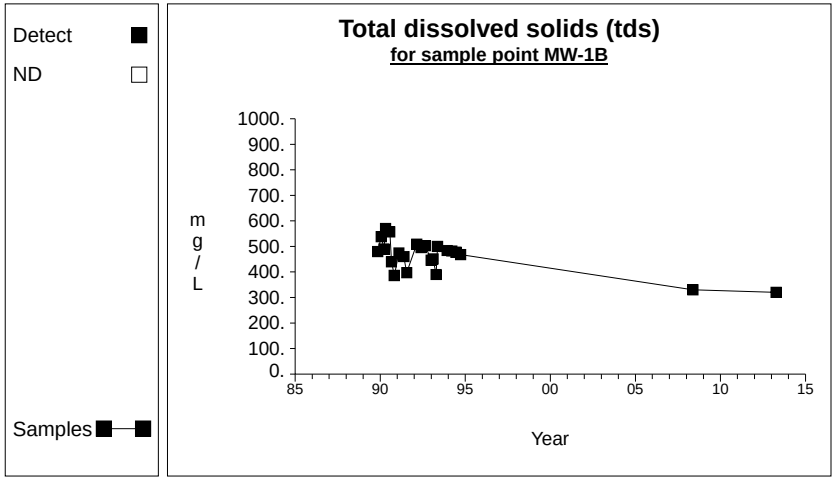


Graph 92

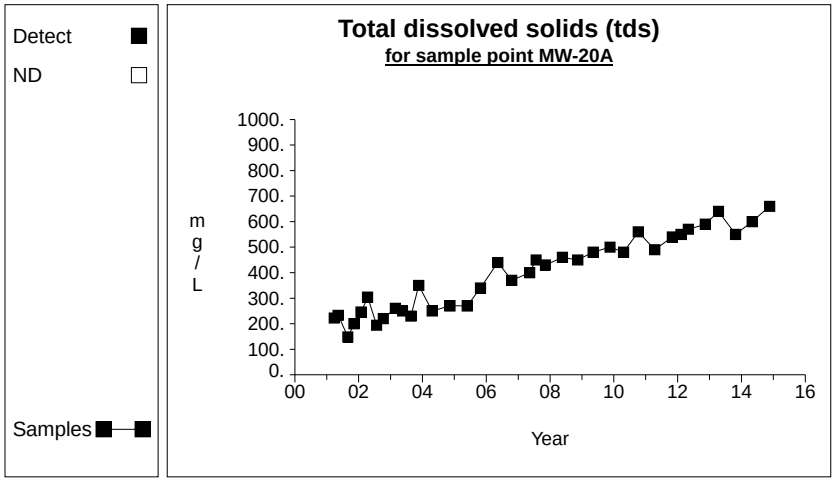
Time Series



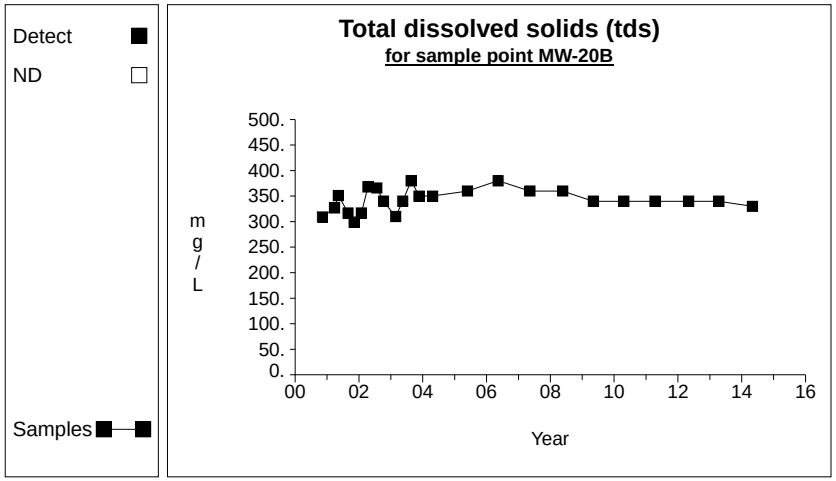
Graph 93



Graph 94

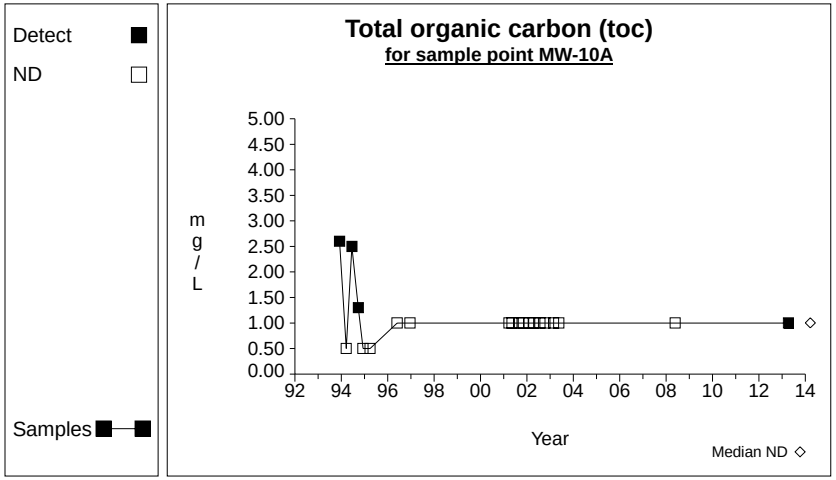


Graph 95

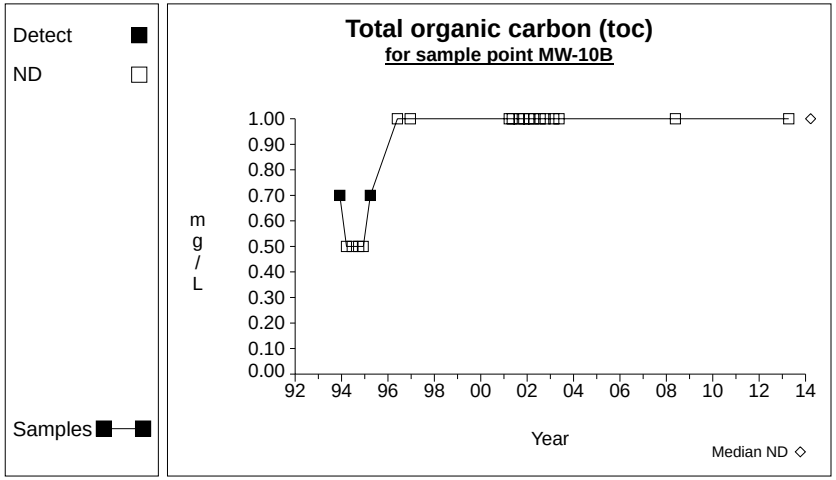


Graph 96

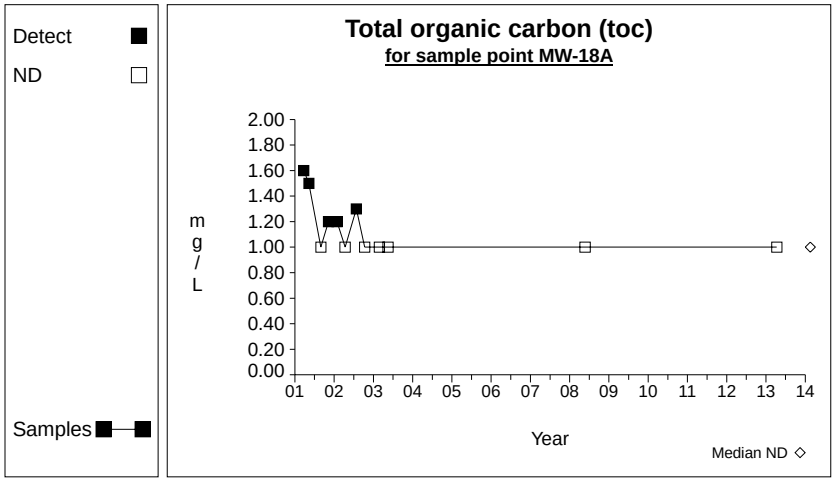
Time Series



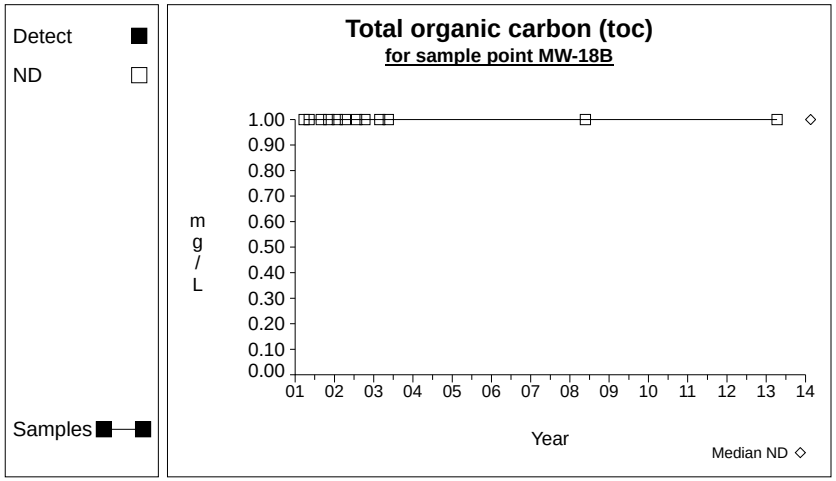
Graph 97



Graph 98

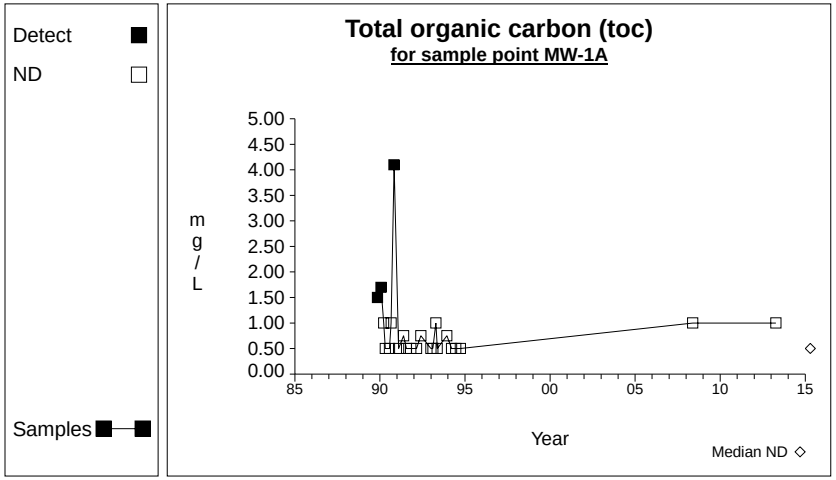


Graph 99

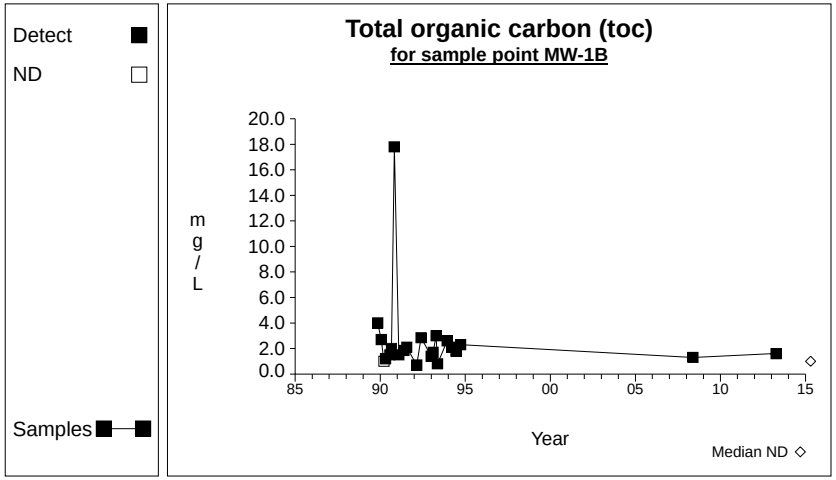


Graph 100

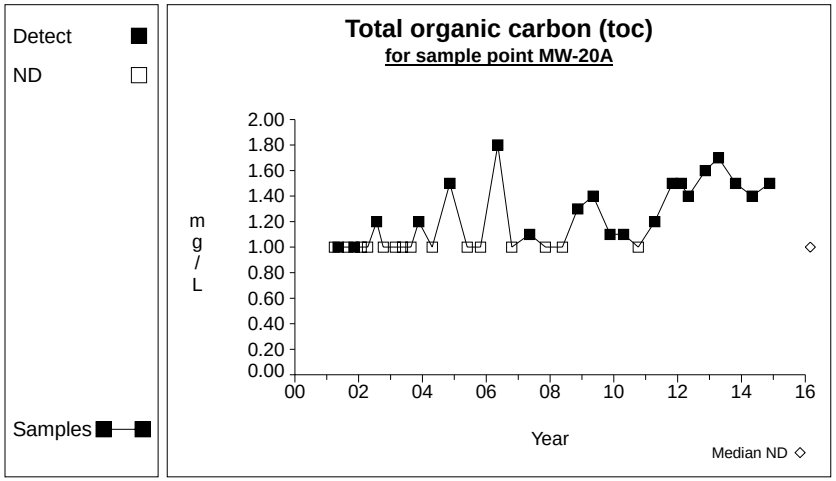
Time Series



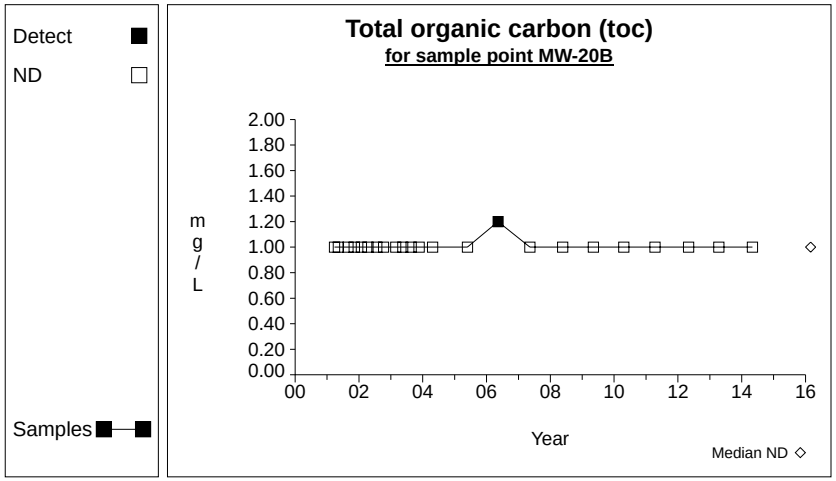
Graph 101



Graph 102



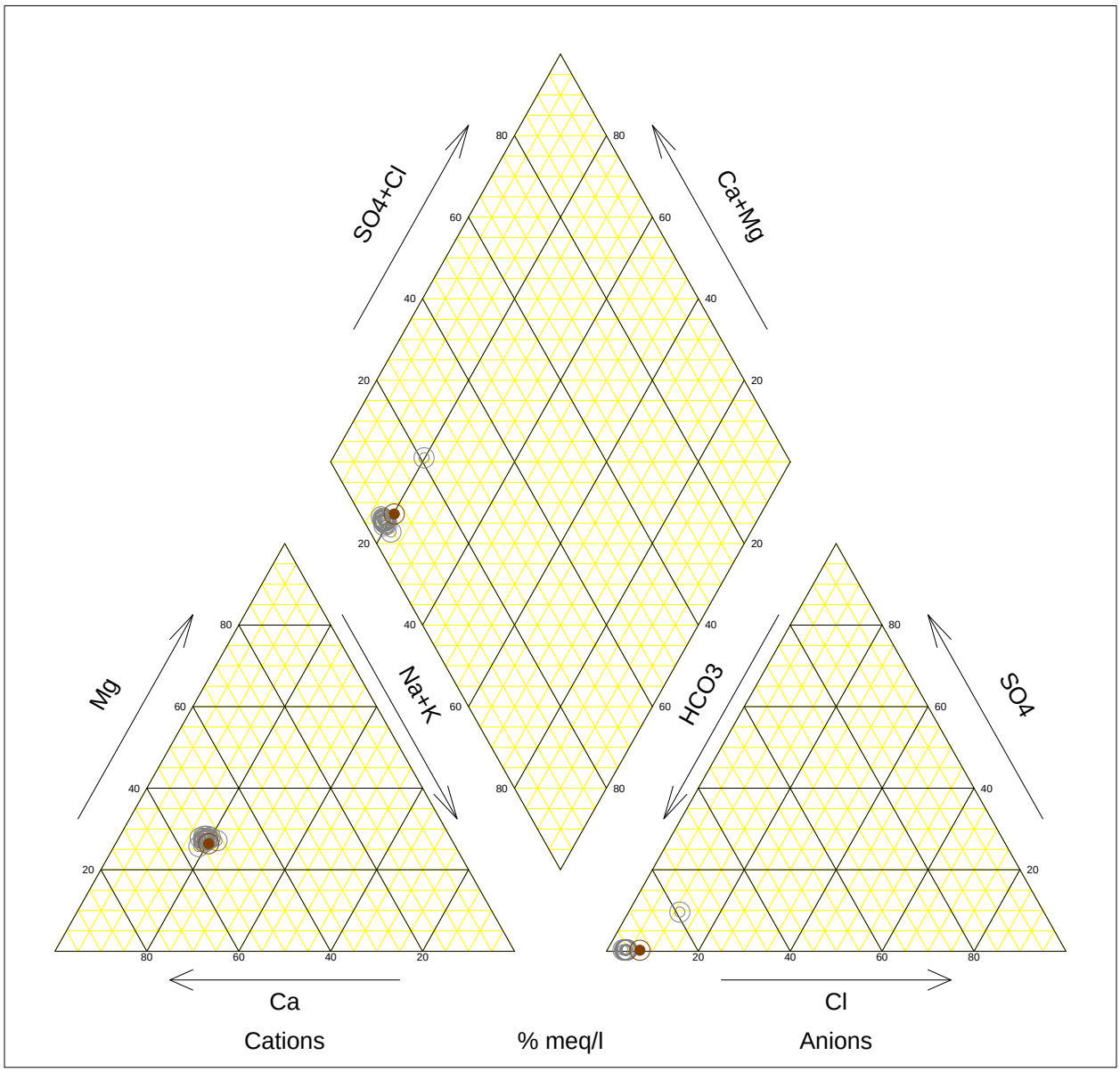
Graph 103



Graph 104

Geochemical Diagrams

MW-1A Trilinear Diagram



MW-1A	4/26/1990		MW-1A	8/26/1992 -	9/21/1992
MW-1A	7/24/1990		MW-1A	12/15/1992 -	1/13/1993
MW-1A	10/30/1990 -	10/31/1990	MW-1A	4/14/1993 -	5/13/1993
MW-1A	2/04/1991 -	2/05/1991	MW-1A	12/03/1993 -	12/07/1993
MW-1A	5/21/1991 -	5/22/1991	MW-1A	3/16/1994 -	3/18/1994
MW-1A	7/22/1991 -	7/23/1991	MW-1A	9/22/1994 -	9/27/1994
MW-1A	10/22/1991		MW-1A	5/06/2008 -	5/23/2008
MW-1A	2/25/1992 -	2/26/1992	MW-1A	4/08/2013 -	4/29/2013

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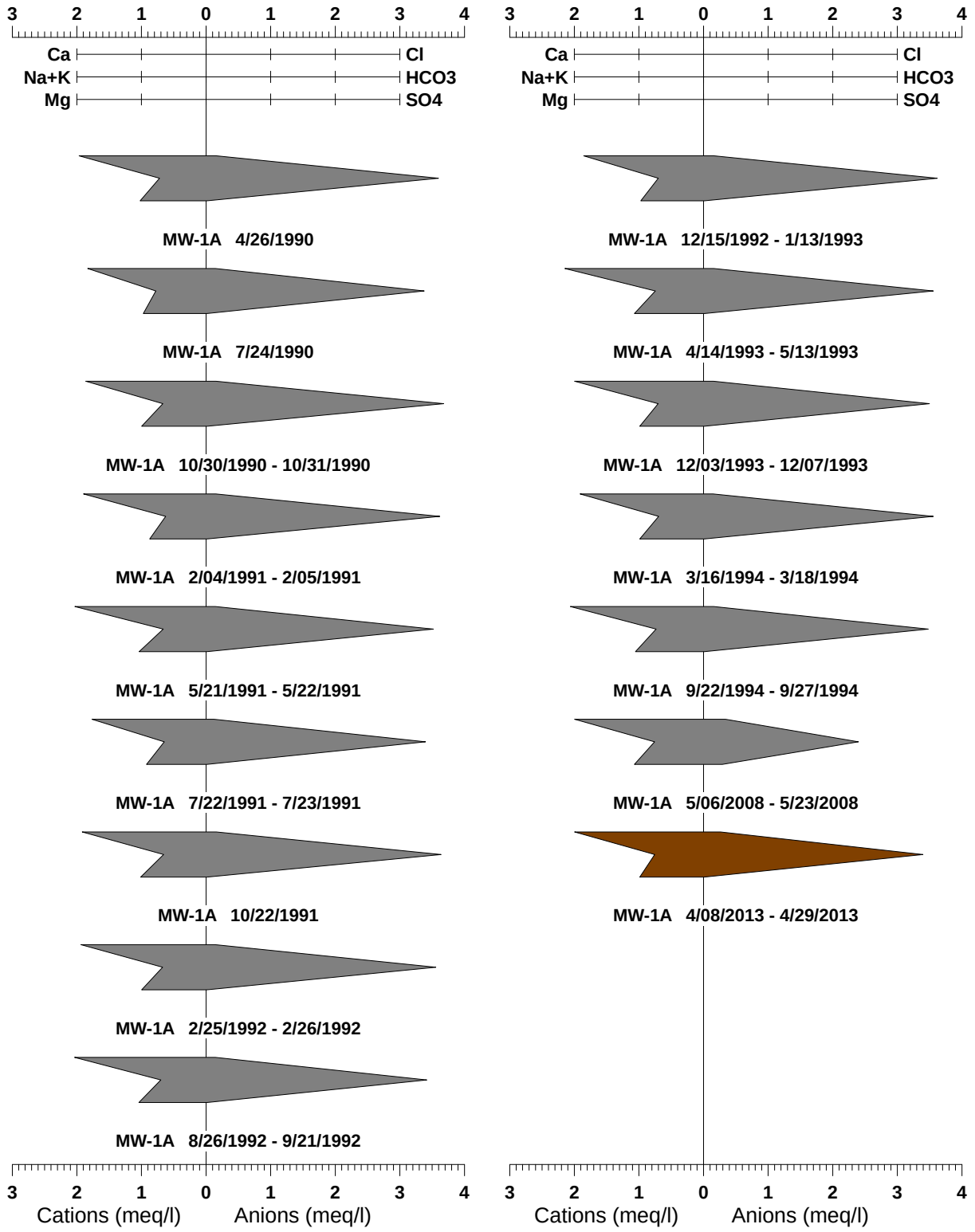
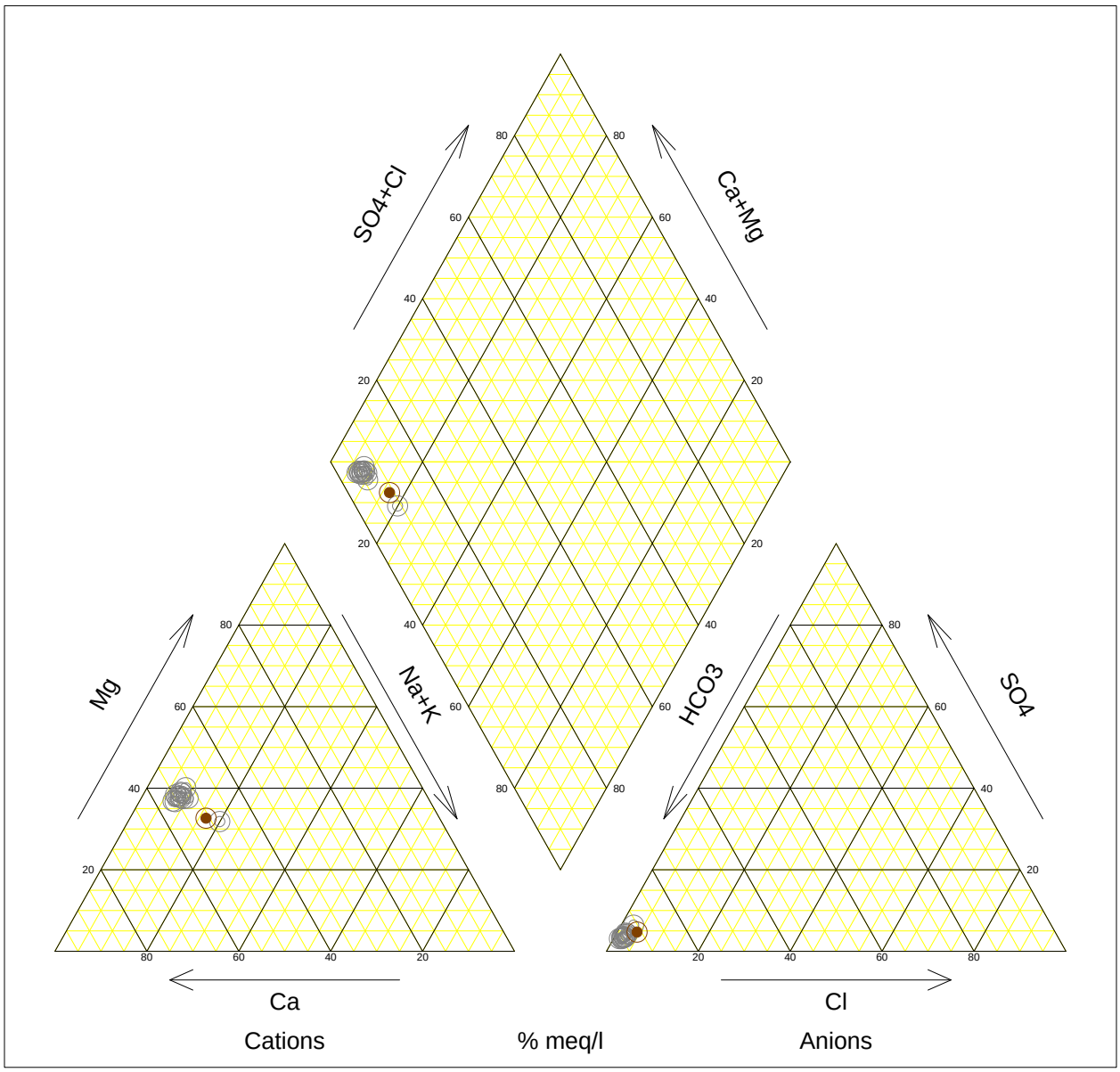
MW-1A Stiff Diagrams



Prepared by: SCS Engineers

MW-1B Trilinear Diagram



MW-1B	4/26/1990	MW-1B	4/14/1993 - 5/13/1993
MW-1B	10/30/1990 - 10/31/1990	MW-1B	12/03/1993 - 12/07/1993
MW-1B	2/04/1991 - 2/05/1991	MW-1B	3/16/1994 - 3/18/1994
MW-1B	5/21/1991 - 5/22/1991	MW-1B	9/22/1994 - 9/27/1994
MW-1B	7/22/1991 - 7/23/1991	MW-1B	5/06/2008 - 5/23/2008
MW-1B	2/25/1992 - 2/26/1992	MW-1B	4/08/2013 - 4/29/2013
MW-1B	8/26/1992 - 9/21/1992		
MW-1B	12/15/1992 - 1/13/1993		

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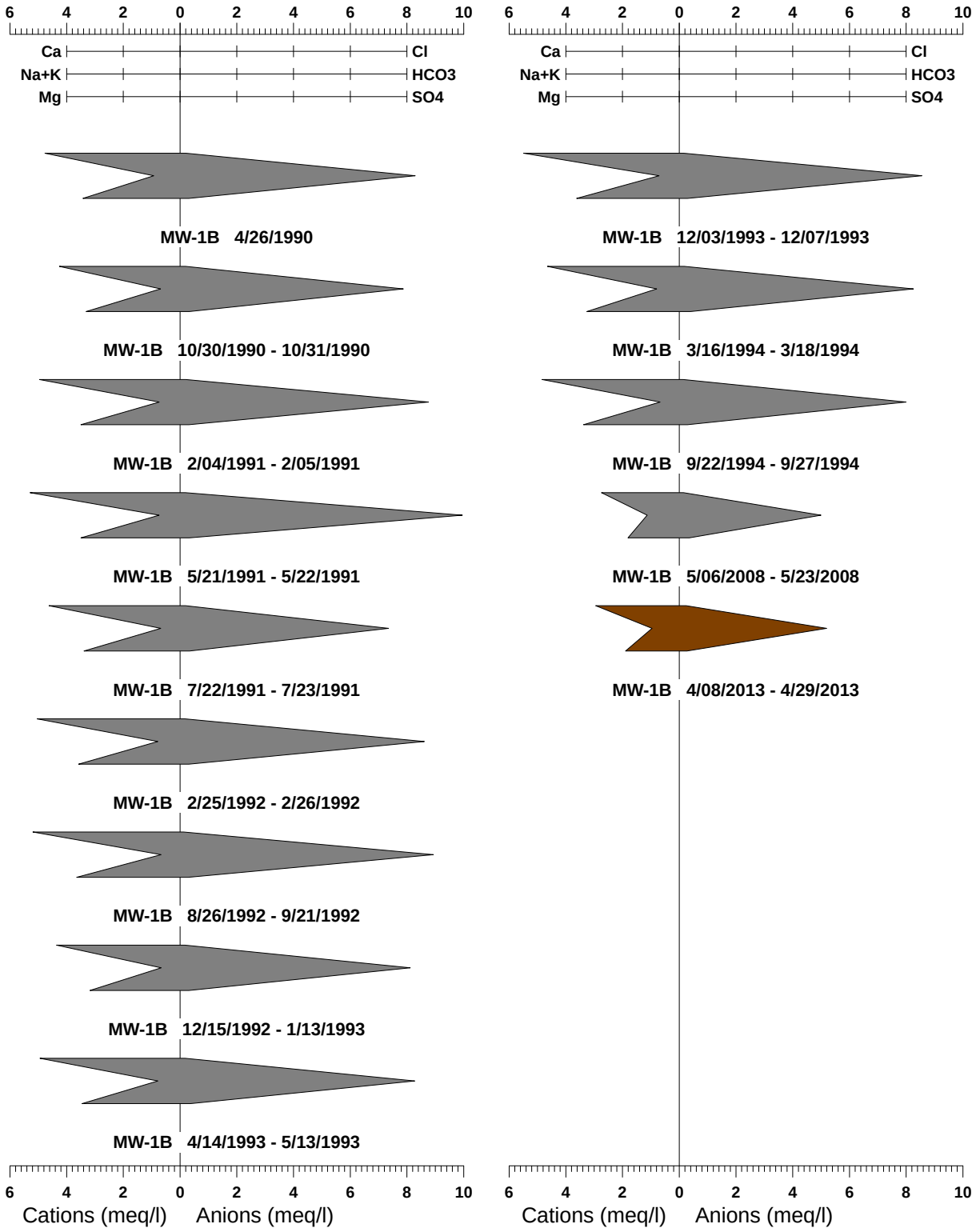
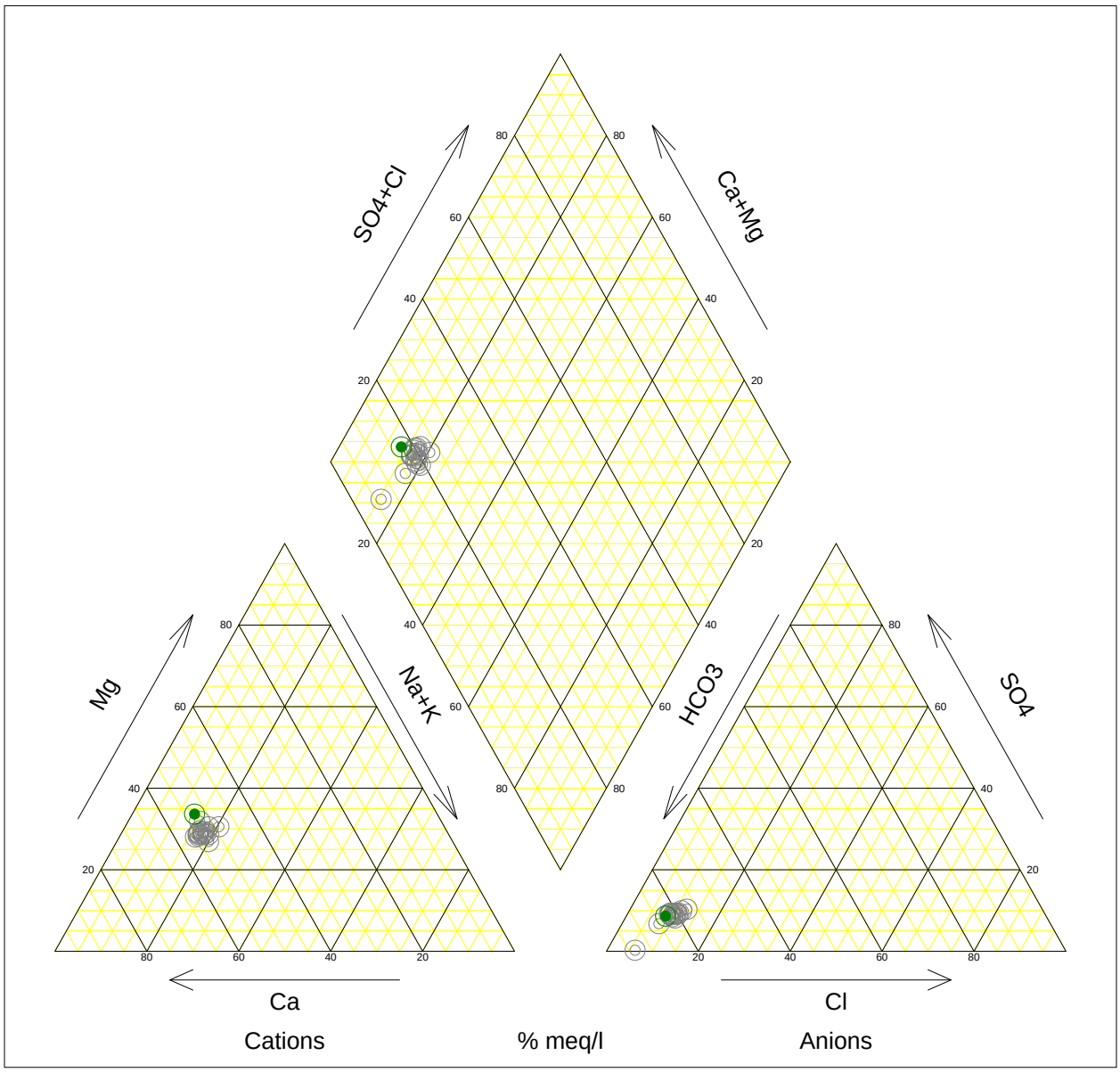
MW-1B Stiff Diagrams



Prepared by: SCS Engineers

MW-2 Trilinear Diagram



◎	MW-2	4/26/1990	◎	MW-2	8/26/1992 - 9/21/1992
◎	MW-2	7/24/1990	◎	MW-2	12/15/1992 - 1/13/1993
◎	MW-2	10/30/1990 -10/31/1990	◎	MW-2	4/14/1993 - 5/13/1993
◎	MW-2	2/04/1991 - 2/05/1991	◎	MW-2	12/03/1993 -12/07/1993
◎	MW-2	5/21/1991 - 5/22/1991	◎	MW-2	3/16/1994 - 3/18/1994
◎	MW-2	7/22/1991 - 7/23/1991	◎	MW-2	9/22/1994 - 9/27/1994
◎	MW-2	10/22/1991	◎	MW-2	5/06/2008 - 5/23/2008
◎	MW-2	2/25/1992 - 2/26/1992	●	MW-2	4/08/2013 - 4/29/2013

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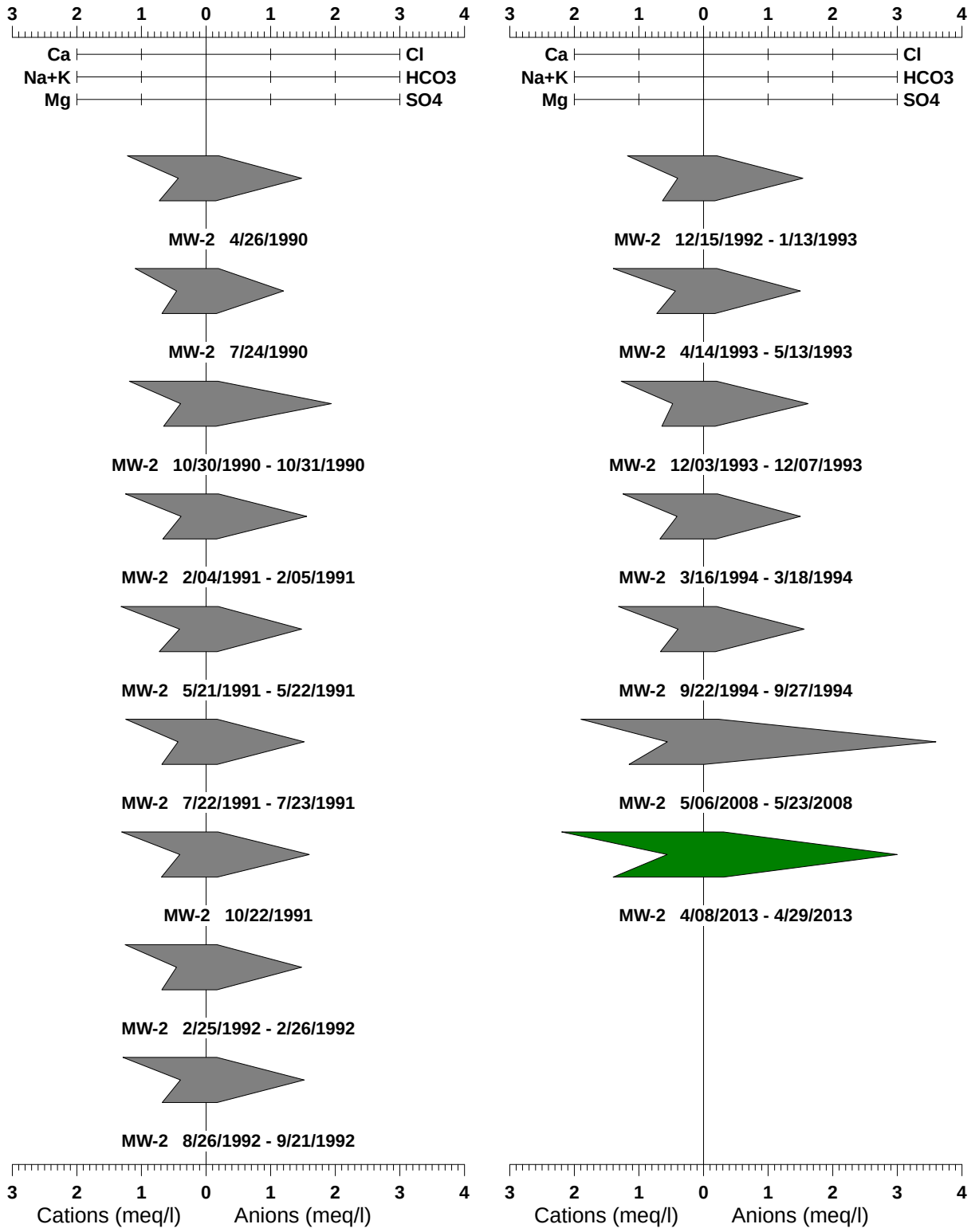
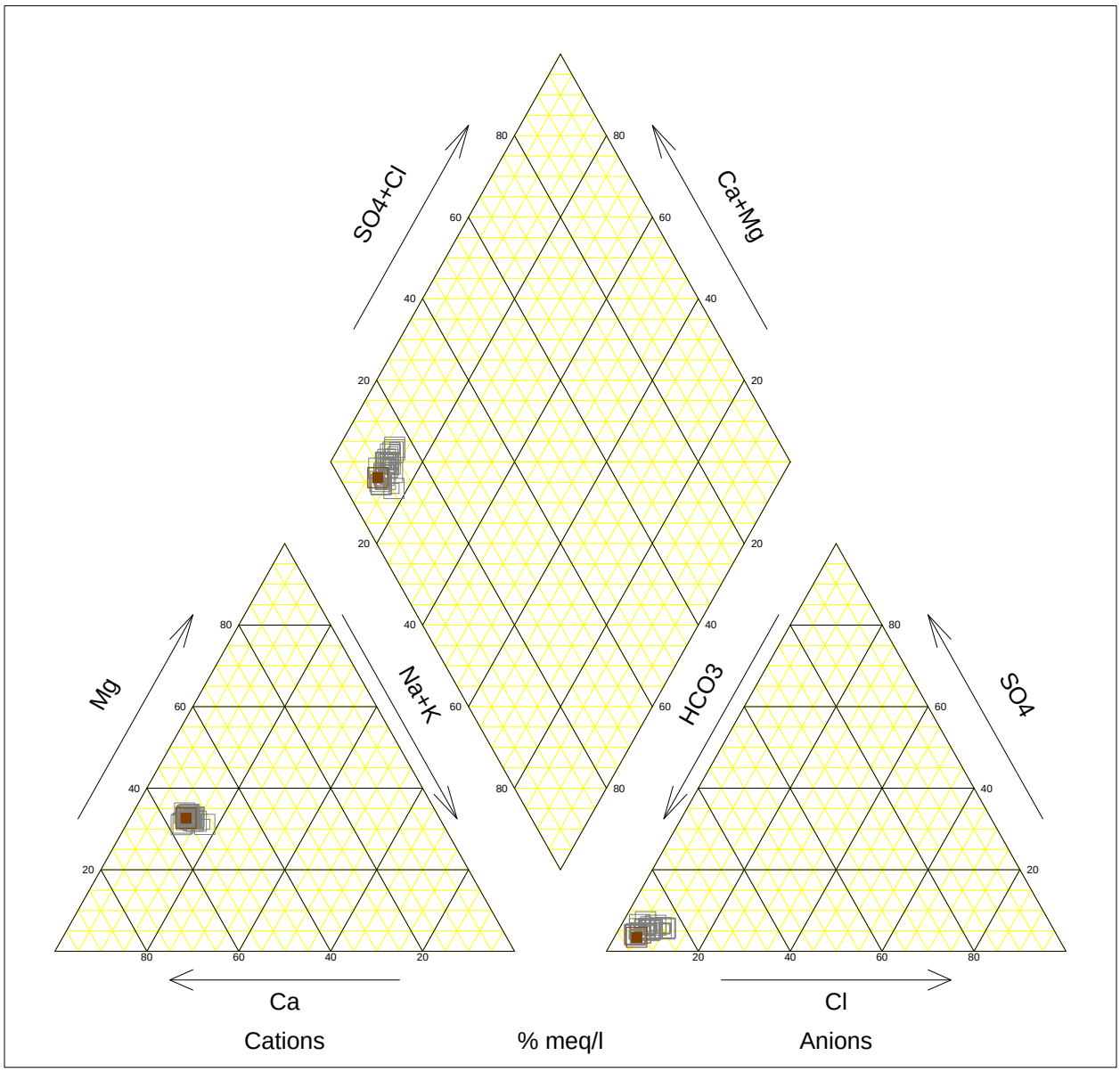
MW-2 Stiff Diagrams



Prepared by: SCS Engineers

MW-10A Trilinear Diagram



MW-10A	12/03/1993	12/07/1993	MW-10A	8/15/2001	8/30/2001
MW-10A	3/16/1994	3/18/1994	MW-10A	10/18/2001	11/09/2001
MW-10A	6/14/1994	6/17/1994	MW-10A	1/07/2002	1/31/2002
MW-10A	9/22/1994	9/27/1994	MW-10A	3/15/2002	4/12/2002
MW-10A	12/05/1994	12/09/1994	MW-10A	7/08/2002	8/05/2002
MW-10A	3/27/1995	3/29/1995	MW-10A	9/11/2002	10/11/2002
MW-10A	5/22/1996	5/28/1996	MW-10A	2/25/2003	2/27/2003
MW-10A	12/16/1996	1/14/1997	MW-10A	5/13/2003	5/16/2003
MW-10A	3/01/2001	3/27/2001	MW-10A	5/06/2008	5/23/2008
MW-10A	4/26/2001	5/11/2001	MW-10A	4/08/2013	4/29/2013

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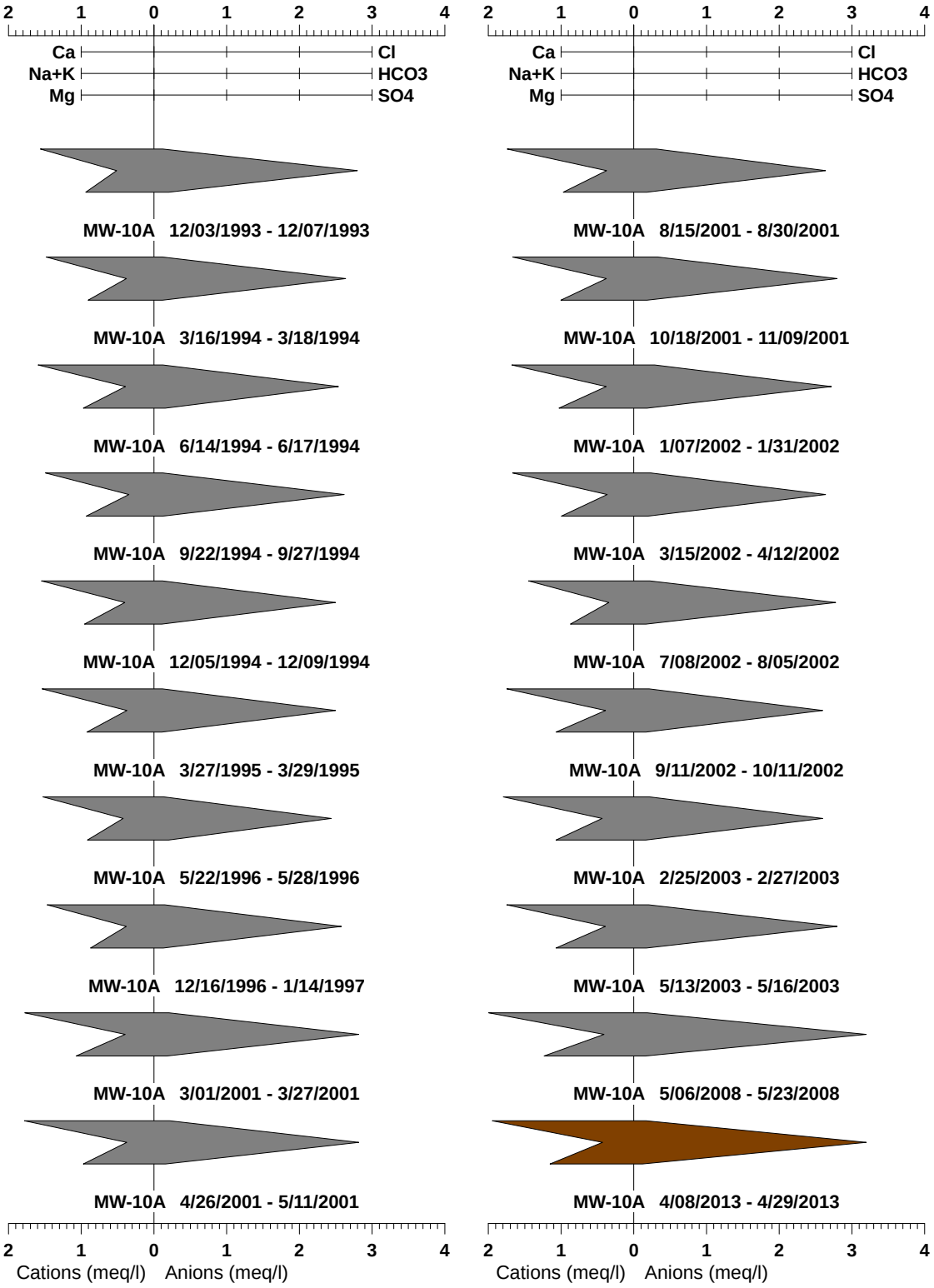
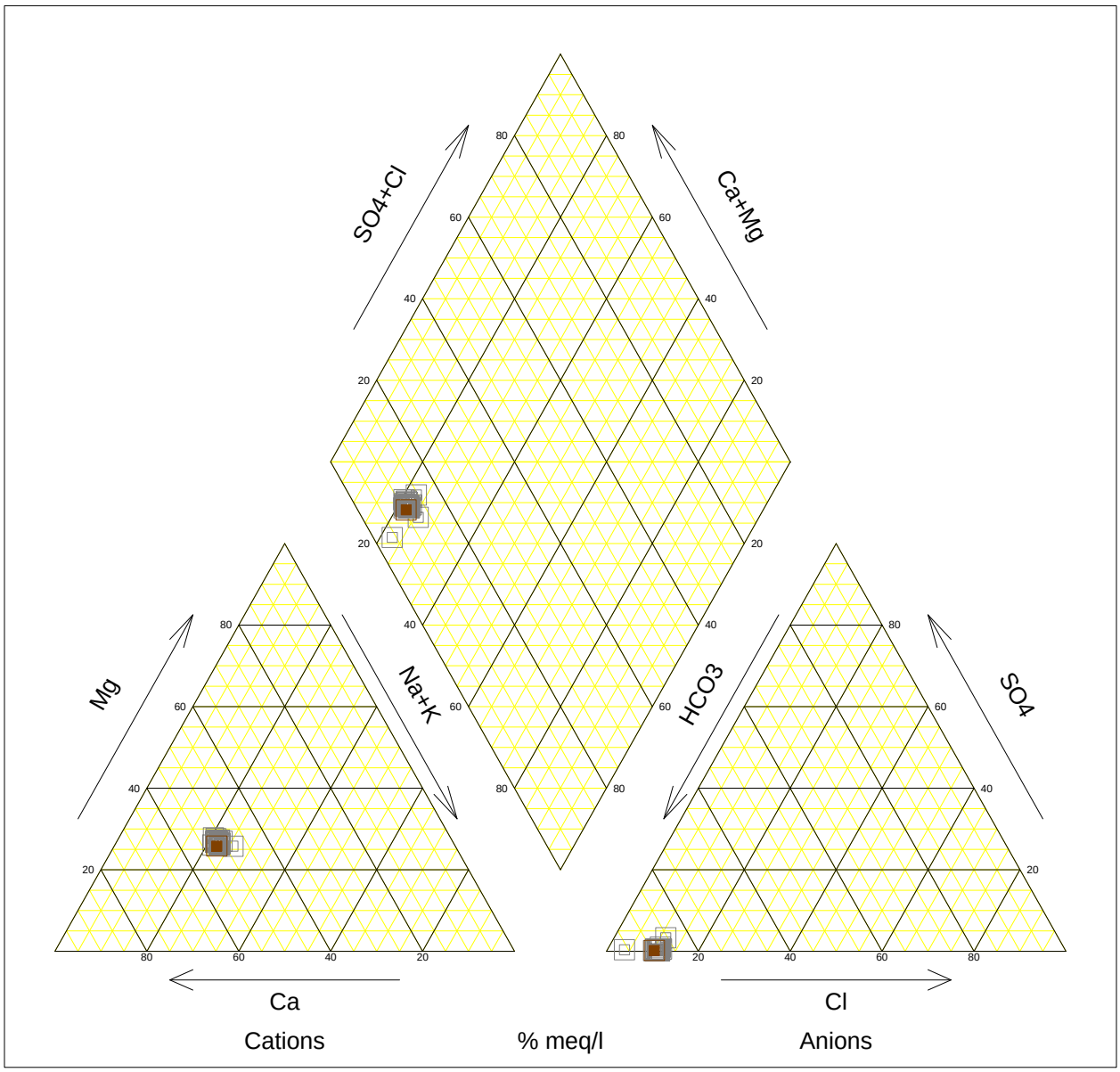
MW-10A Stiff Diagrams



Prepared by: SCS Engineers

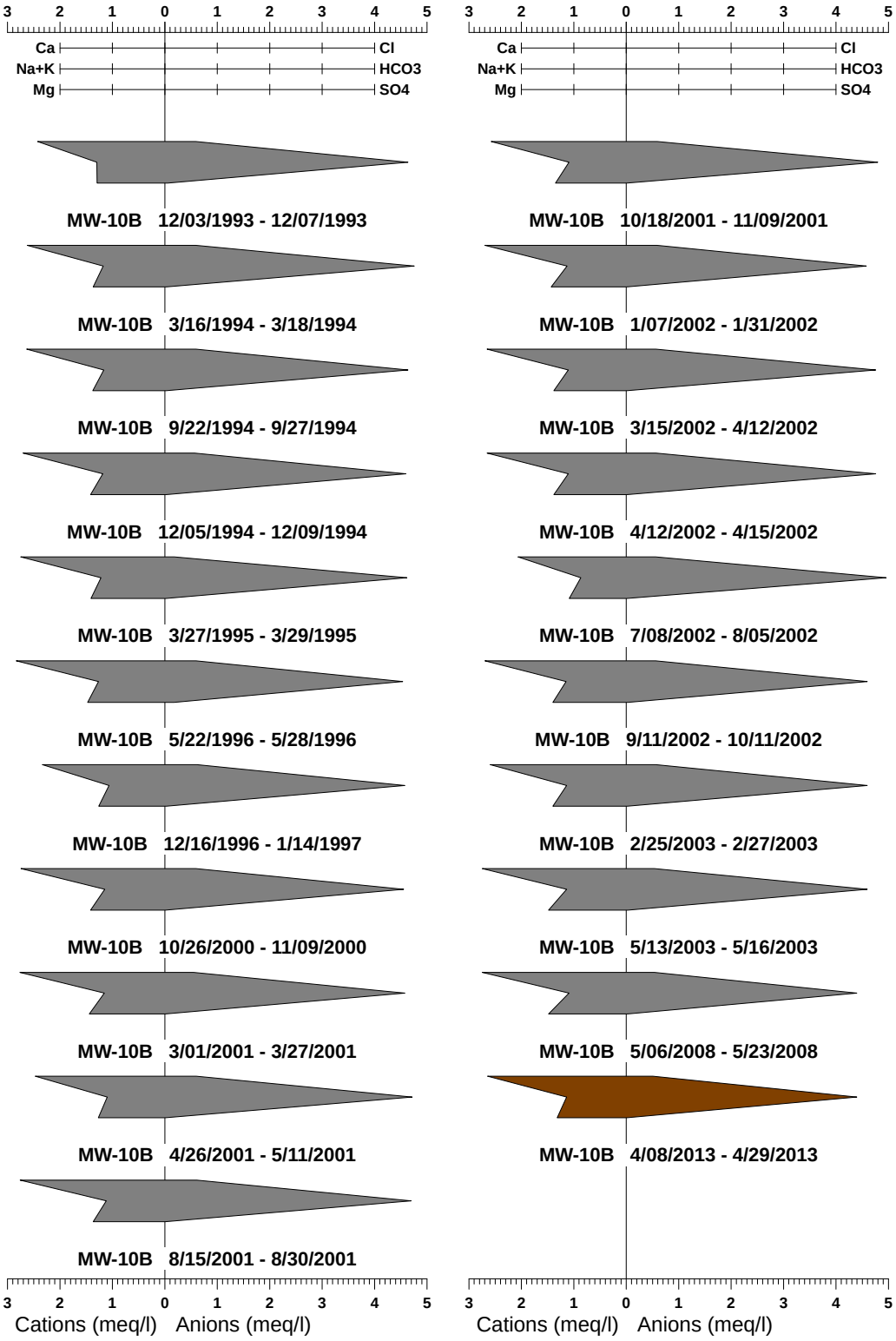
MW-10B Trilinear Diagram



MW-10B	12/03/1993	12/07/1993	MW-10B	10/18/2001	11/09/2001
MW-10B	3/16/1994	3/18/1994	MW-10B	1/07/2002	1/31/2002
MW-10B	9/22/1994	9/27/1994	MW-10B	3/15/2002	4/12/2002
MW-10B	12/05/1994	12/09/1994	MW-10B	4/12/2002	4/15/2002
MW-10B	3/27/1995	3/29/1995	MW-10B	7/08/2002	8/05/2002
MW-10B	5/22/1996	5/28/1996	MW-10B	9/11/2002	10/11/2002
MW-10B	12/16/1996	1/14/1997	MW-10B	2/25/2003	2/27/2003
MW-10B	10/26/2000	11/09/2000	MW-10B	5/13/2003	5/16/2003
MW-10B	3/01/2001	3/27/2001	MW-10B	5/06/2008	5/23/2008
MW-10B	4/26/2001	5/11/2001	MW-10B	4/08/2013	4/29/2013
MW-10B	8/15/2001	8/30/2001			

Prepared by: SCS Engineers

MW-10B Stiff Diagrams



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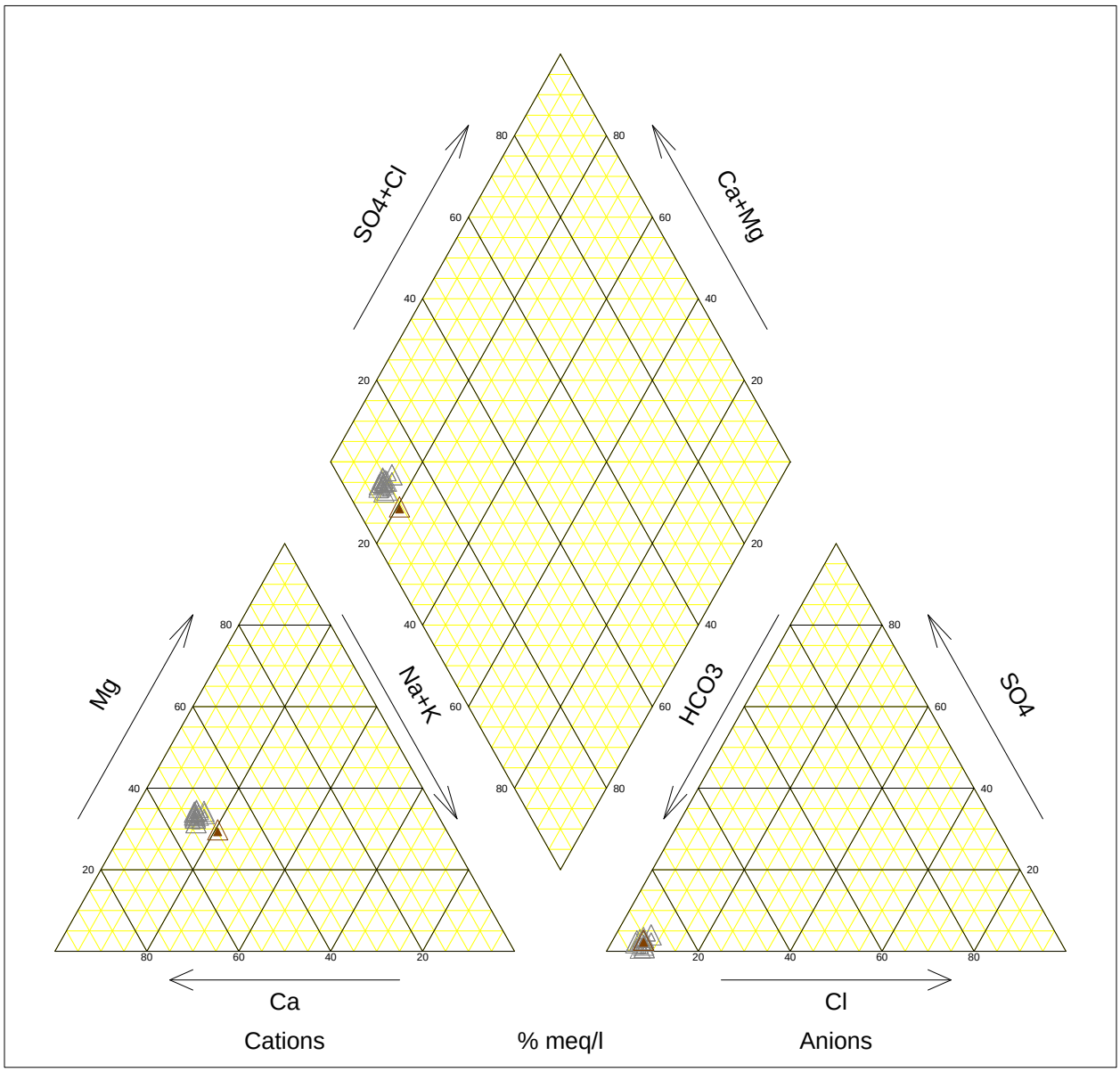
MW-18A Trilinear Diagram



MW-18A	3/01/2001 -	3/27/2001	MW-18A	7/08/2002 -	8/05/2002
MW-18A	4/26/2001 -	5/11/2001	MW-18A	9/11/2002 -	10/11/2002
MW-18A	8/15/2001 -	8/30/2001	MW-18A	2/25/2003 -	2/27/2003
MW-18A	8/30/2001 -	9/27/2001	MW-18A	5/13/2003 -	5/16/2003
MW-18A	10/18/2001 -	11/09/2001	MW-18A	5/06/2008 -	5/23/2008
MW-18A	11/09/2001 -	12/07/2001	MW-18A	4/08/2013 -	4/29/2013
MW-18A	1/07/2002 -	1/31/2002			
MW-18A	3/15/2002 -	4/12/2002			

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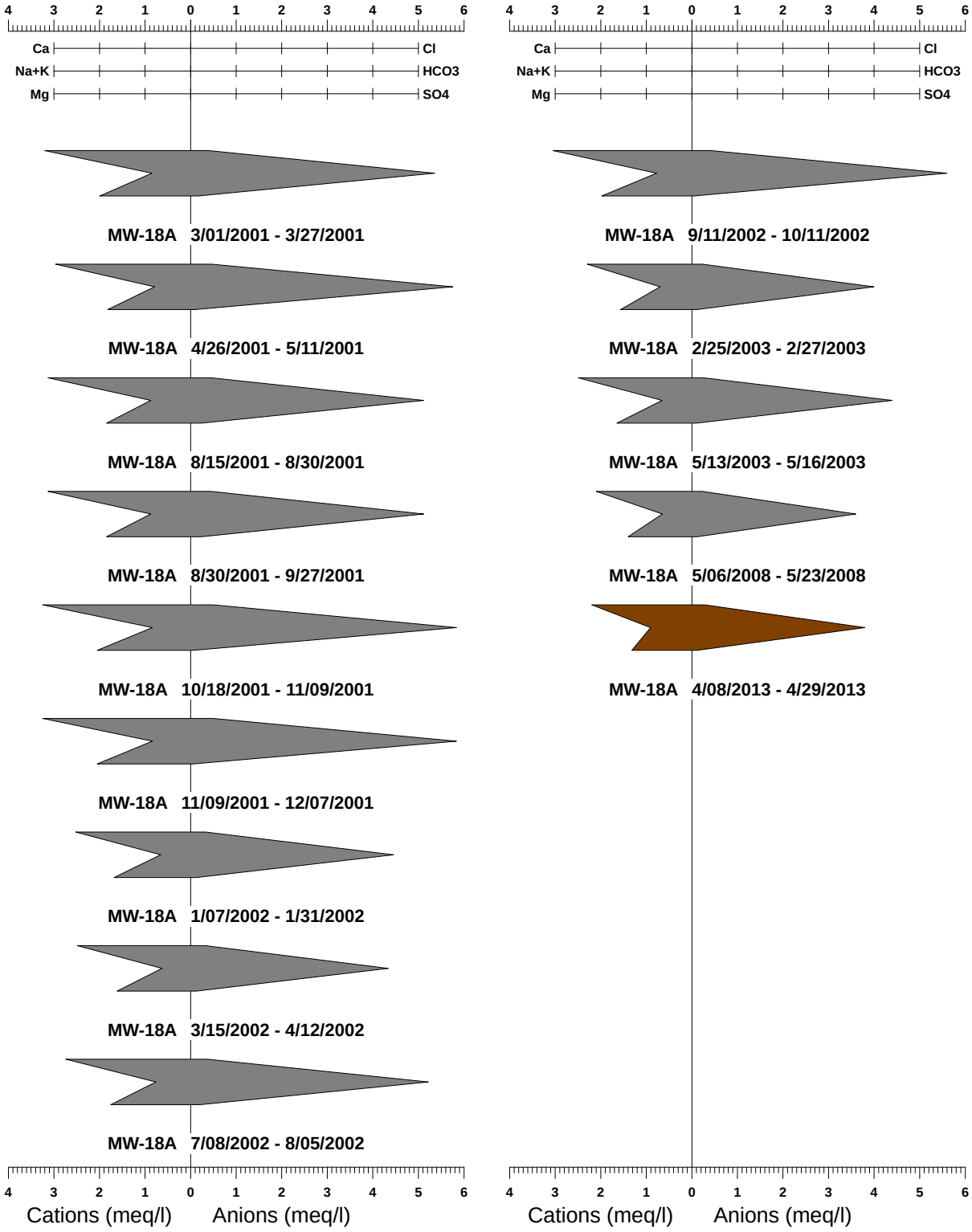
MW-18A Stiff Diagrams



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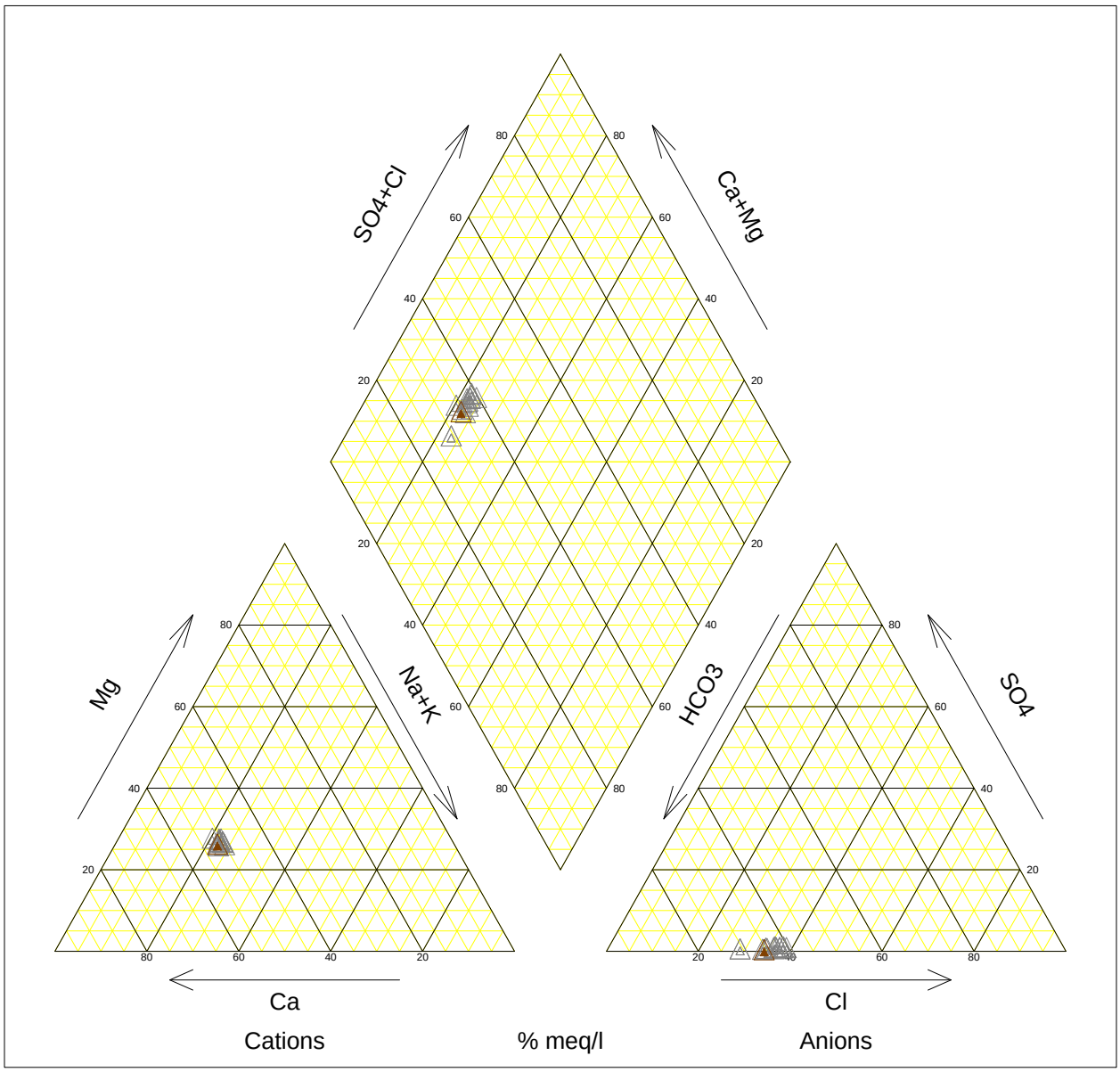
MW-18B Trilinear Diagram



MW-18B	10/26/2000 - 11/09/2000		MW-18B	3/15/2002 - 4/12/2002
MW-18B	3/01/2001 - 3/27/2001		MW-18B	7/08/2002 - 8/05/2002
MW-18B	4/26/2001 - 5/11/2001		MW-18B	9/11/2002 - 10/11/2002
MW-18B	8/15/2001 - 8/30/2001		MW-18B	2/25/2003 - 2/27/2003
MW-18B	8/30/2001 - 9/27/2001		MW-18B	5/13/2003 - 5/16/2003
MW-18B	10/18/2001 - 11/09/2001		MW-18B	5/06/2008 - 5/23/2008
MW-18B	11/09/2001 - 12/07/2001		MW-18B	4/08/2013 - 4/29/2013
MW-18B	1/07/2002 - 1/31/2002			

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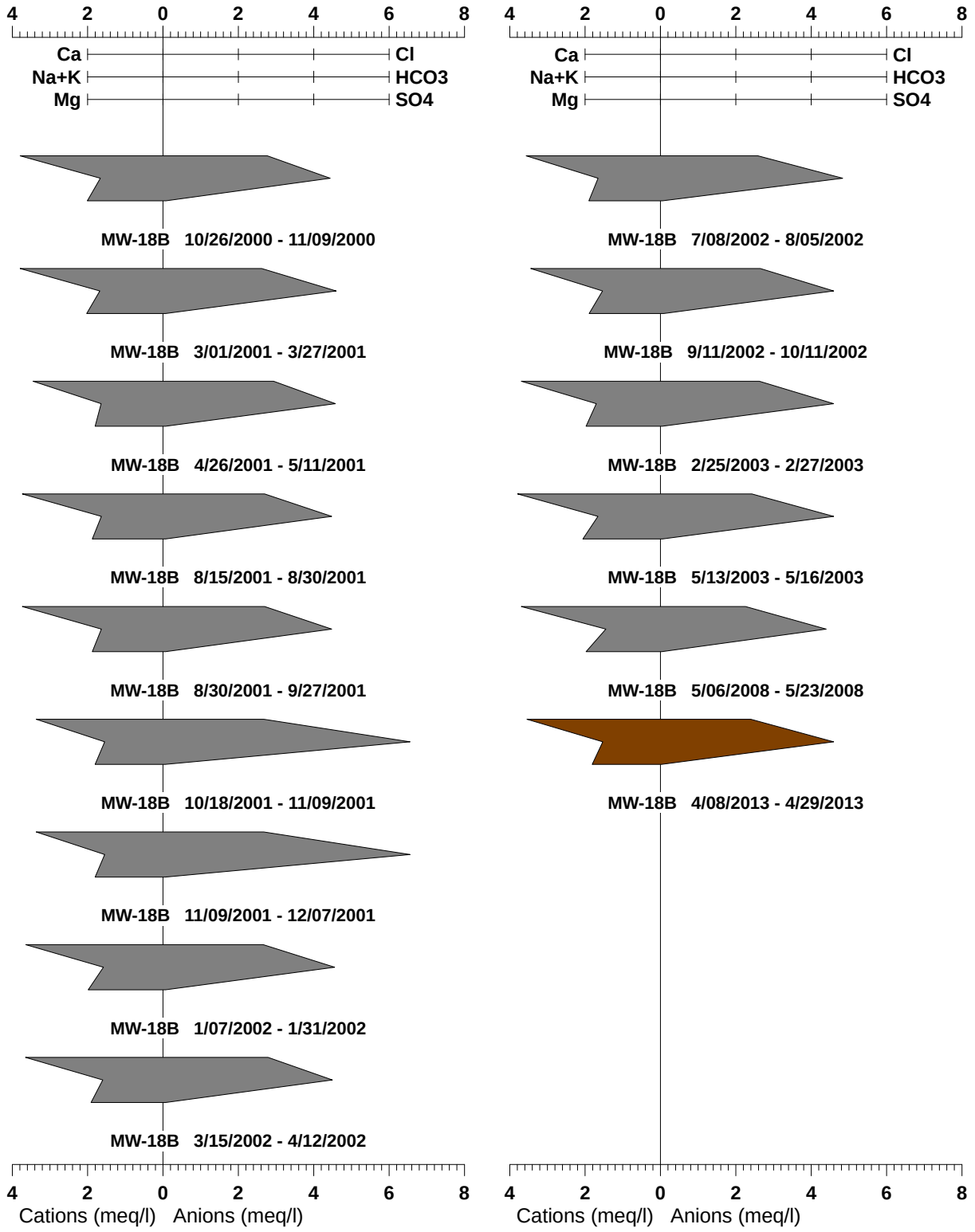
MW-18B Stiff Diagrams



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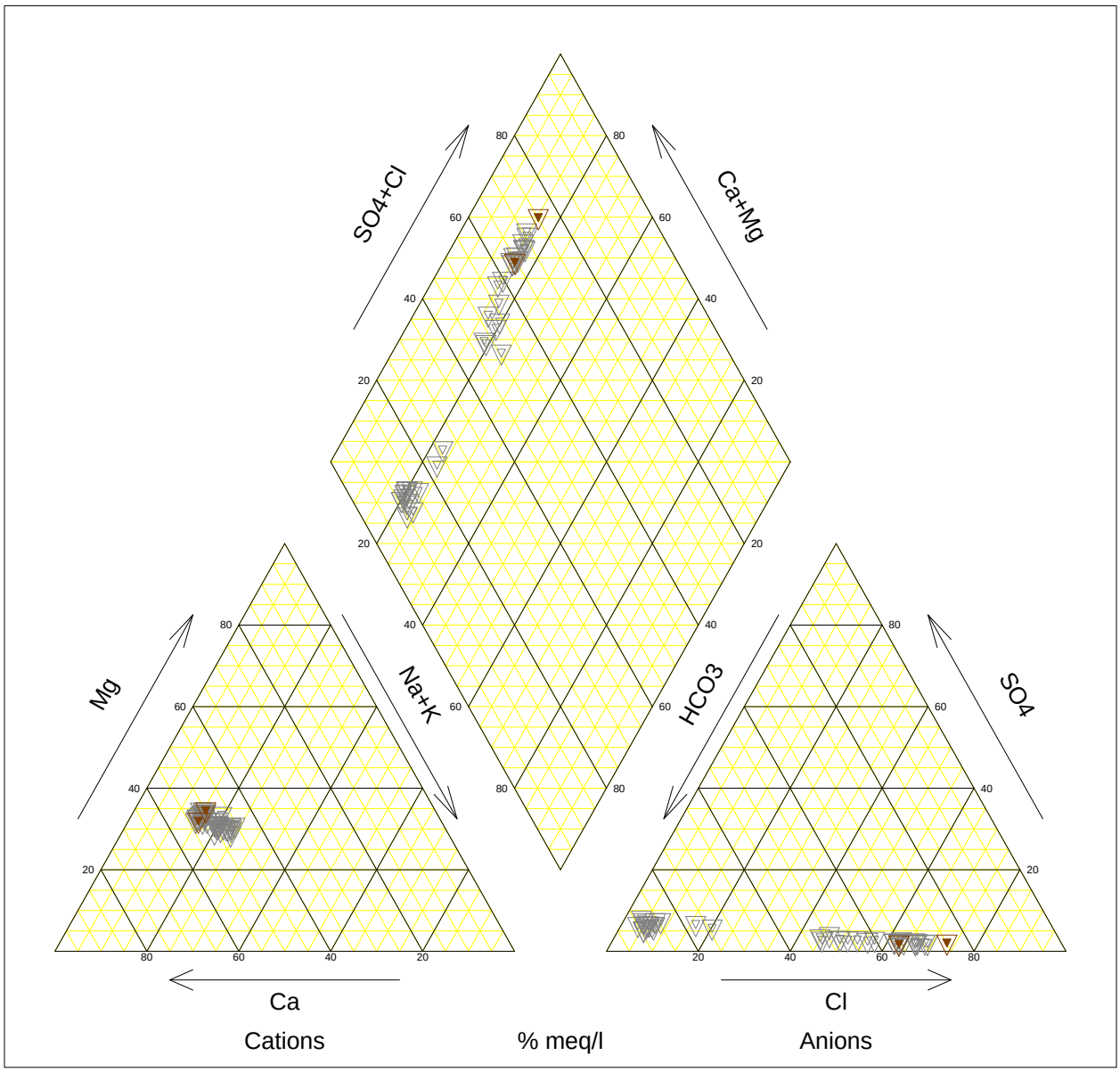
MW-20A Trilinear Diagram



MW-20A	3/01/2001 -	3/27/2001	MW-20A	4/20/2004 -	4/22/2004	MW-20A	11/19/2009 -	12/18/2009
MW-20A	4/26/2001 -	5/11/2001	MW-20A	11/09/2004 -	11/11/2004	MW-20A	4/02/2010 -	4/28/2010
MW-20A	8/15/2001 -	8/30/2001	MW-20A	5/24/2005 -	6/06/2005	MW-20A	9/10/2010 -	10/08/2010
MW-20A	10/18/2001 -	11/09/2001	MW-20A	10/25/2005 -	10/27/2005	MW-20A	4/11/2011 -	4/15/2011
MW-20A	1/07/2002 -	1/31/2002	MW-20A	5/08/2006 -	5/15/2006	MW-20A	10/31/2011 -	11/15/2011
MW-20A	3/15/2002 -	4/12/2002	MW-20A	10/17/2006 -	10/19/2006	MW-20A	1/12/2012 -	2/09/2012
MW-20A	4/12/2002 -	4/15/2002	MW-20A	5/07/2007 -	5/11/2007	MW-20A	5/01/2012 -	5/03/2012
MW-20A	7/08/2002 -	8/05/2002	MW-20A	7/24/2007		MW-20A	11/12/2012 -	11/15/2012
MW-20A	9/11/2002 -	10/11/2002	MW-20A	11/06/2007 -	11/08/2007	MW-20A	4/08/2013 -	4/29/2013
MW-20A	2/25/2003 -	2/27/2003	MW-20A	5/06/2008 -	5/23/2008	MW-20A	10/07/2013 -	10/25/2013
MW-20A	5/13/2003 -	5/16/2003	MW-20A	11/10/2008 -	11/14/2008	MW-20A	10/25/2013 -	11/21/2013
MW-20A	8/19/2003 -	8/22/2003	MW-20A	4/17/2009 -	5/08/2009	MW-20A	4/23/2014 -	5/21/2014
MW-20A	11/18/2003 -	11/20/2003	MW-20A	11/17/2009 -	11/19/2009	MW-20A	10/23/2014 -	11/20/2014

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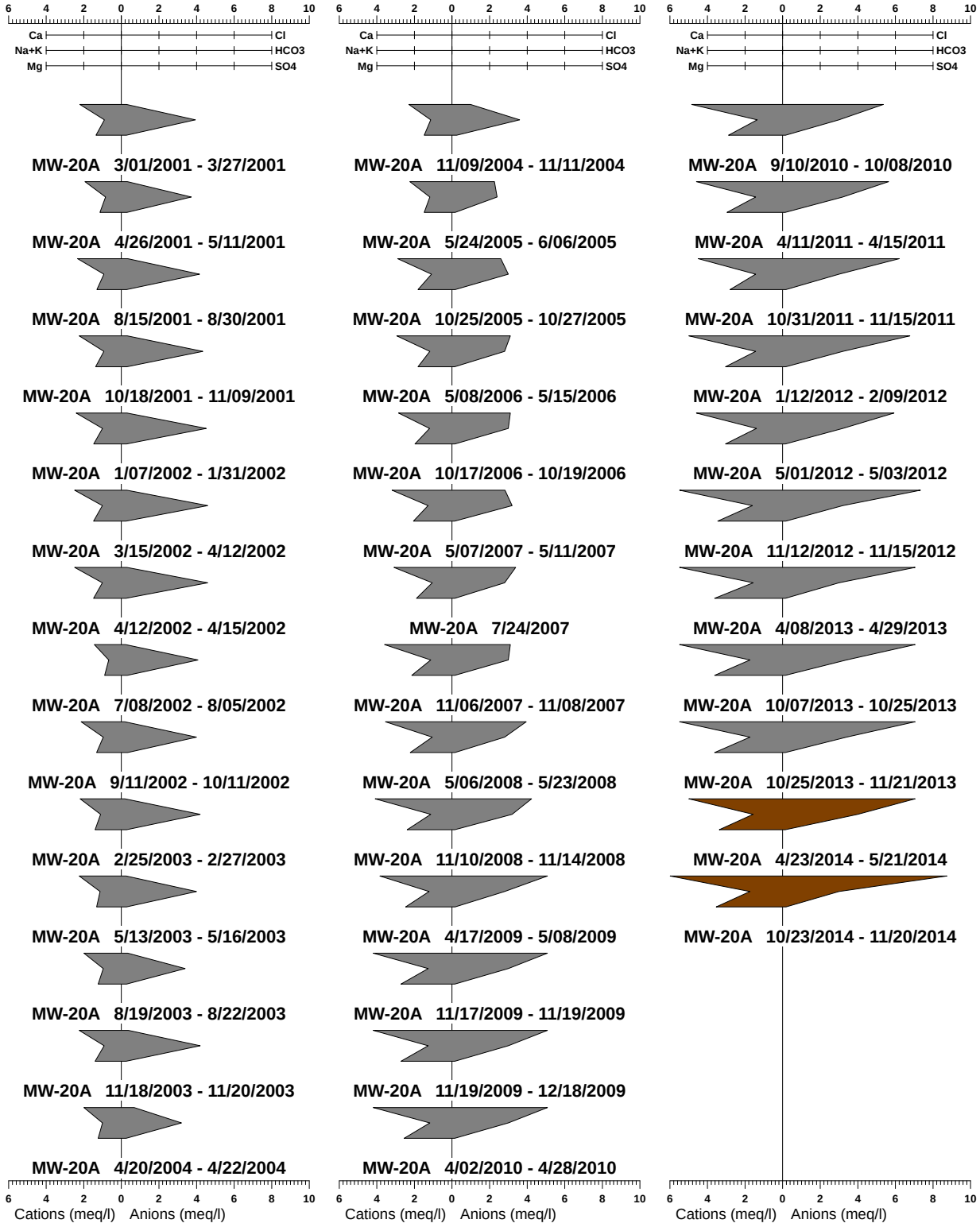
MW-20A Stiff Diagrams



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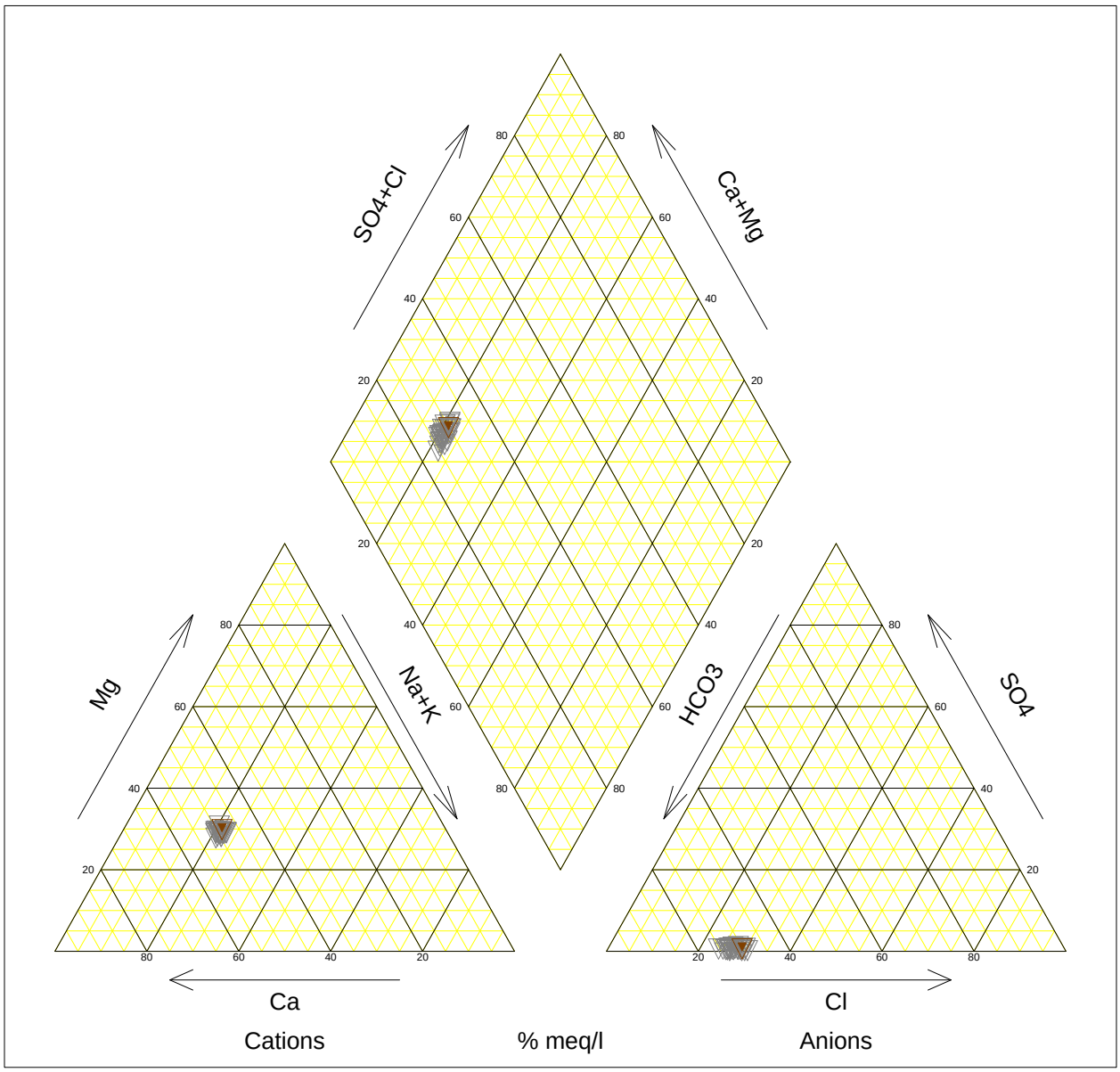
MW-20B Trilinear Diagram



MW-20B	10/26/2000 -	11/09/2000	MW-20B	8/19/2003 -	8/22/2003	MW-20B	4/23/2014 -	5/21/2014
MW-20B	3/01/2001 -	3/27/2001	MW-20B	11/18/2003 -	11/20/2003			
MW-20B	4/26/2001 -	5/11/2001	MW-20B	4/20/2004 -	4/22/2004			
MW-20B	8/15/2001 -	8/30/2001	MW-20B	5/24/2005 -	6/06/2005			
MW-20B	10/18/2001 -	11/09/2001	MW-20B	5/08/2006 -	5/15/2006			
MW-20B	1/07/2002 -	1/31/2002	MW-20B	5/07/2007 -	5/11/2007			
MW-20B	3/15/2002 -	4/12/2002	MW-20B	5/06/2008 -	5/23/2008			
MW-20B	4/12/2002 -	4/15/2002	MW-20B	4/17/2009 -	5/08/2009			
MW-20B	7/08/2002 -	8/05/2002	MW-20B	4/02/2010 -	4/28/2010			
MW-20B	9/11/2002 -	10/11/2002	MW-20B	4/11/2011 -	4/15/2011			
MW-20B	2/25/2003 -	2/27/2003	MW-20B	5/01/2012 -	5/03/2012			
MW-20B	5/13/2003 -	5/16/2003	MW-20B	4/08/2013 -	4/29/2013			

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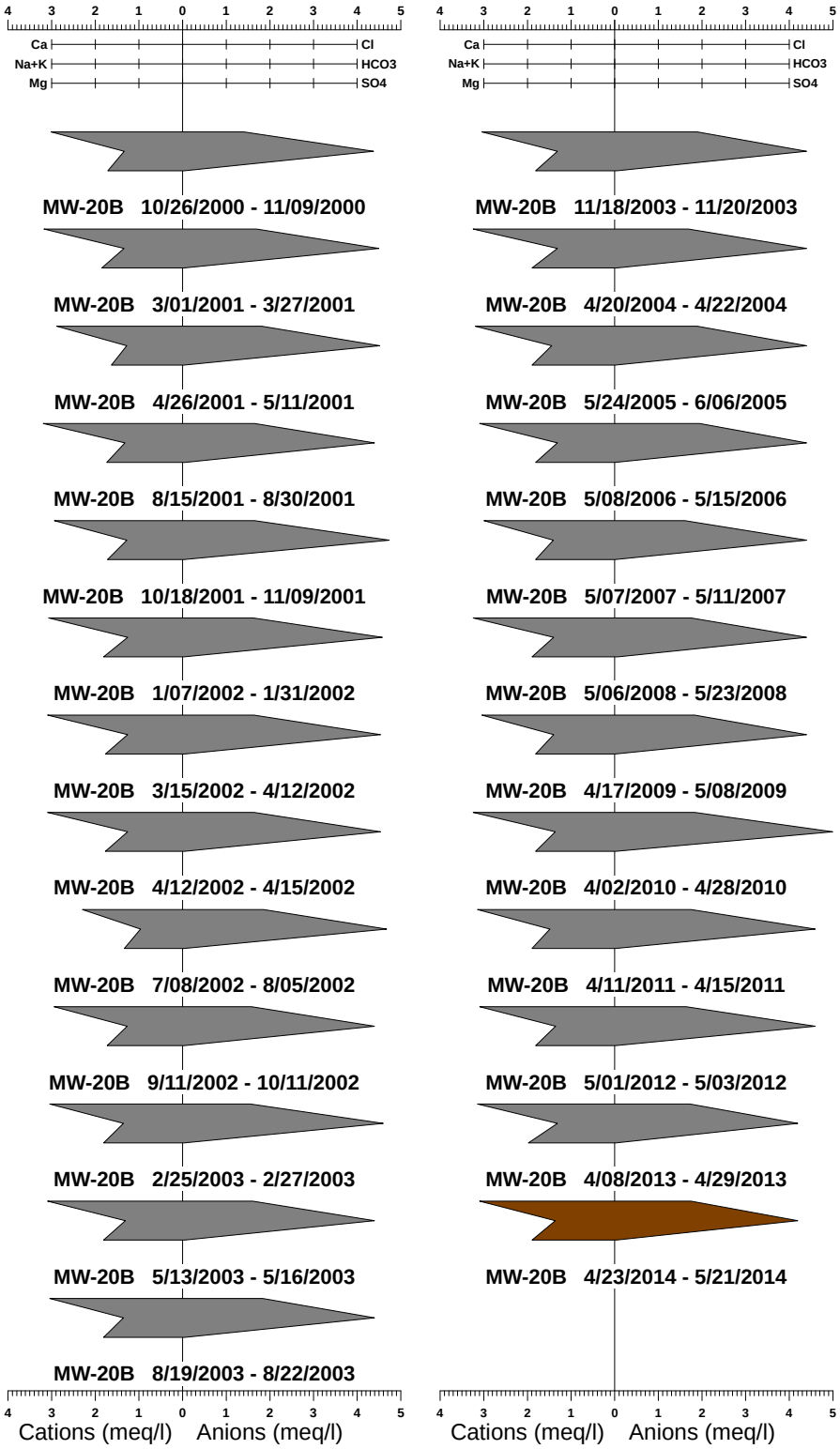
MW-20B Stiff Diagrams



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